Appendix H

Hydraulic Modeling Data

Appendix H-1

Plumtree Branch: Existing Conditions Hydraulic Modeling

ValleyMede_Plumtree Plan: Plumtree 9/25/2017

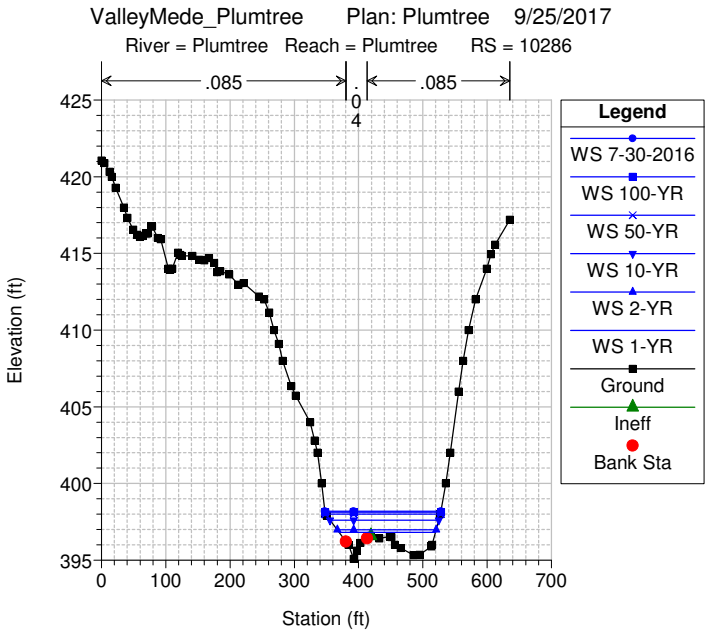
Plumtree Plumtree

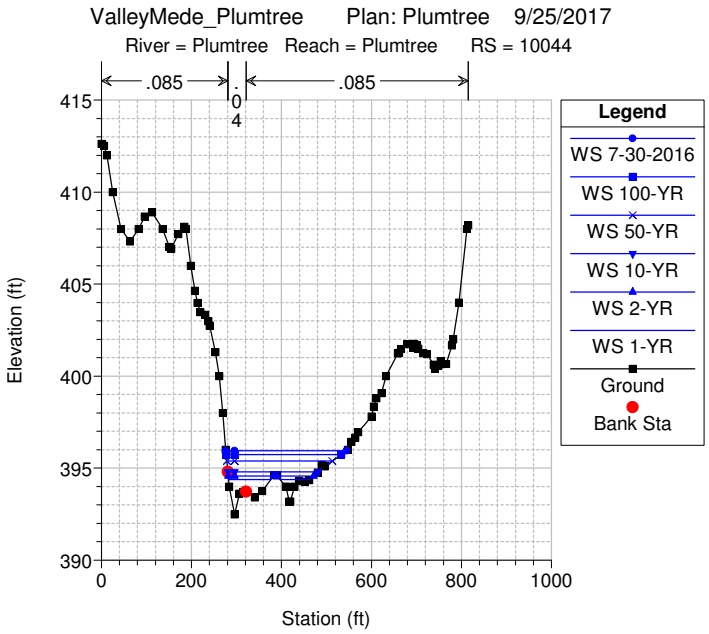
Elevation (ft)

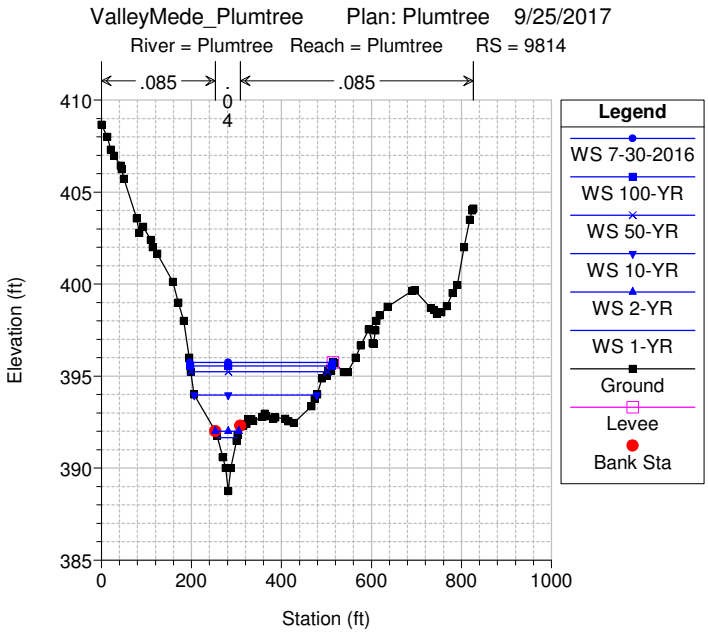
Main Channel Distance (ft)

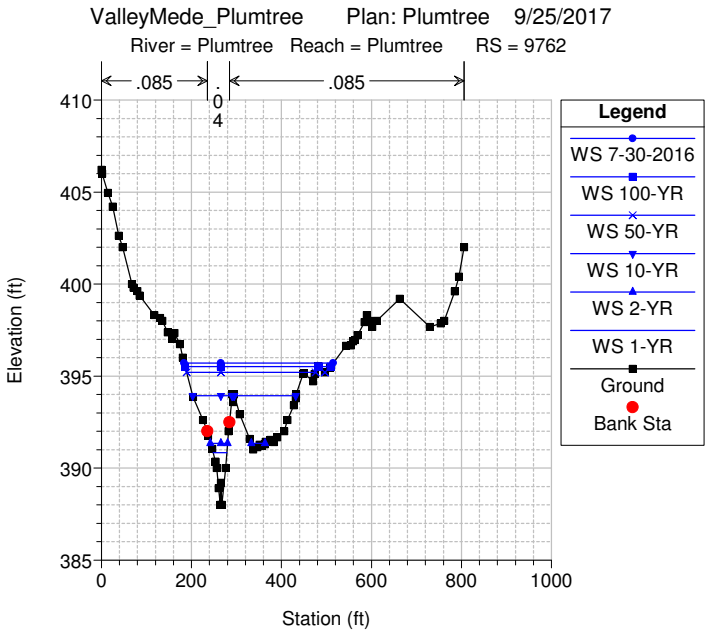
Legend

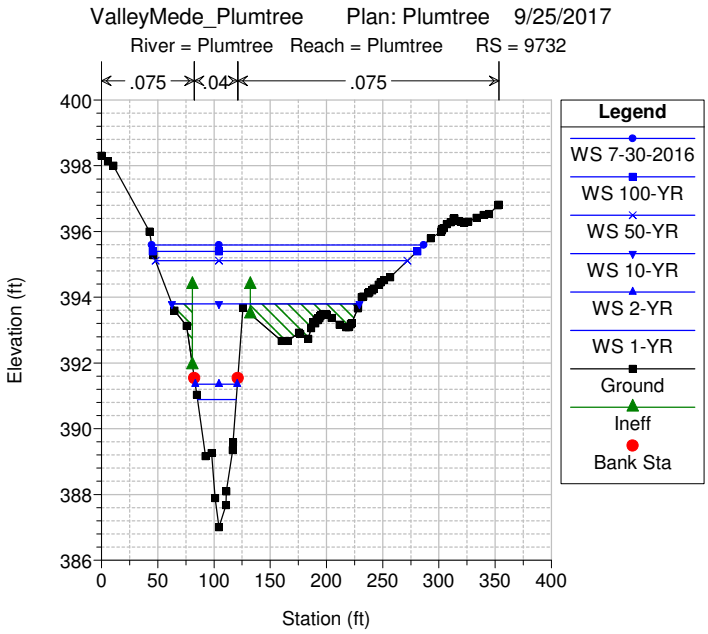
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
LOB
ROB
Right Levee

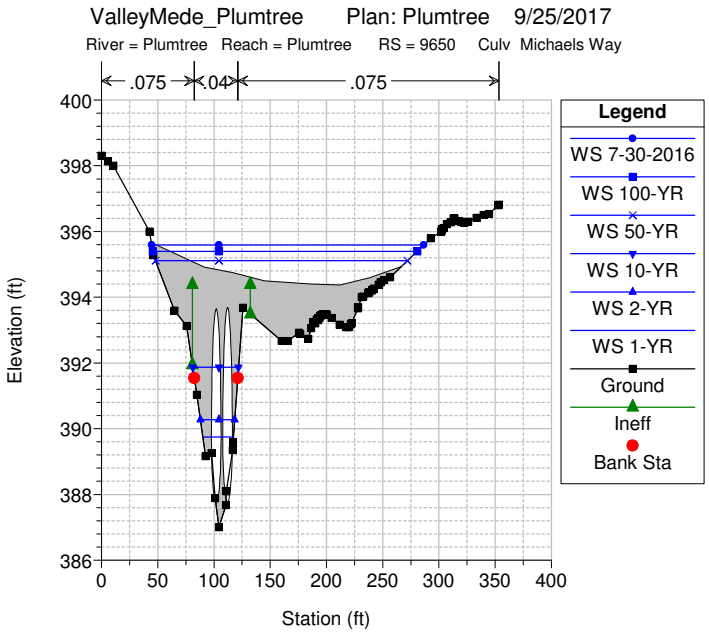

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 10286
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

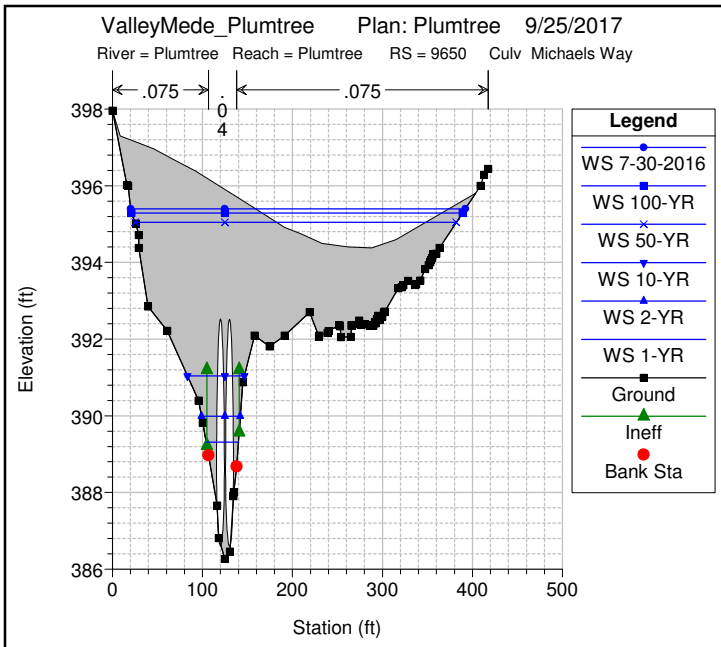

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 10044
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

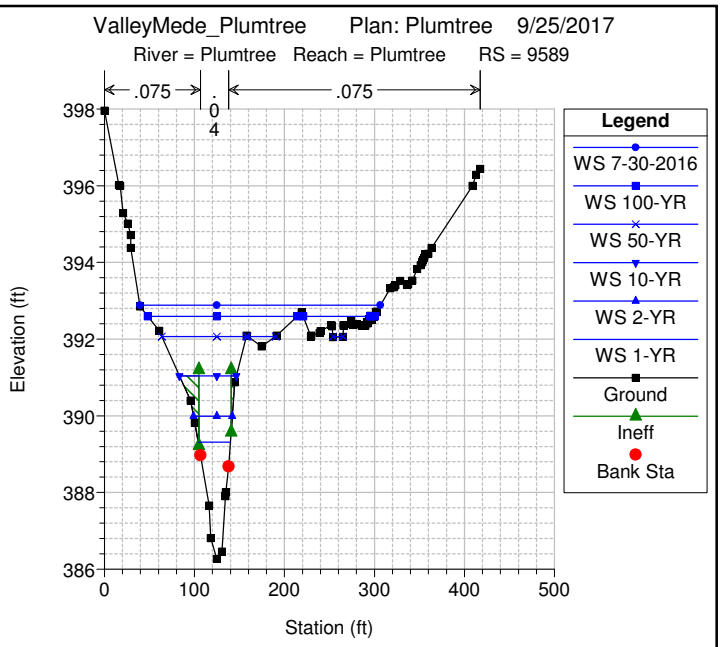

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 9814
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

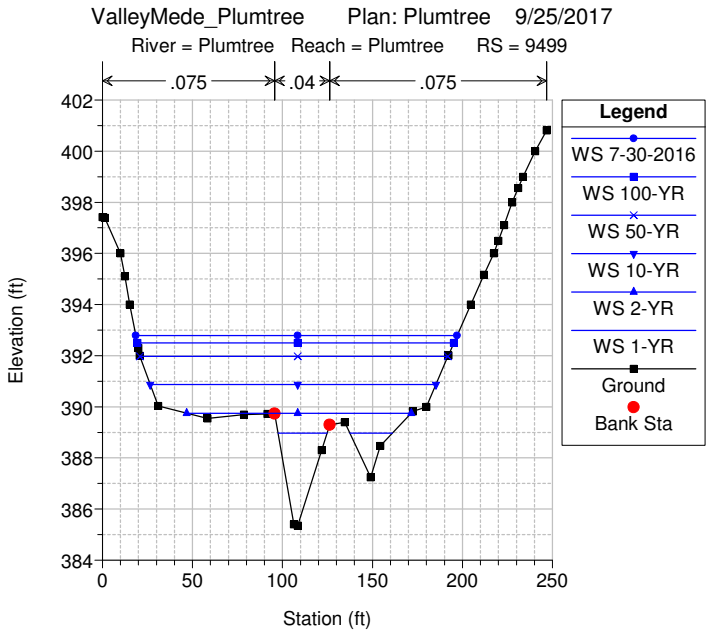

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 9762
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

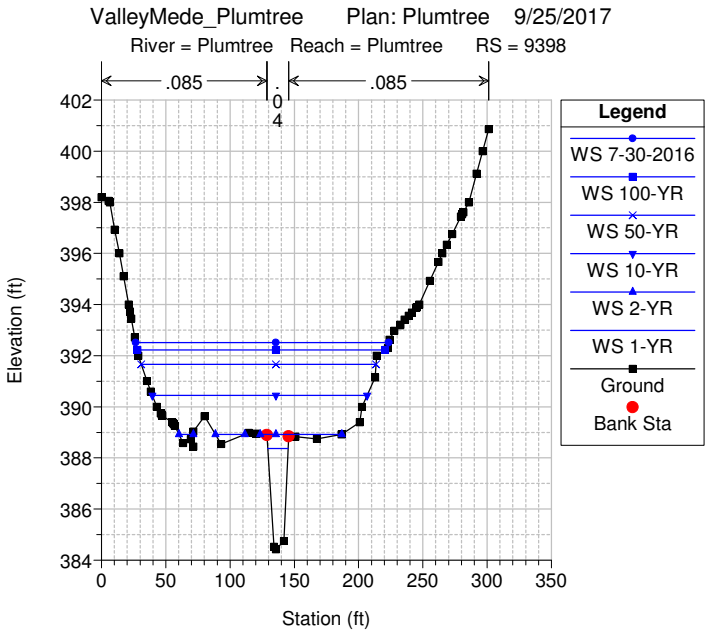

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 9732
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

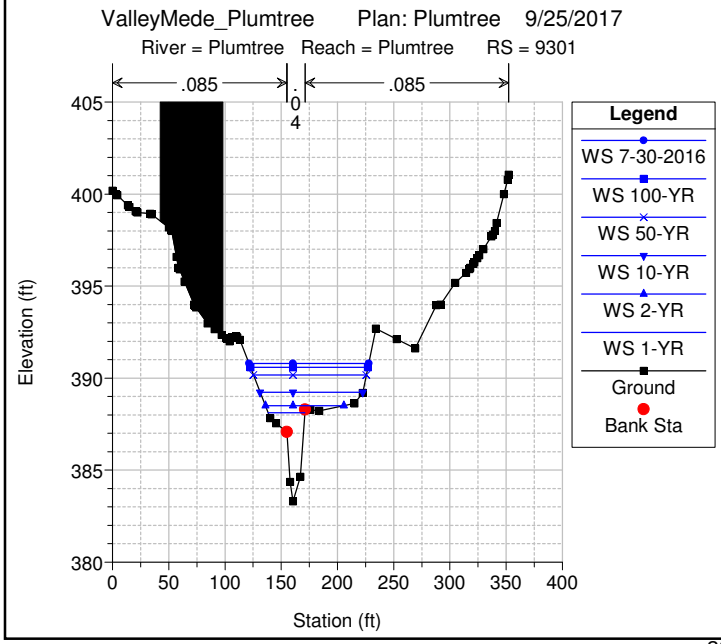

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

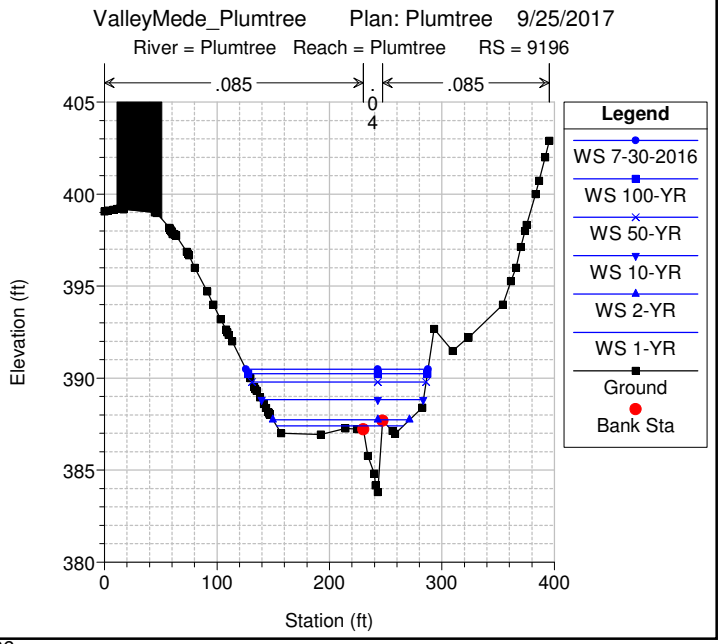

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

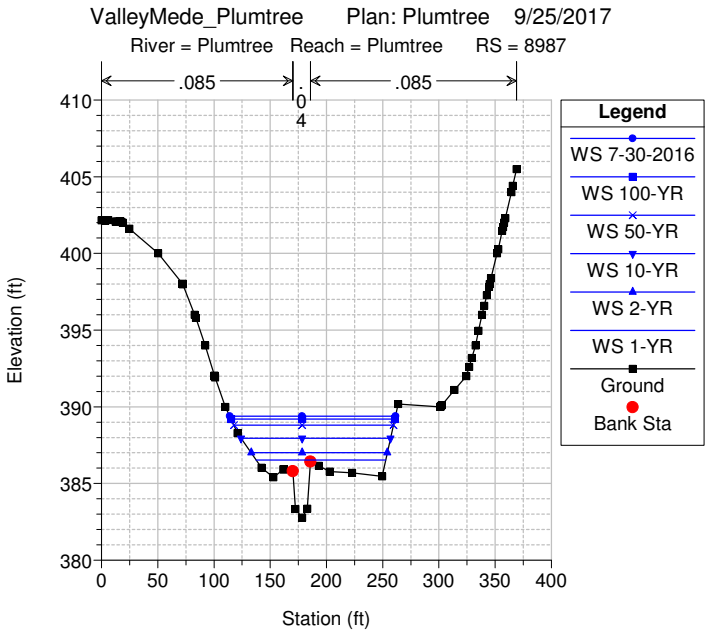

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 9589
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

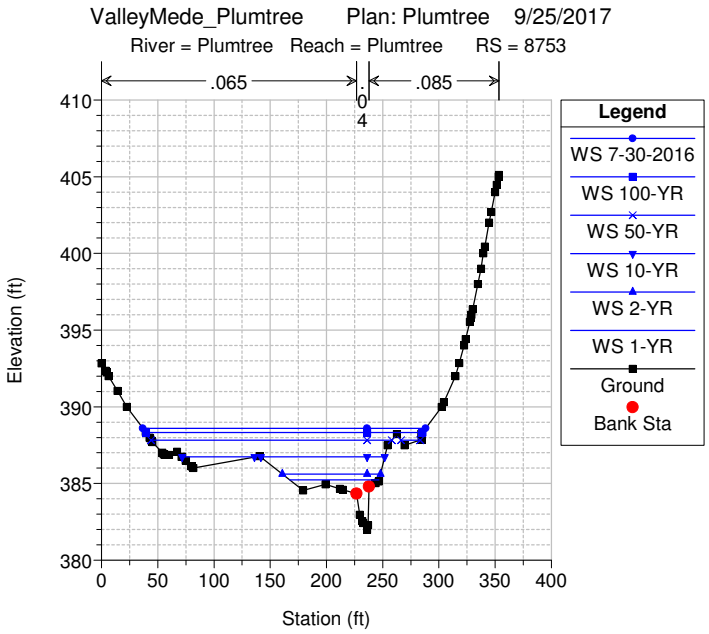

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 9499
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

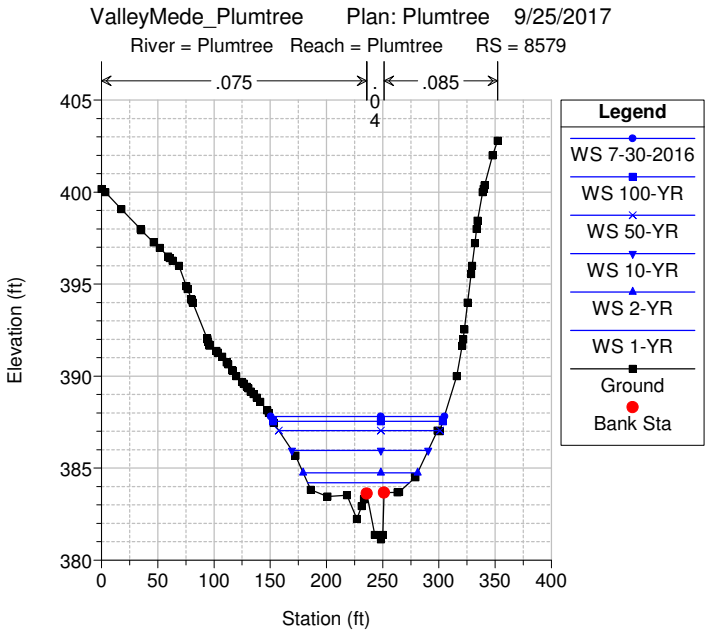

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 9398
.085
.04
.085
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

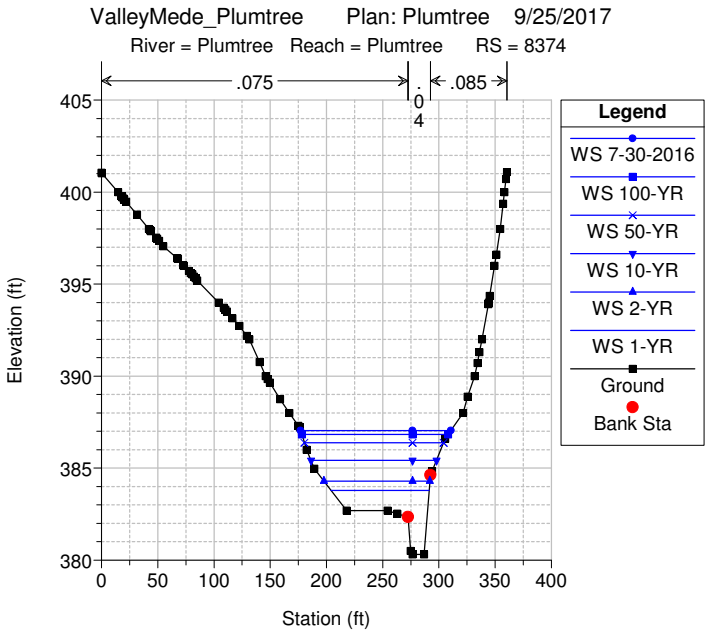

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 9301
.085
.04
.085
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

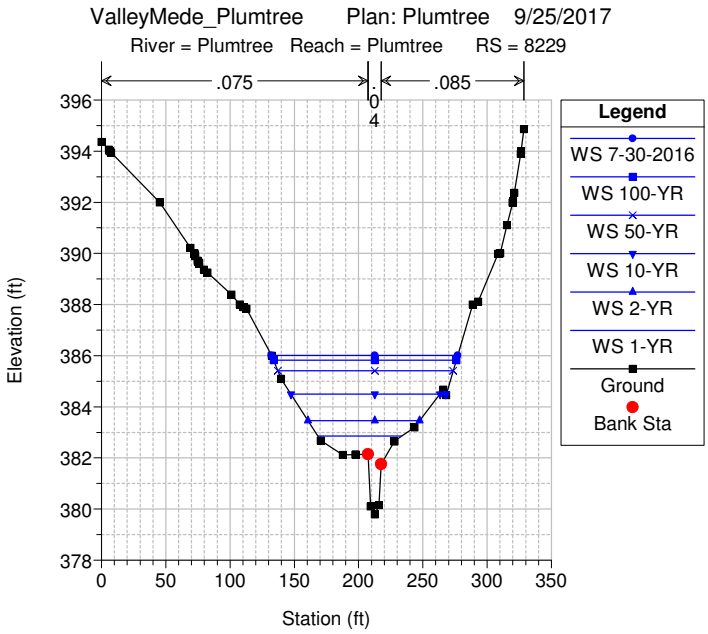

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 9196
.085
.04
.085
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

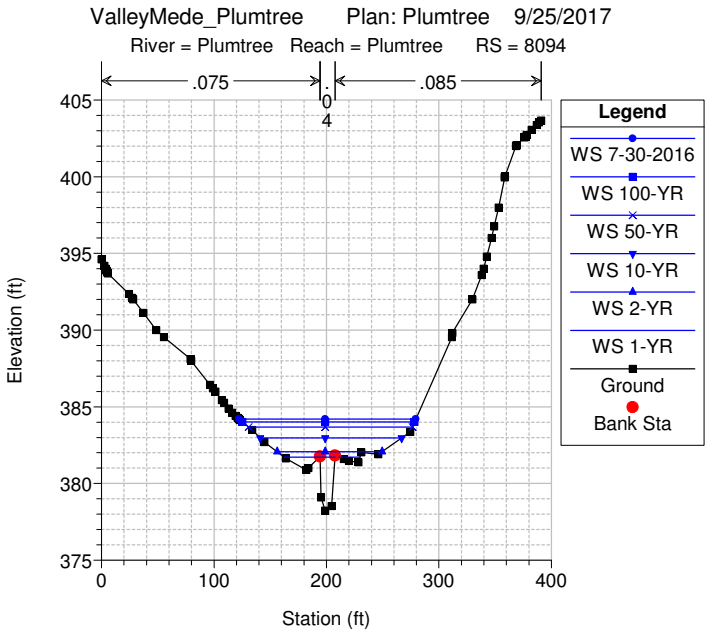

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 8987
.085
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

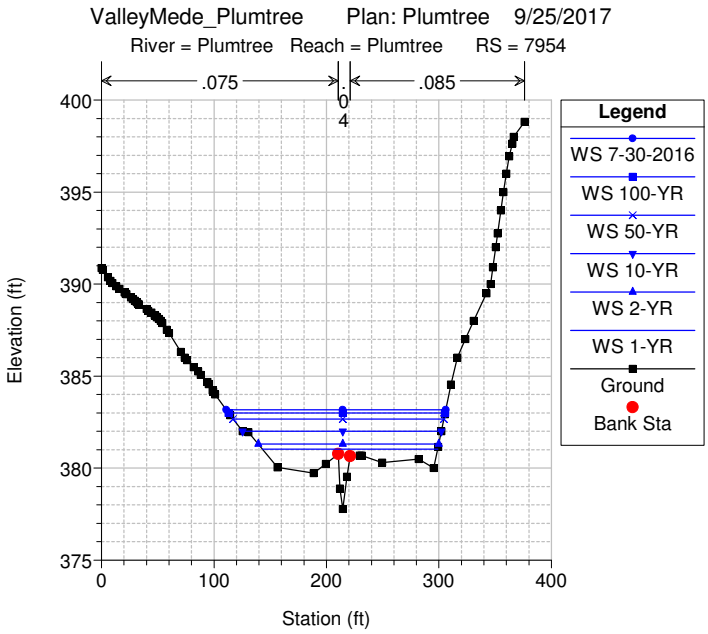

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 8753
.065
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

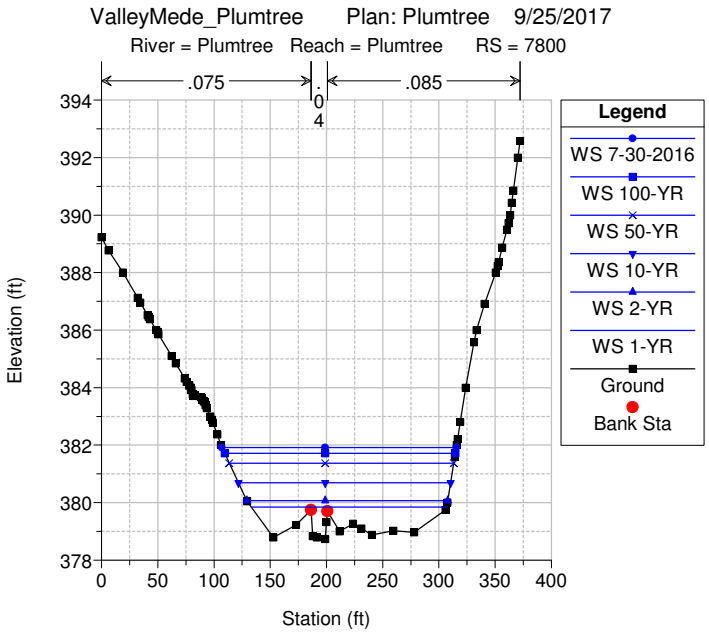

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 8579
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

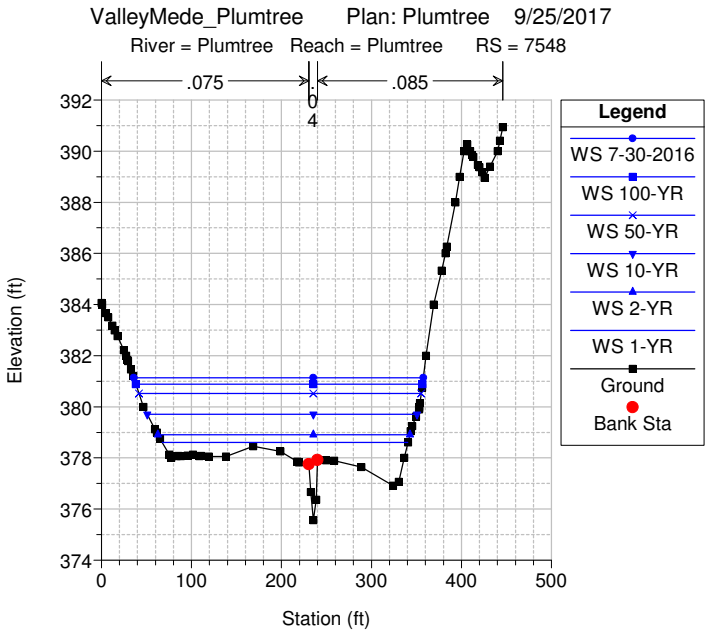

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 8374
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

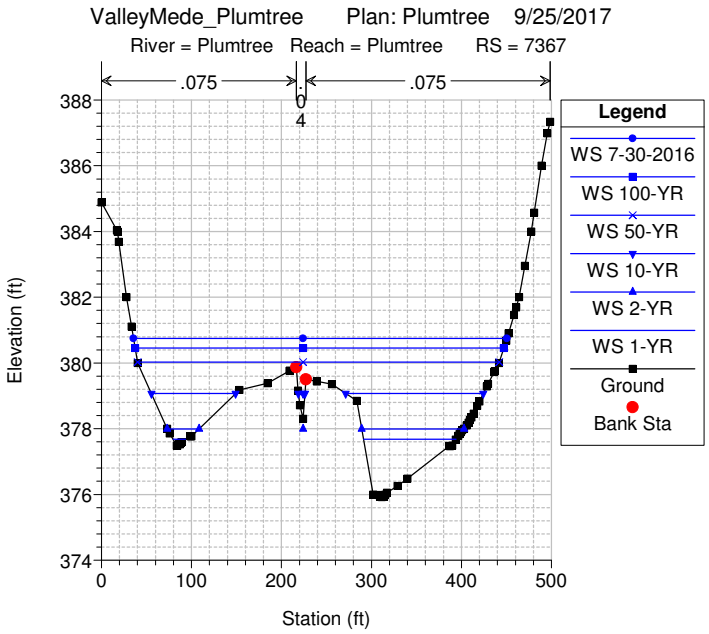

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 8229
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

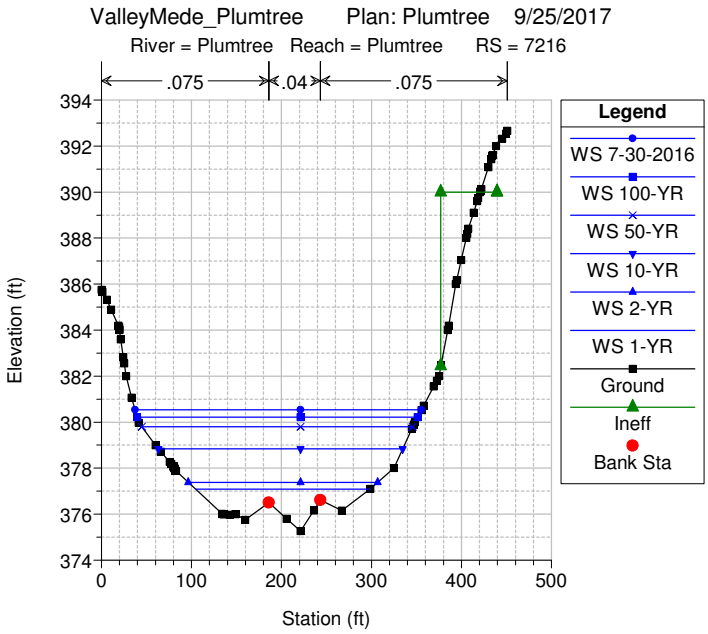

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 8094
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

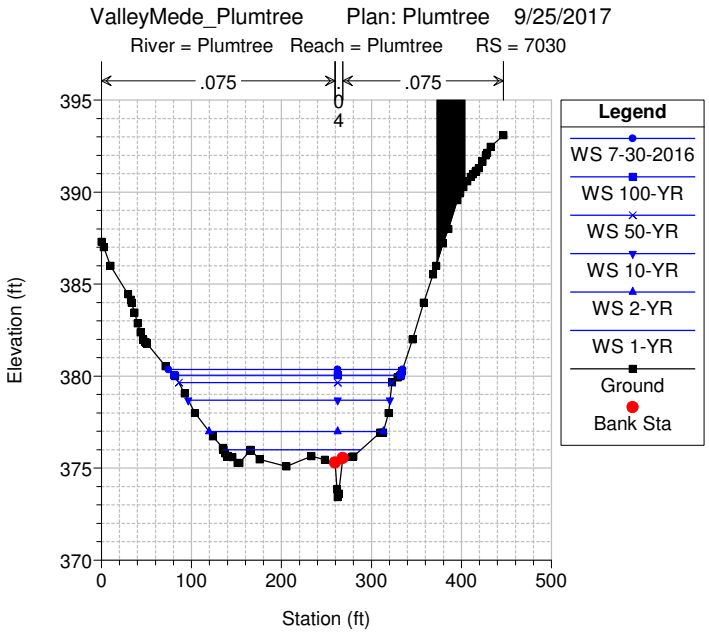

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 7954
.075
.04
.085
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

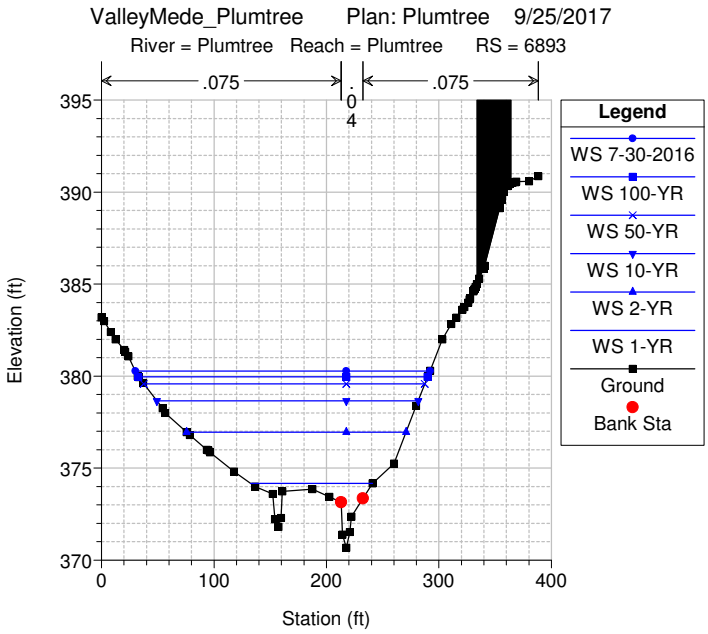

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 7800
.075
.04
.085
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

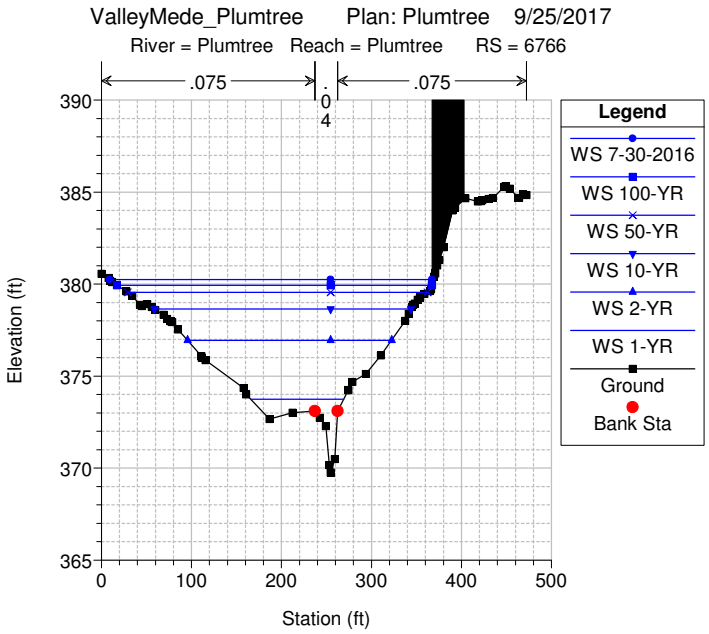

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 7548
.075
.04
.085
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

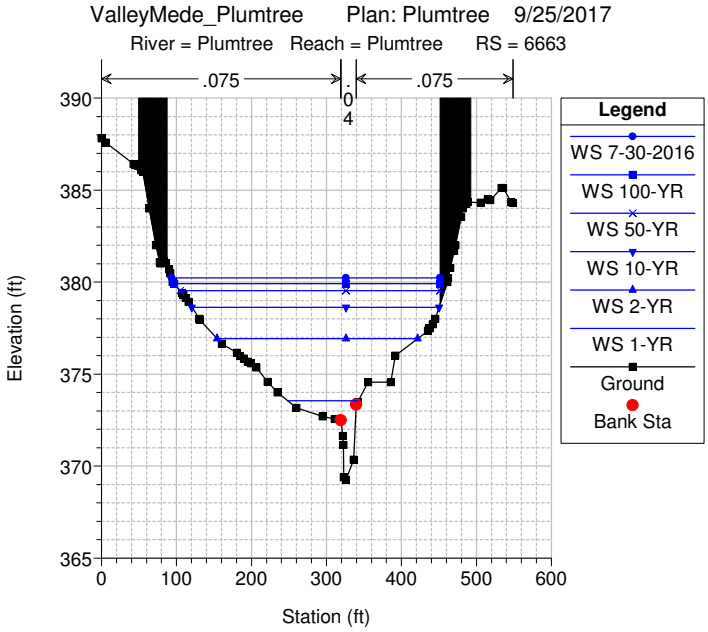

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 7367
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

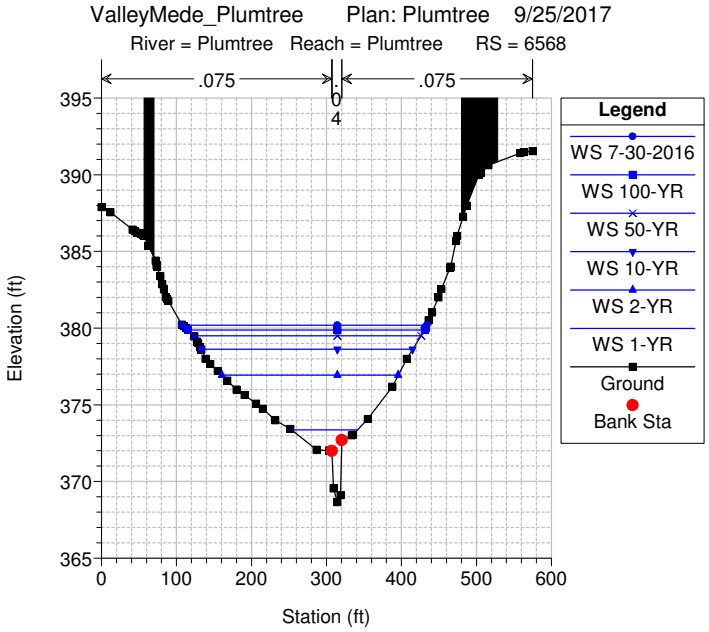

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 7216
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

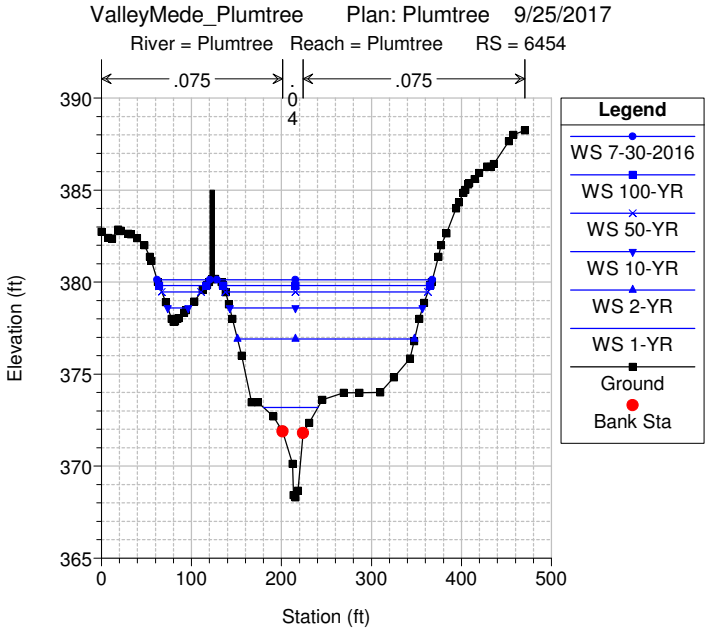

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 7030
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

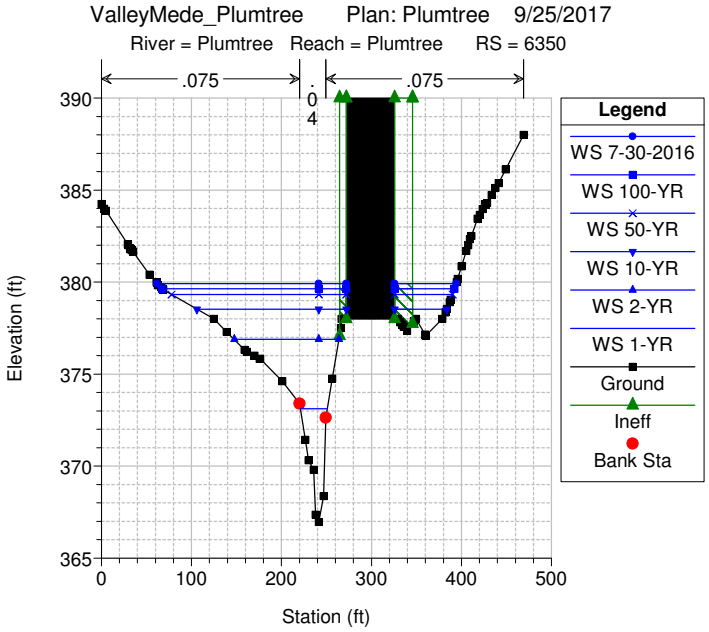

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6893
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

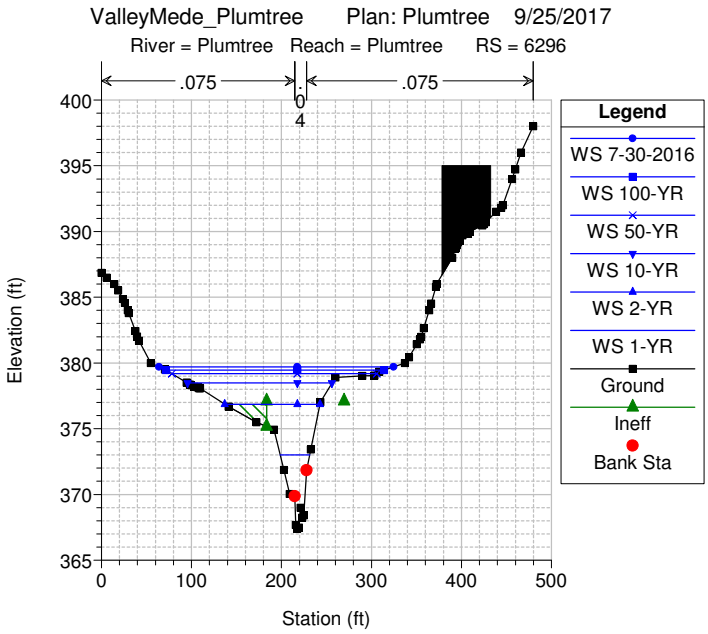

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6766
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

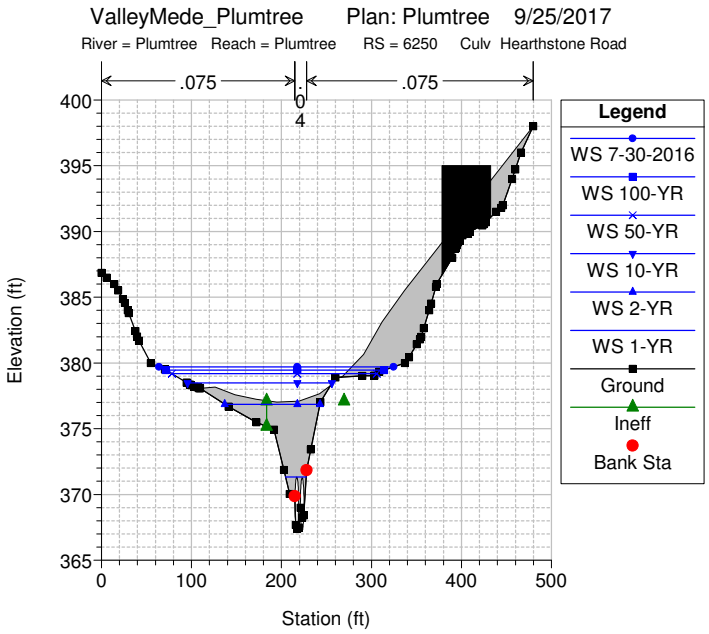

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6663
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

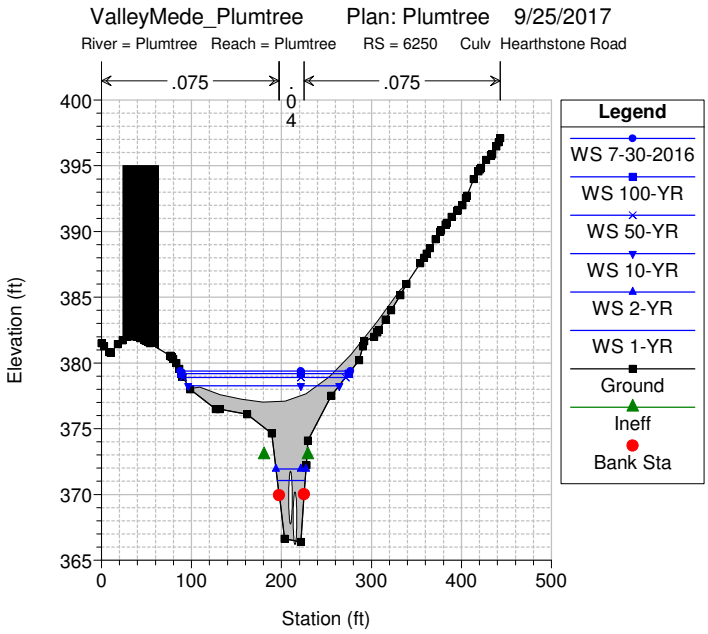

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6568
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

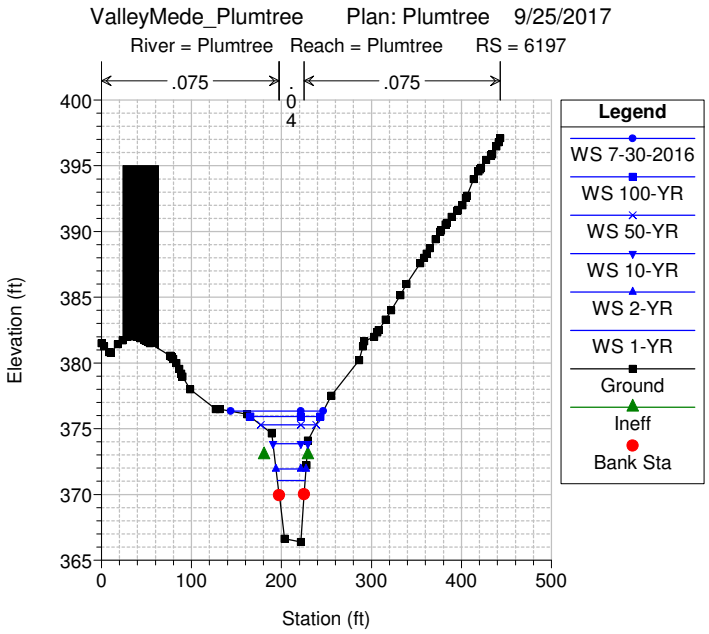

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6454
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

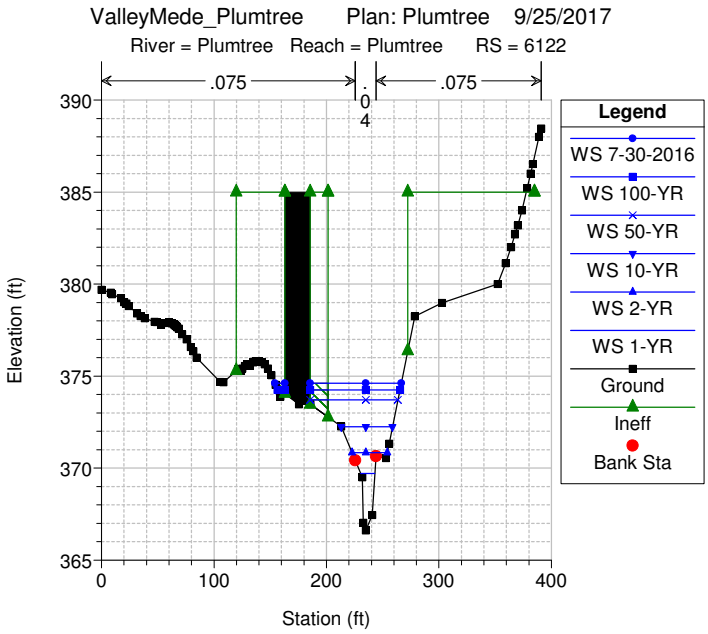

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6350
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

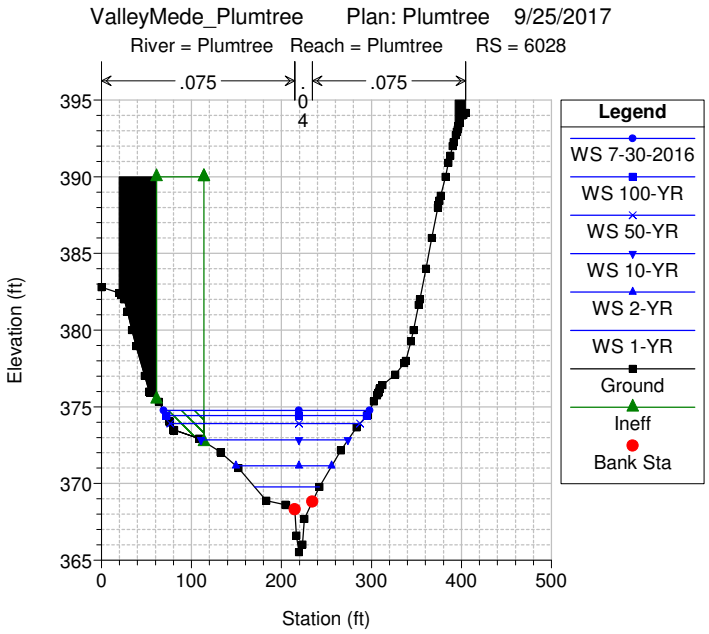

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6296
.075
.075
0
4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

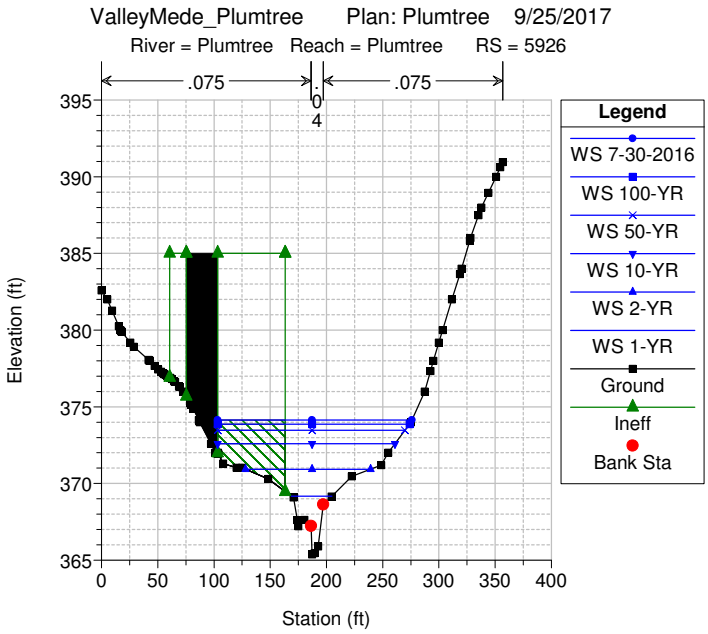

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
0
4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

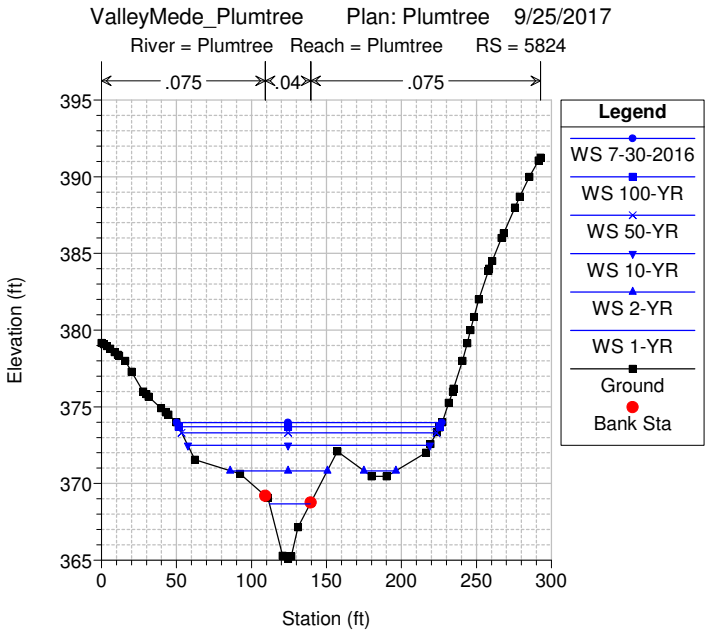

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
0
4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

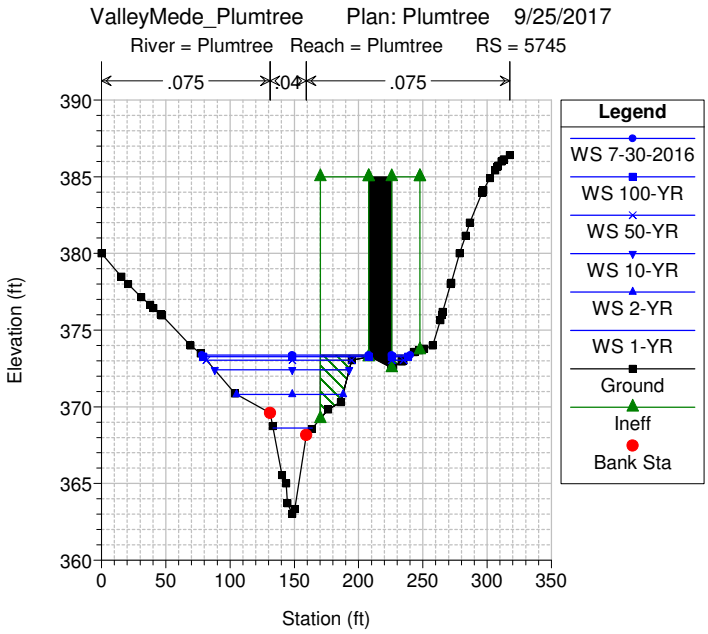

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6197
.075
.075
0
4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

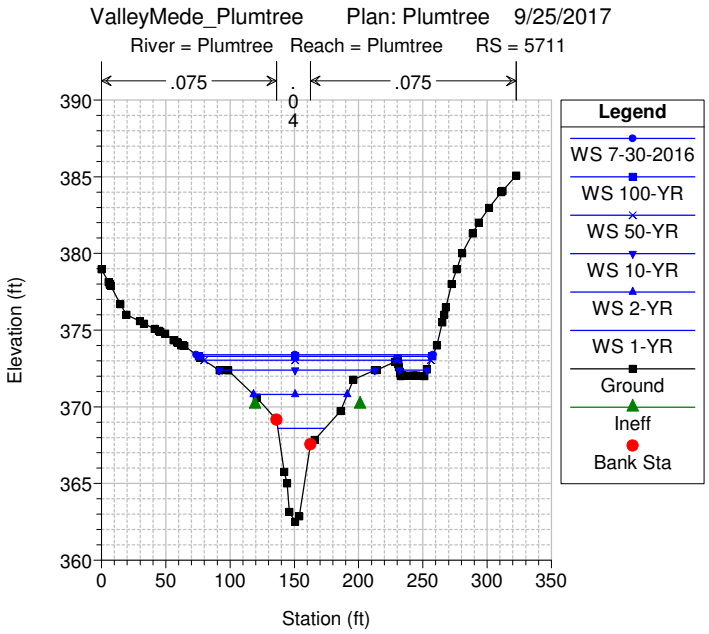

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6122
.075
.075
0
4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

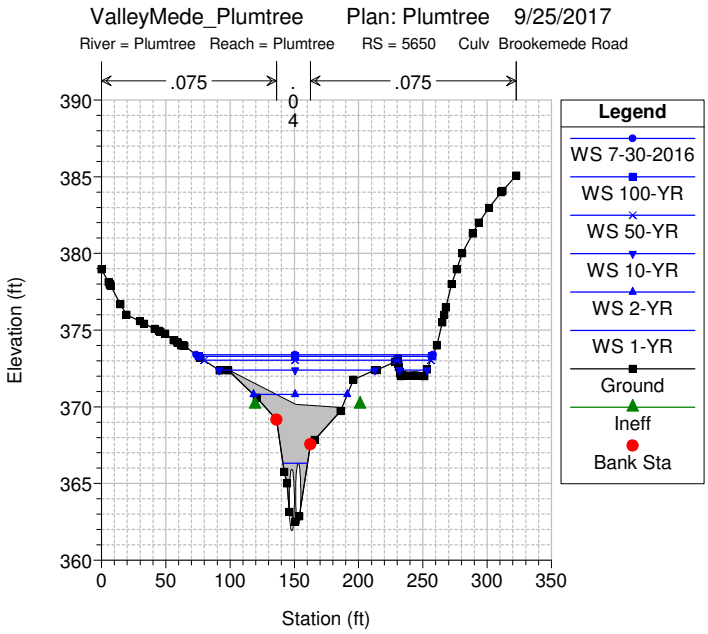

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 6028
.075
.075
0
4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

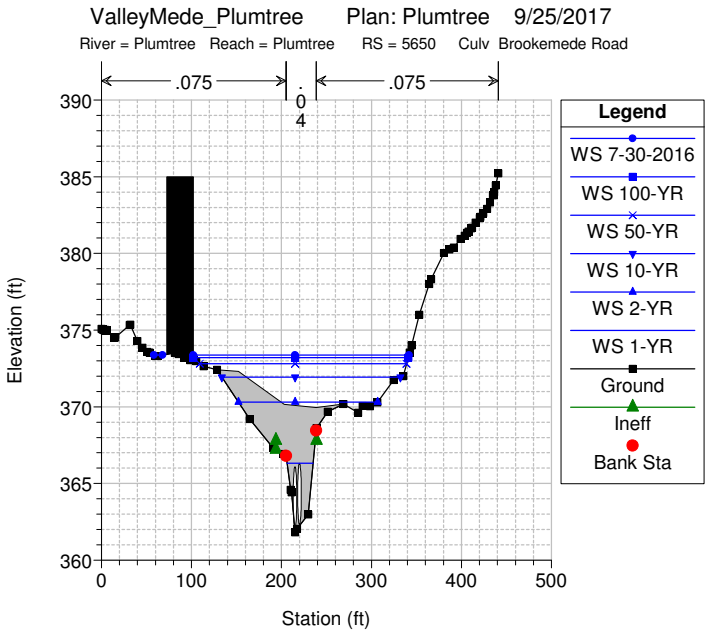

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5926
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

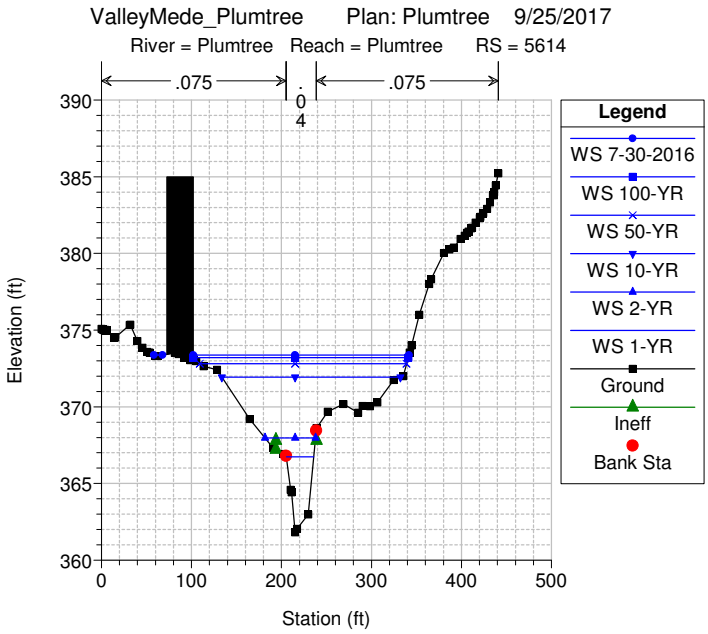

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5824
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

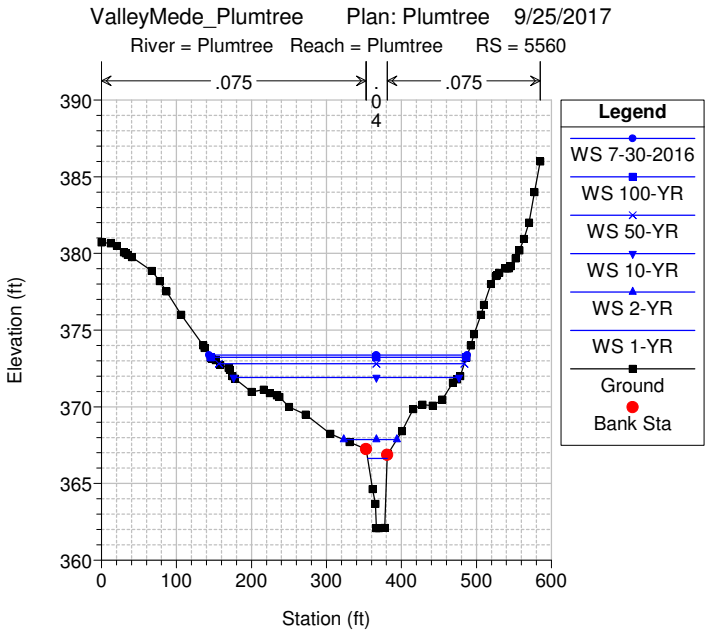

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5745
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

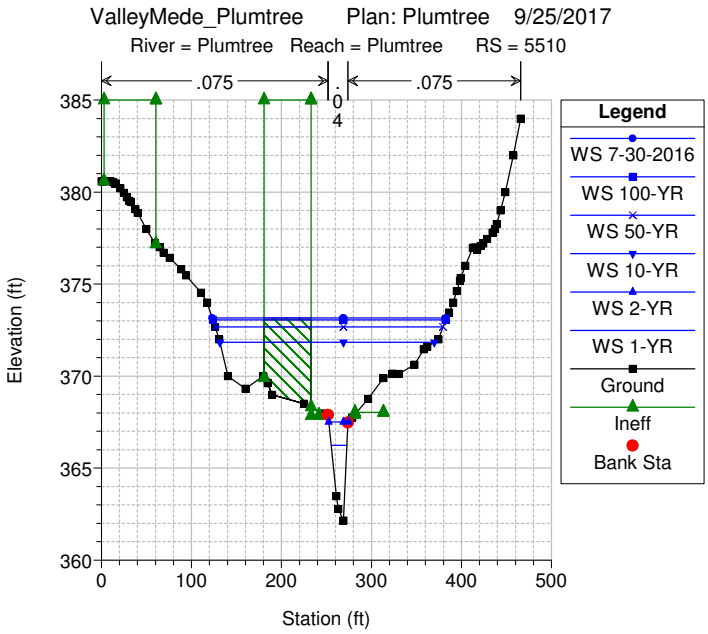

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5711
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

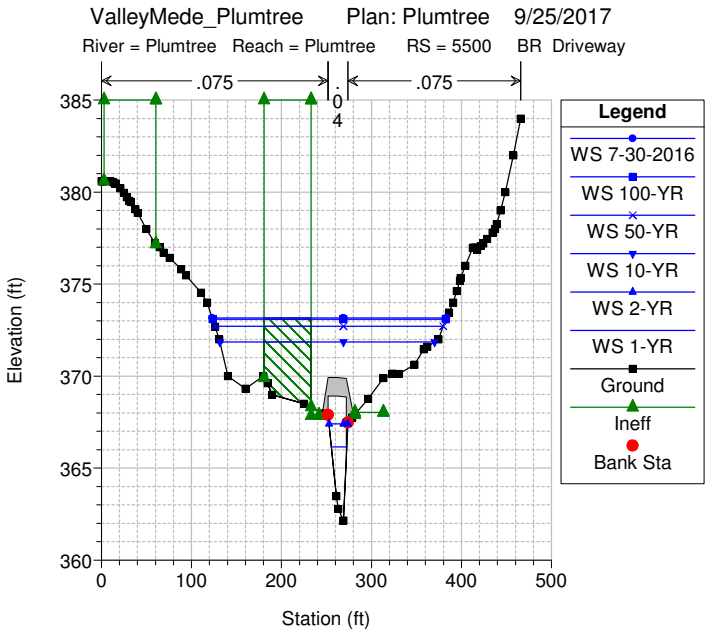

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

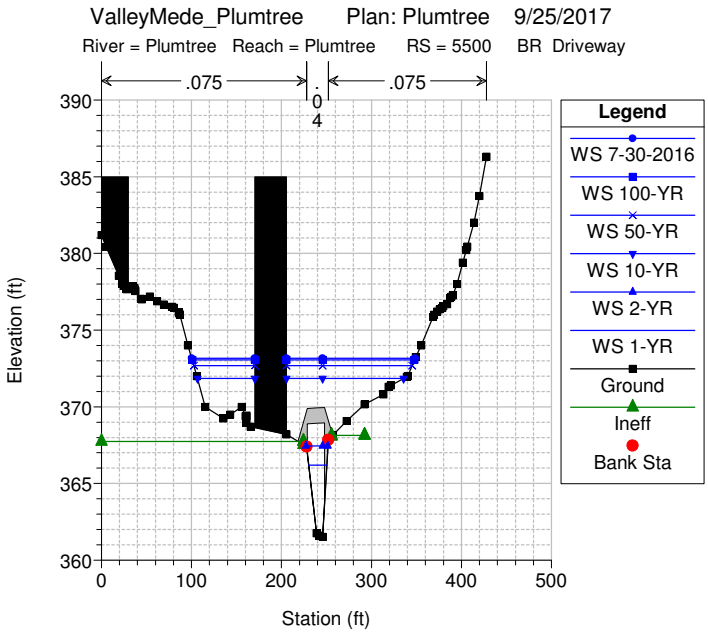

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

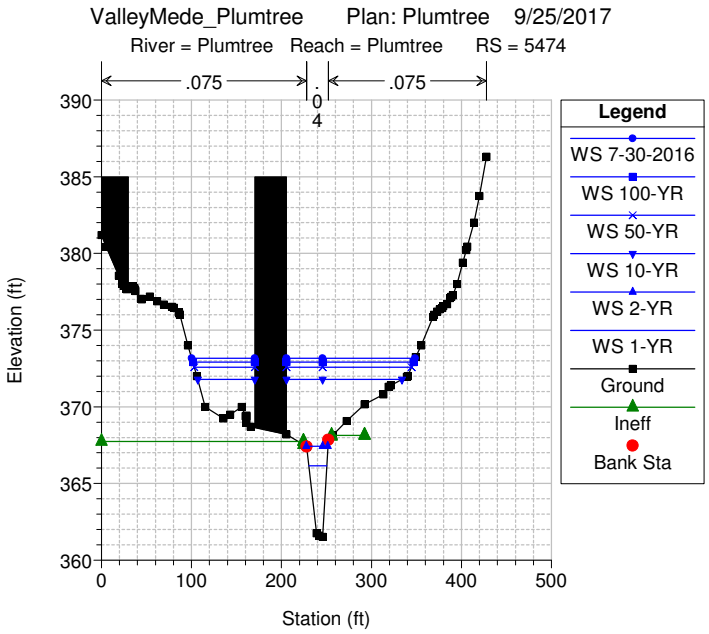

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5614
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

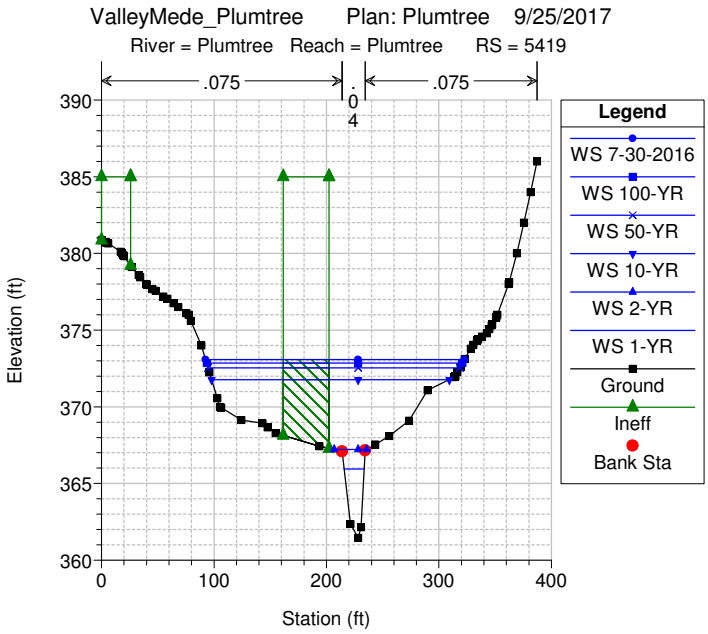

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5560
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

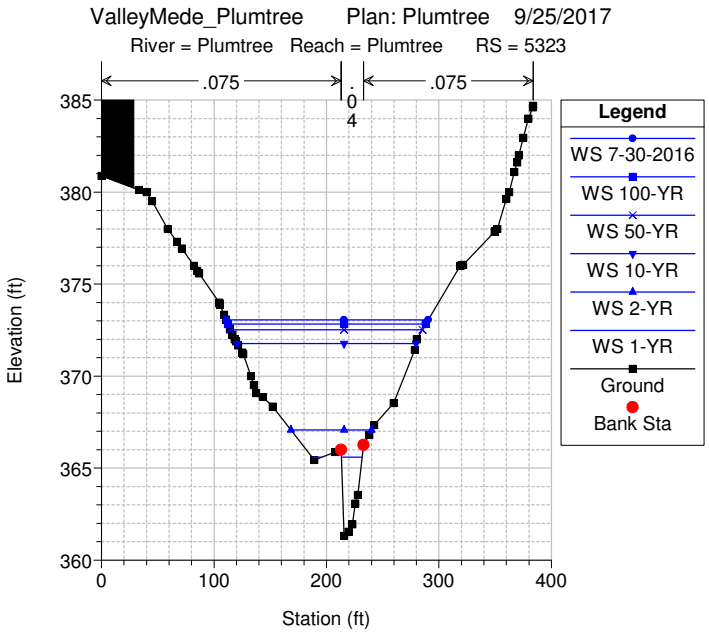

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5510
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

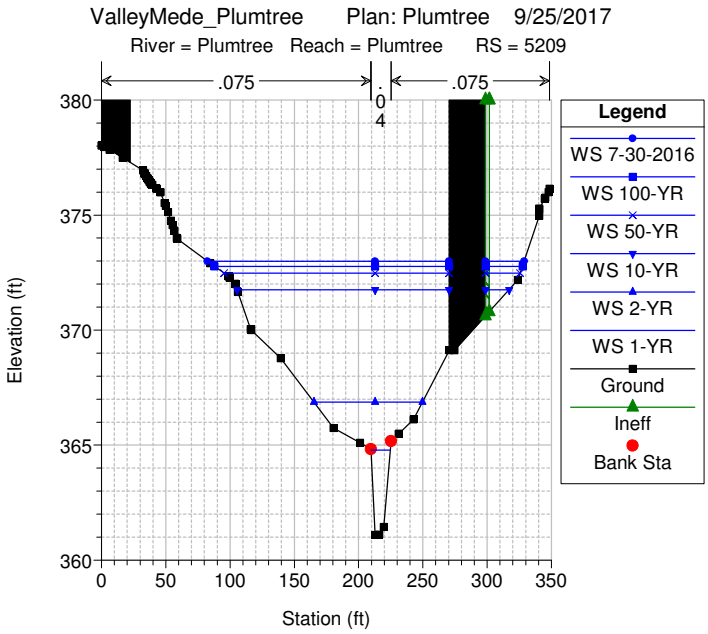

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

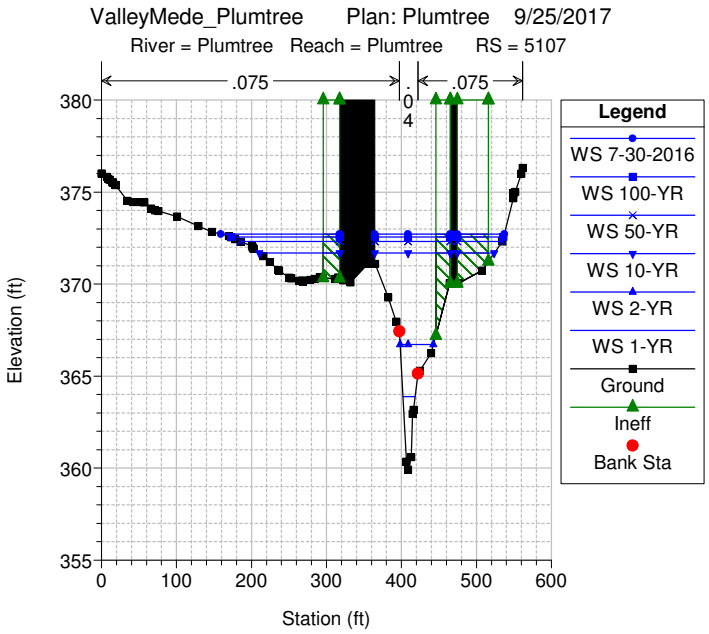

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

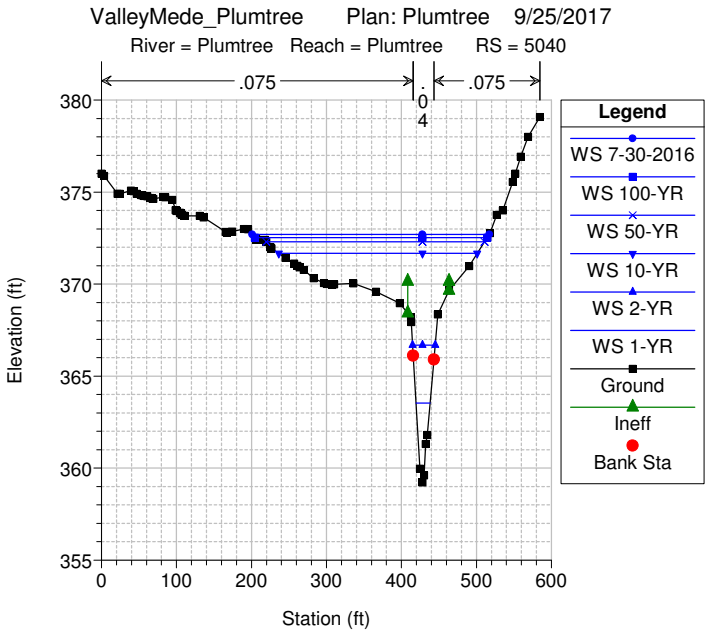

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5474
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

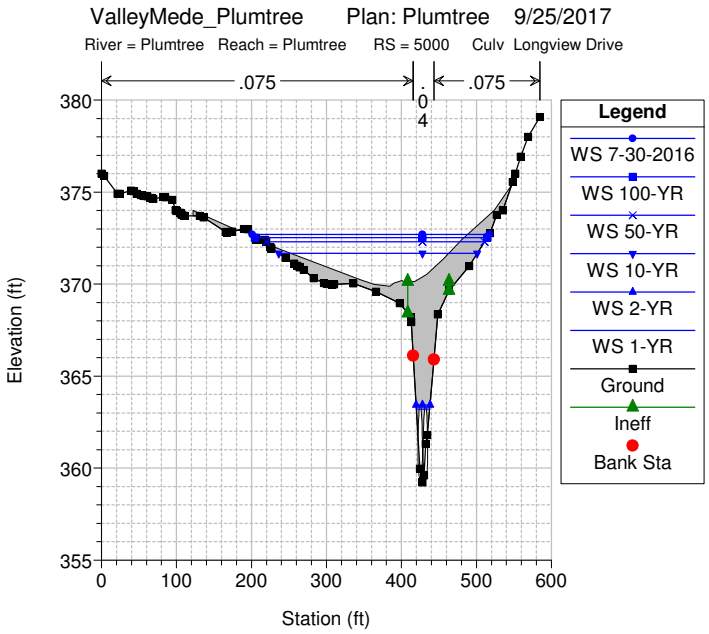

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5419
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

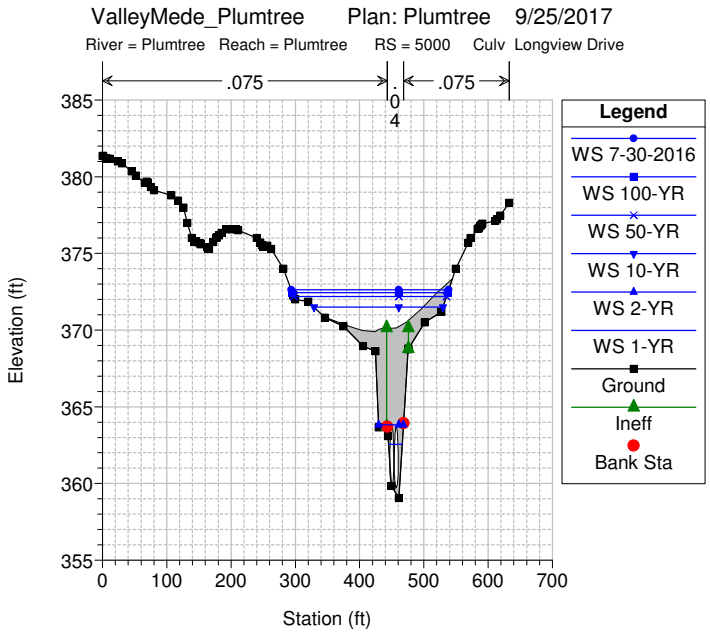

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5323
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

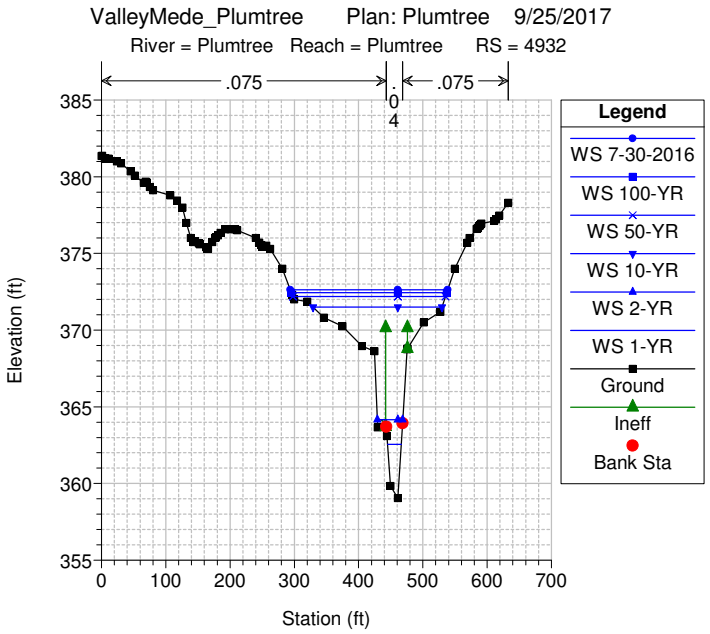

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5209
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

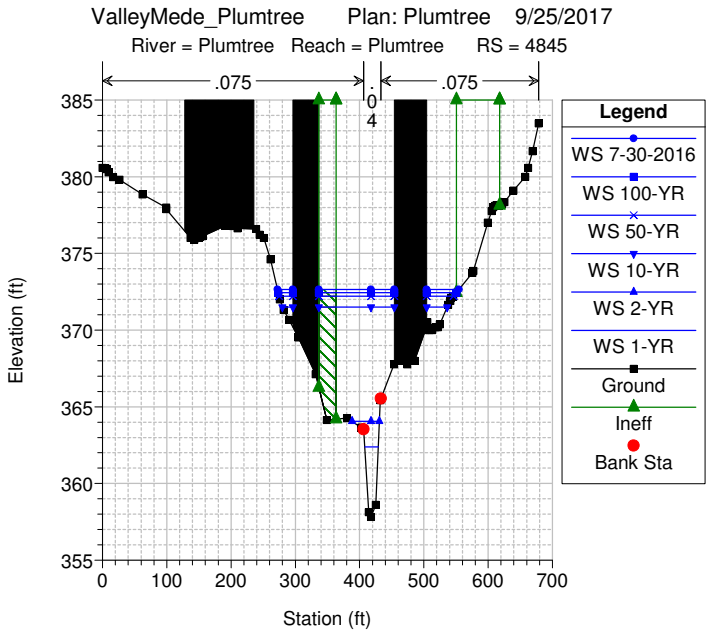

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5107
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

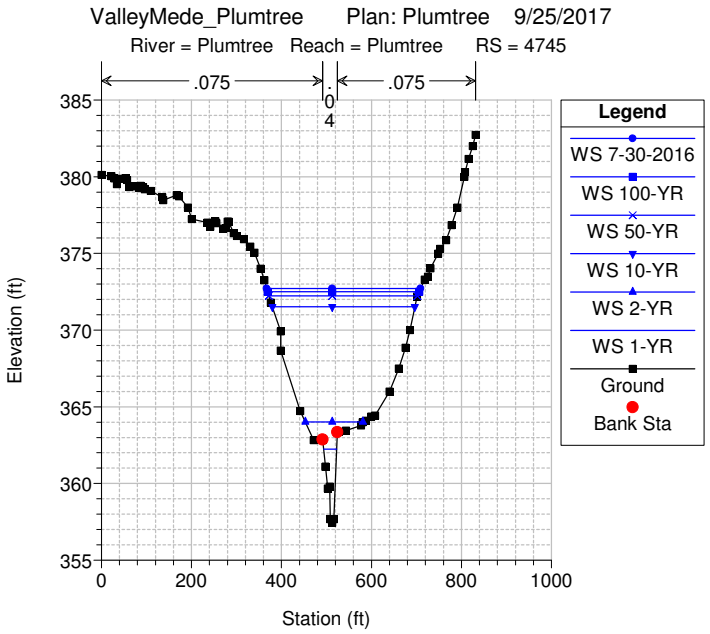

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5040
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

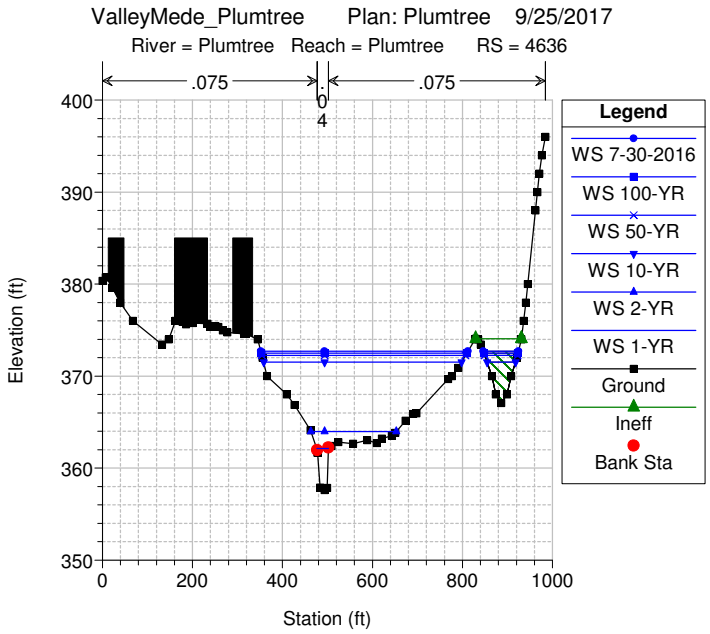

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

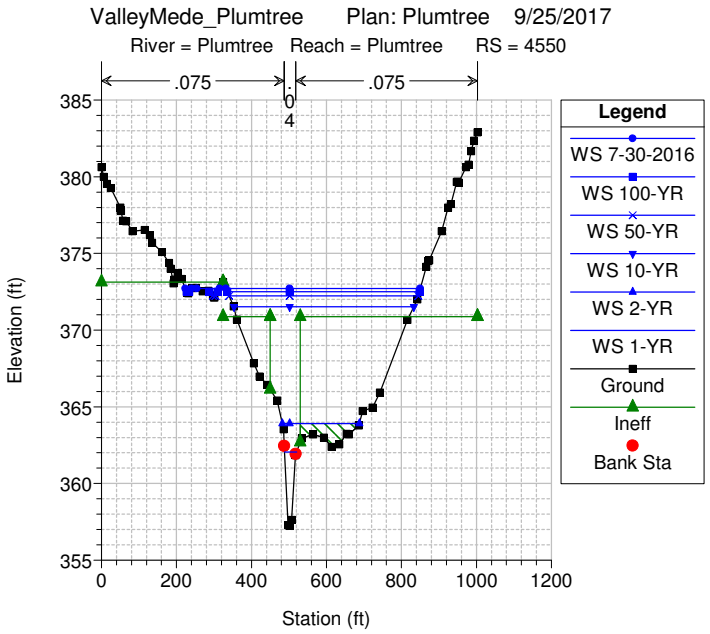

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

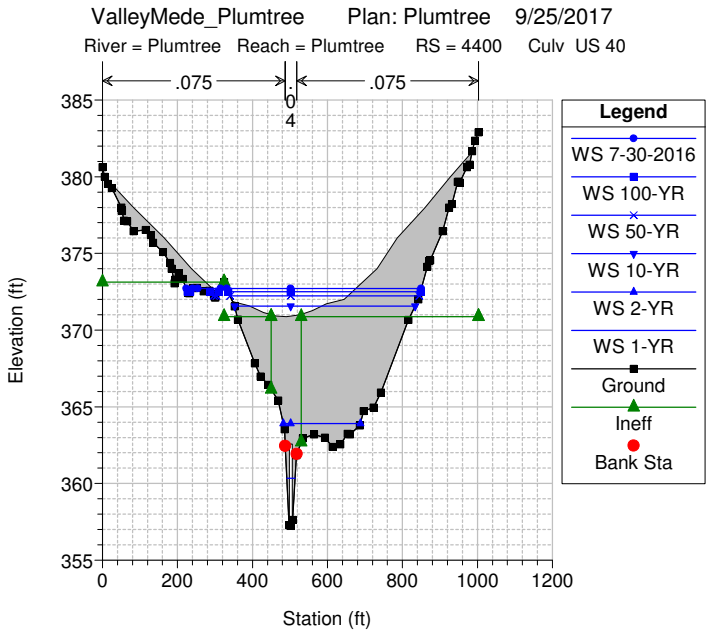

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4932
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

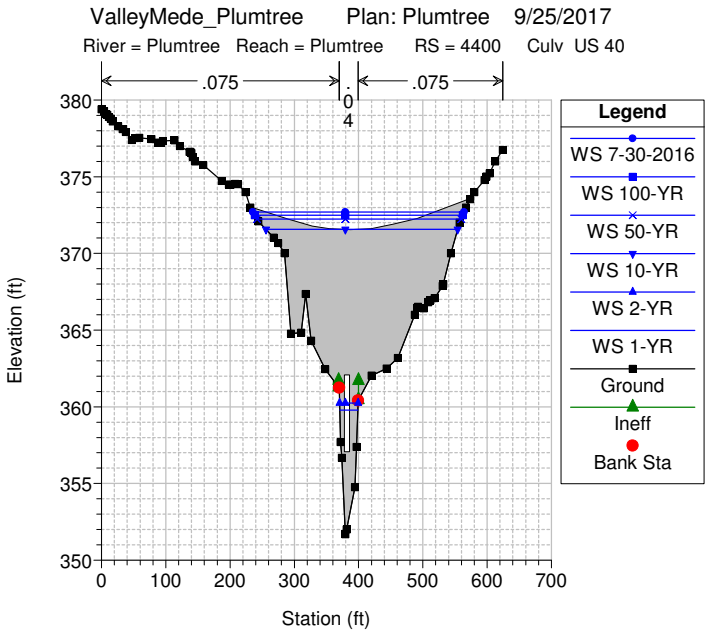

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4845
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

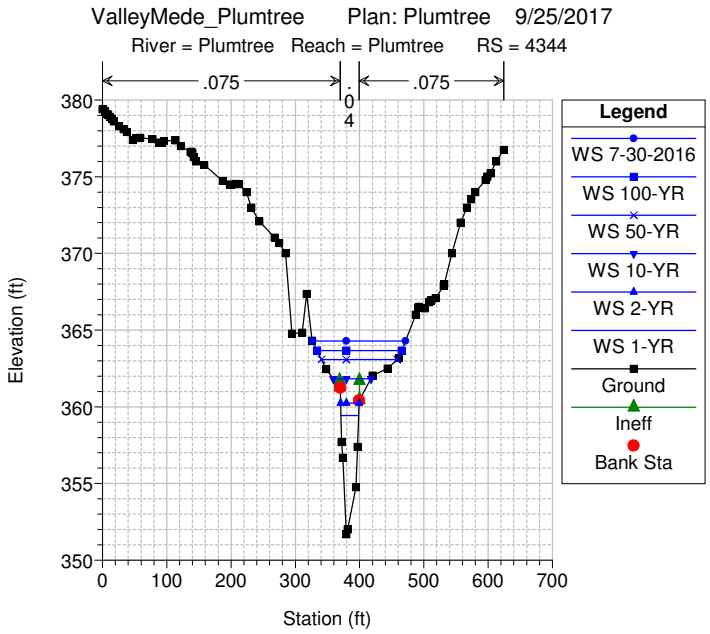

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4745
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

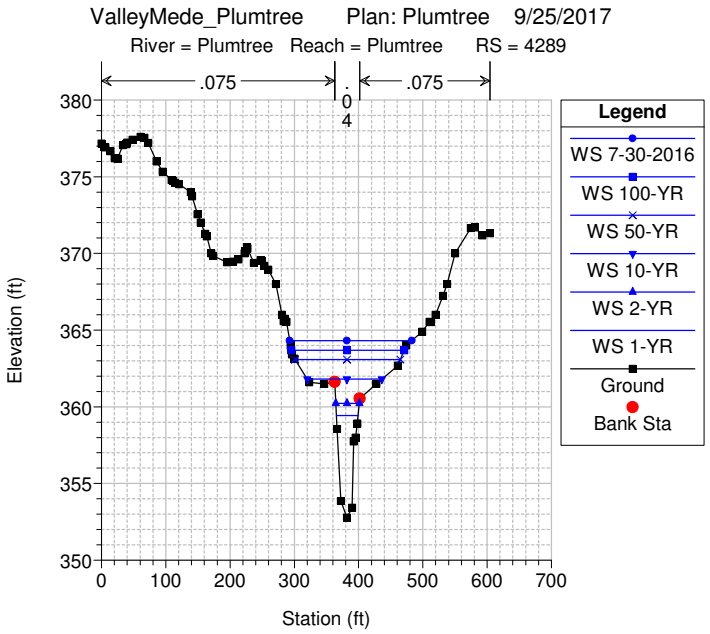

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4636
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

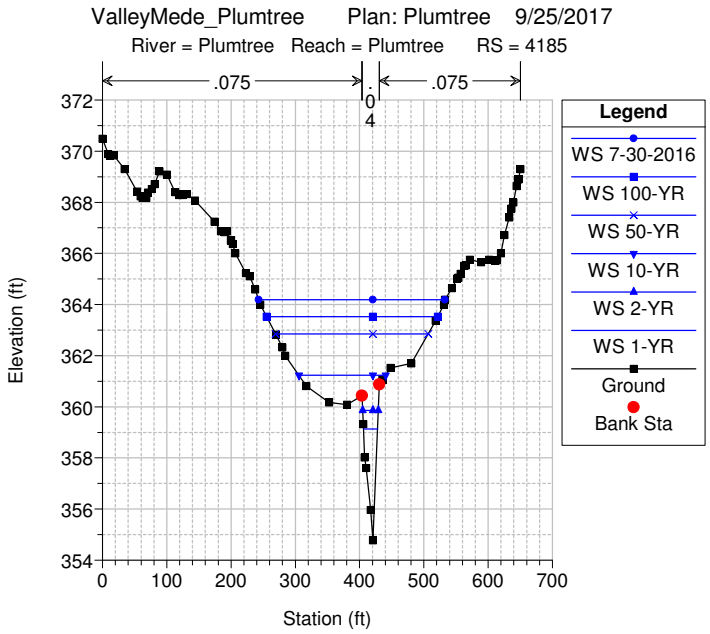

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4550
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

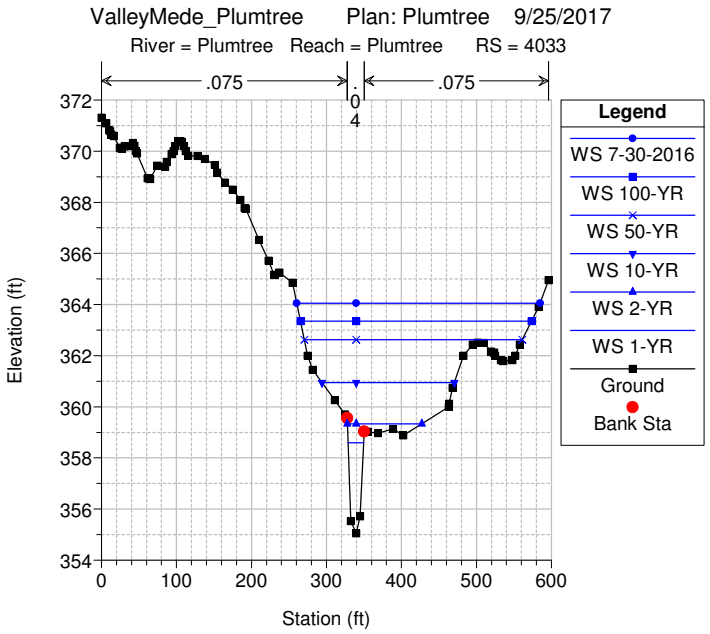

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

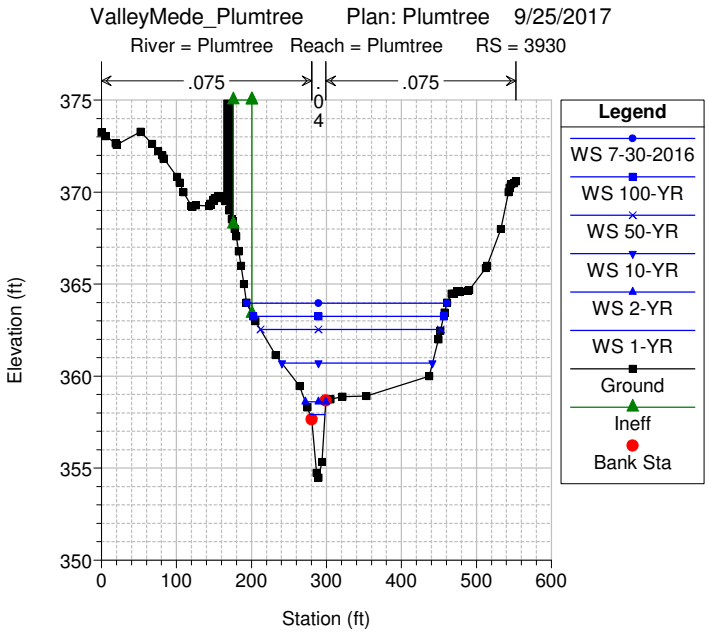

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

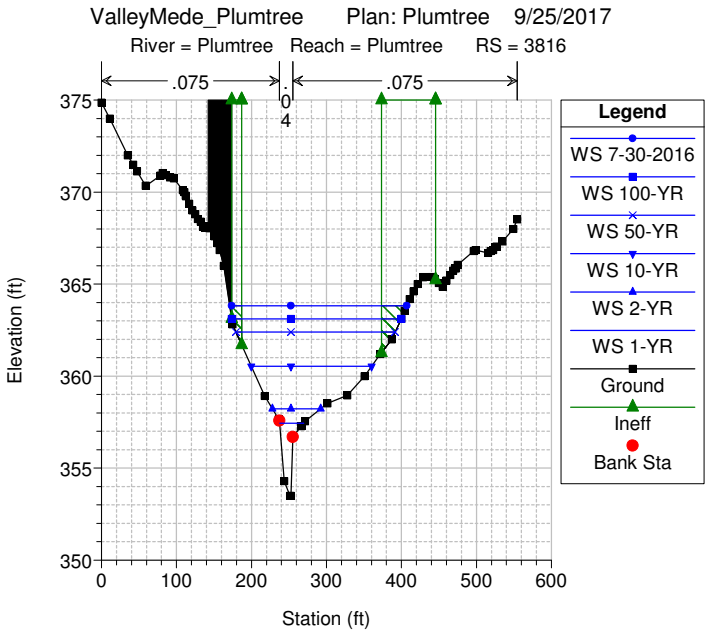

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4344
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

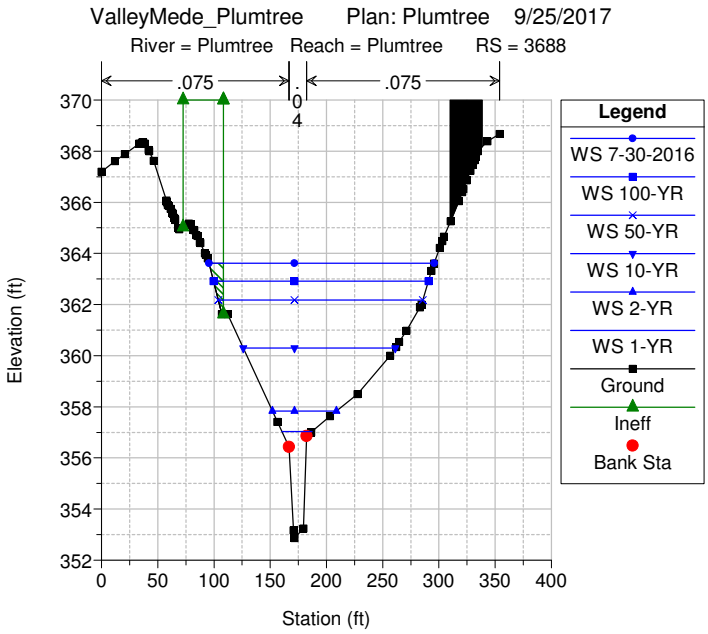

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4289
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

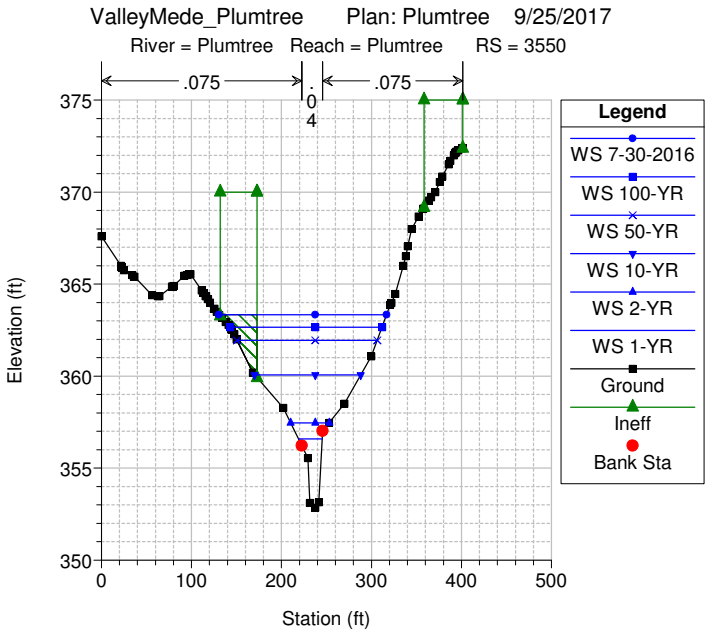

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4185
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

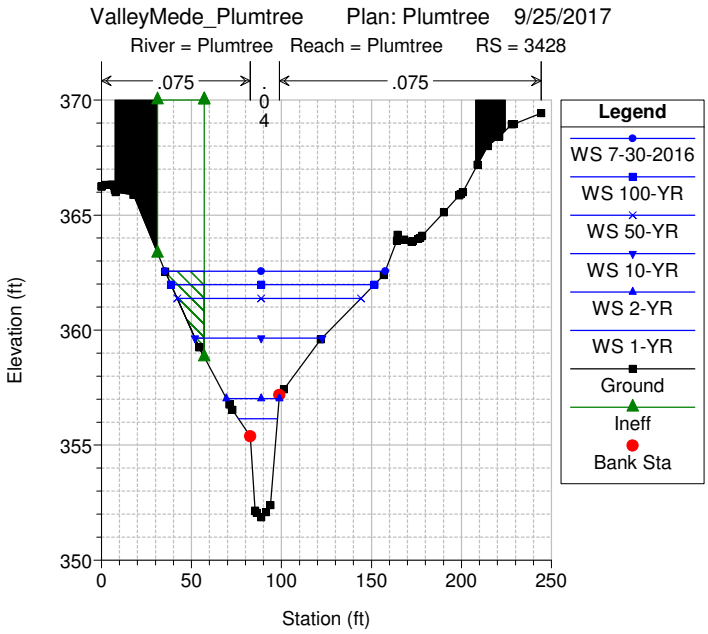

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 4033
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

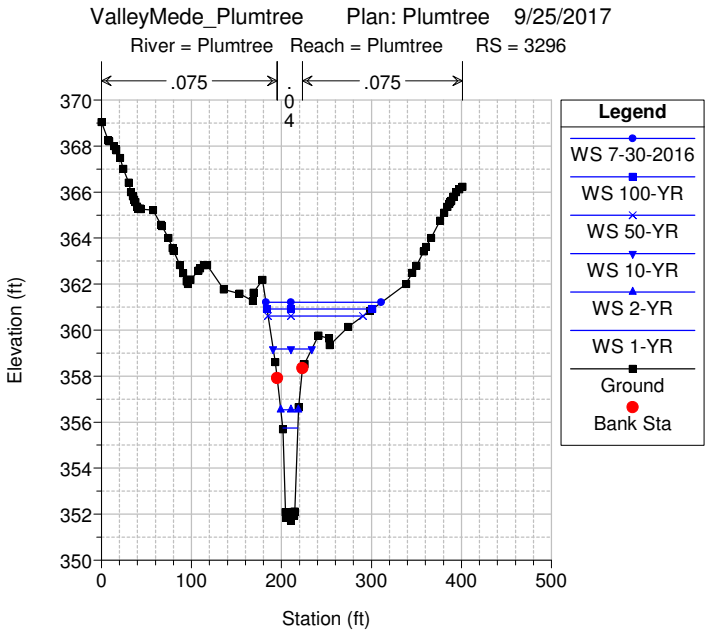

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 3930
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

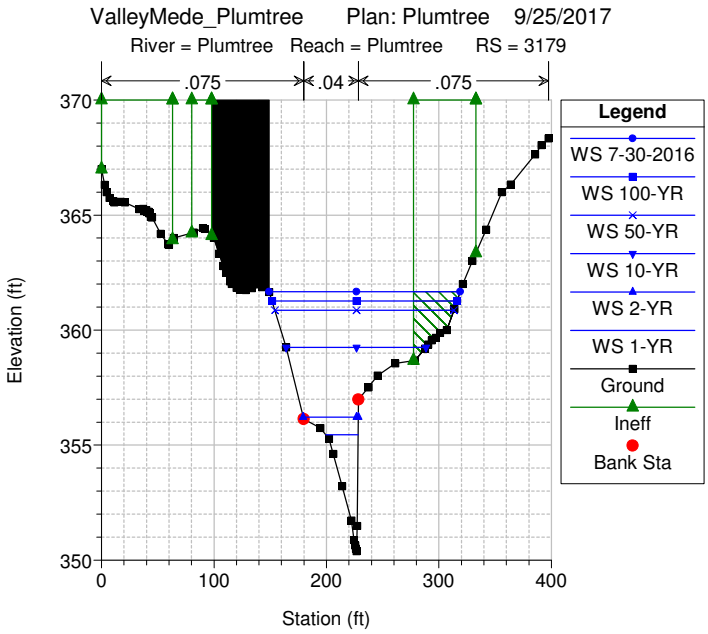

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 3816
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

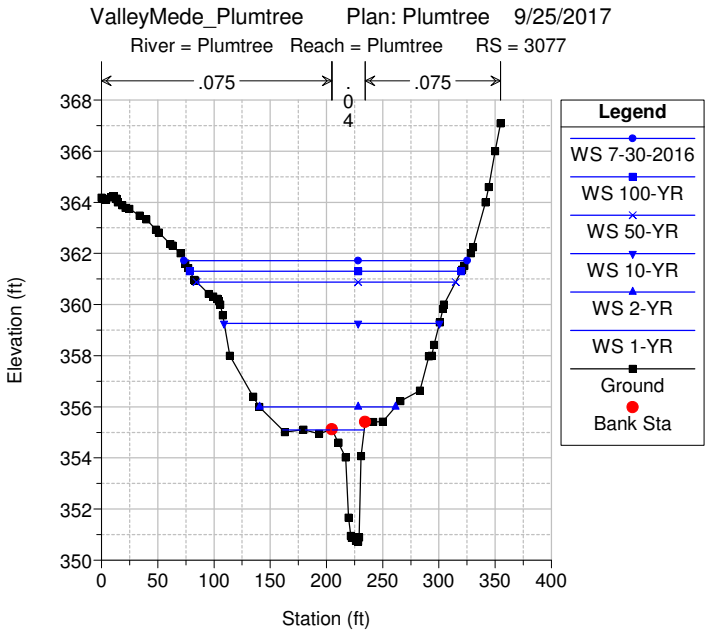

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 3688
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

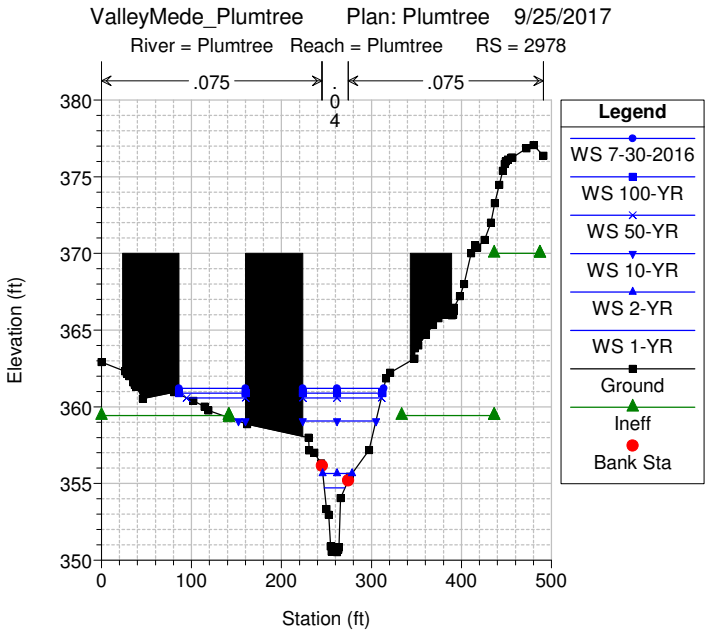

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 3550
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

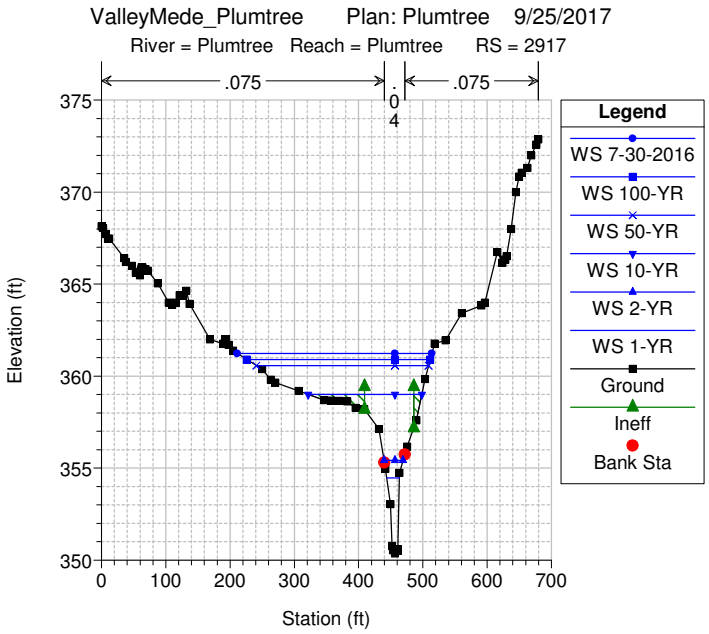

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 3428
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

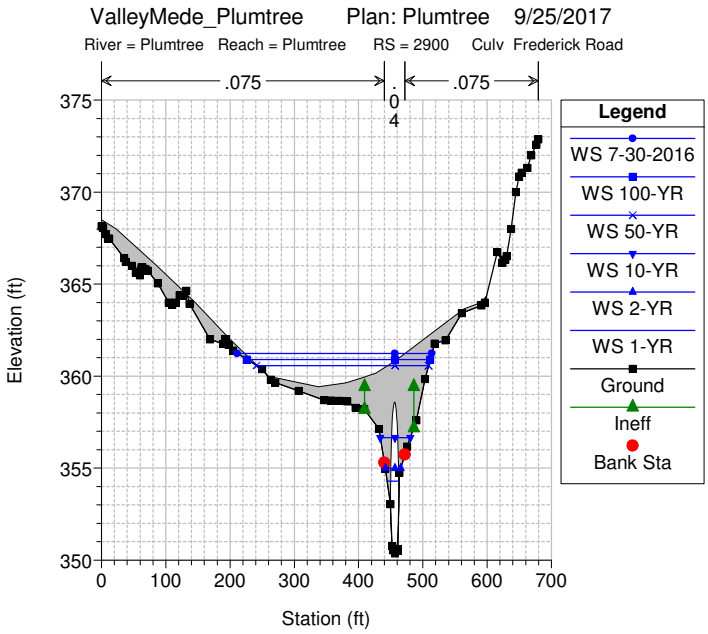

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 3296
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

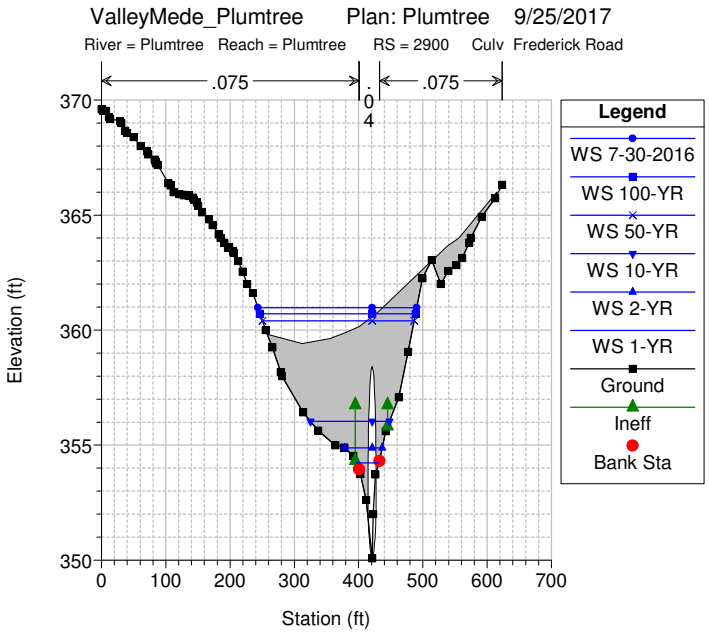

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 3179
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

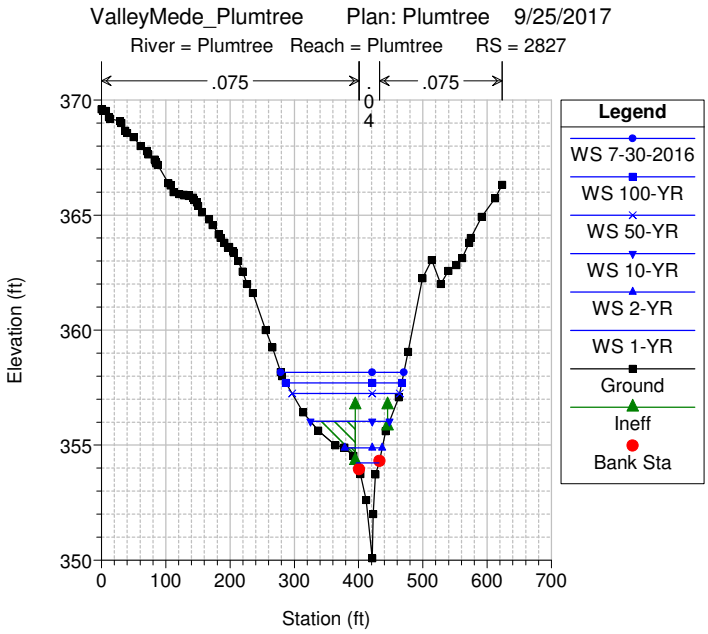

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 3077
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

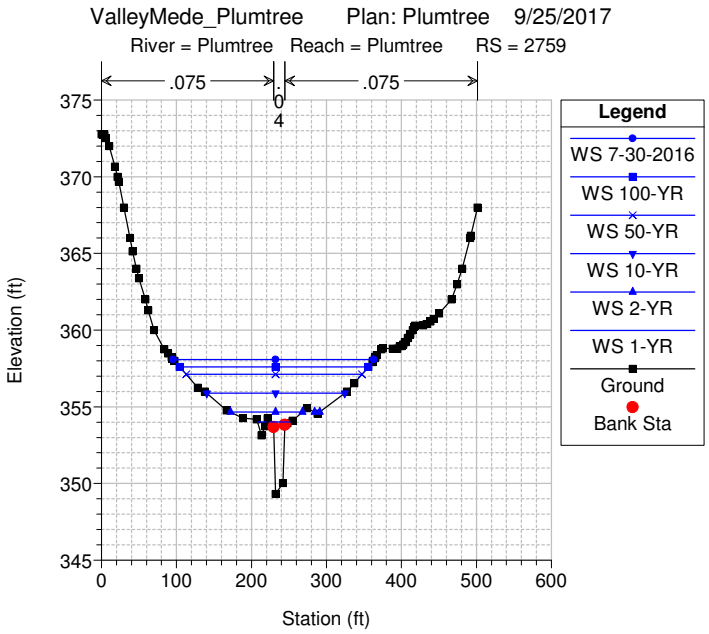

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 2978
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

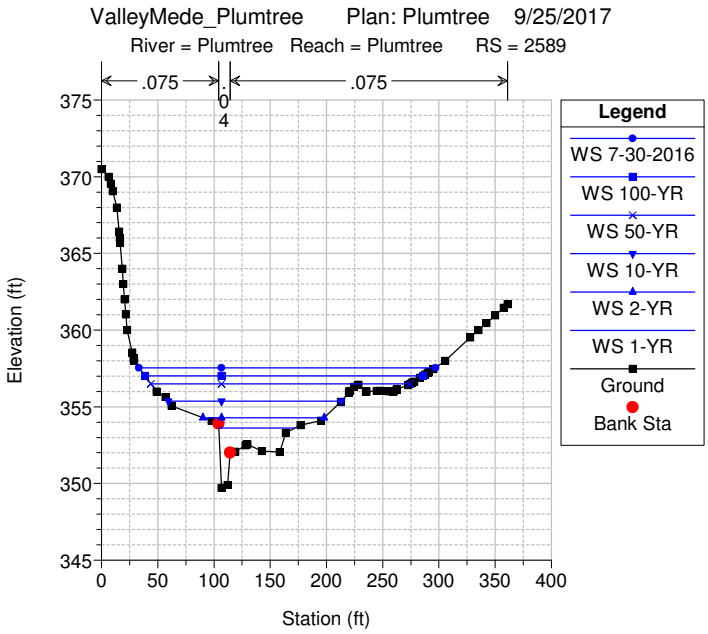

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 2917
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

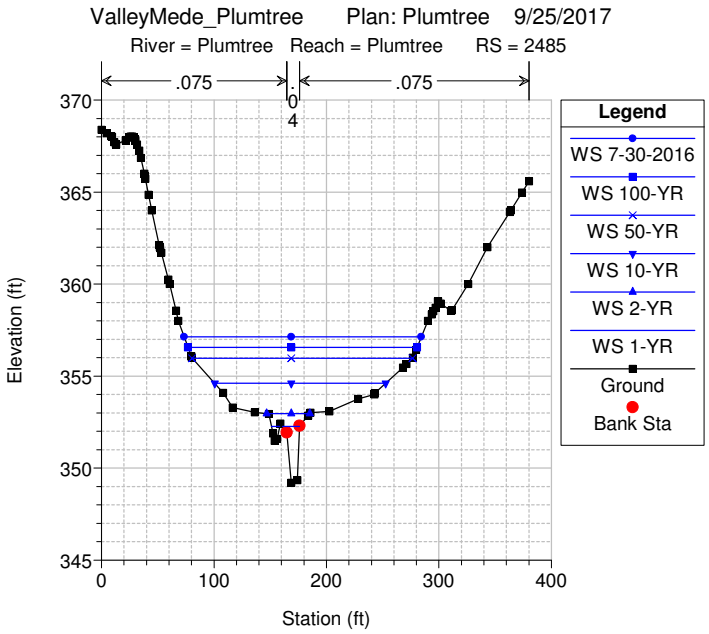

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

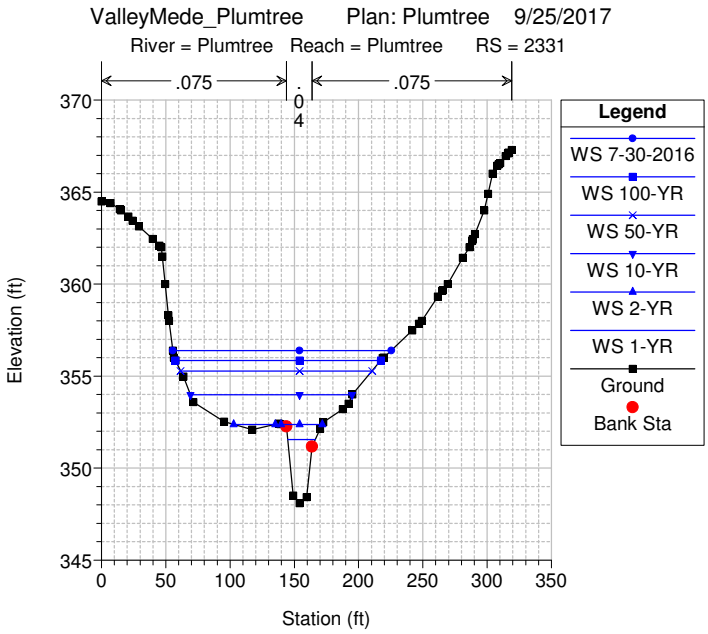

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

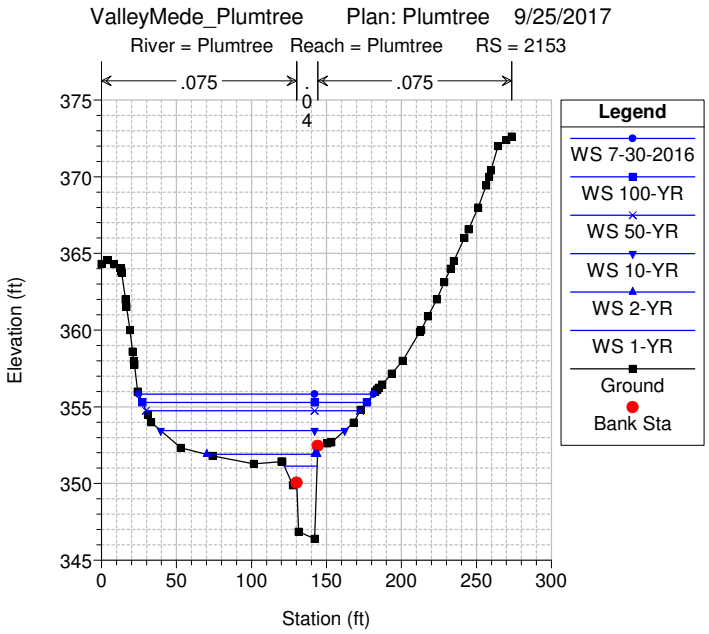

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 2827
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

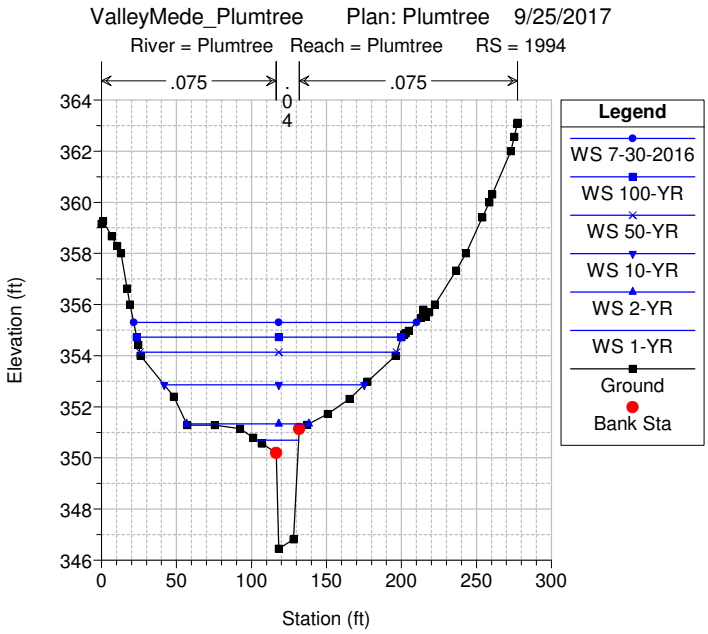

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 2759
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

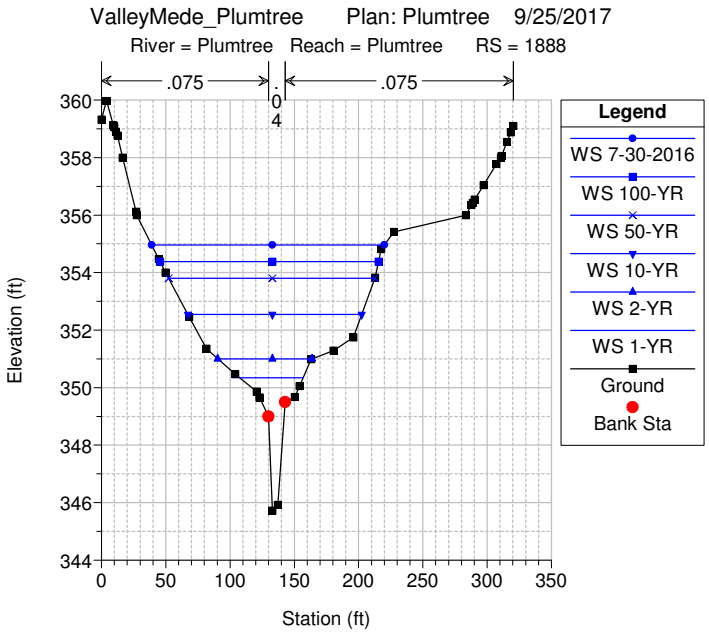

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 2589
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

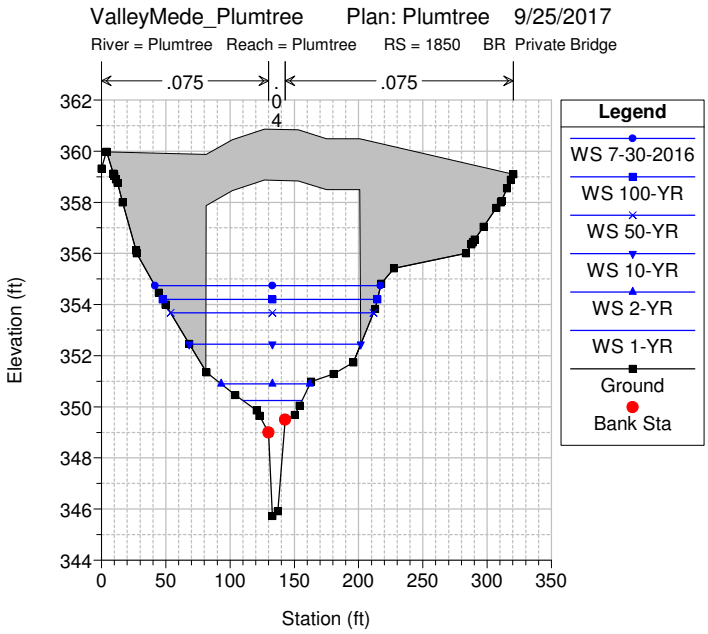

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 2485
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

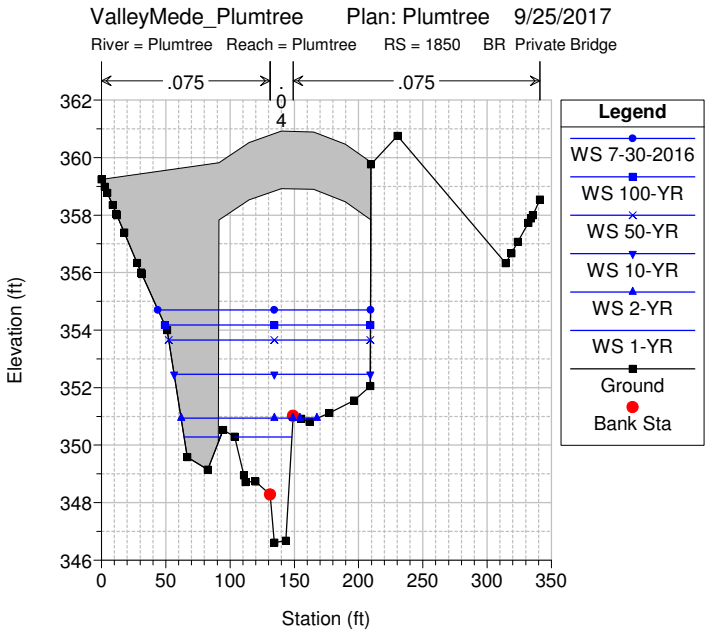

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 2331
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

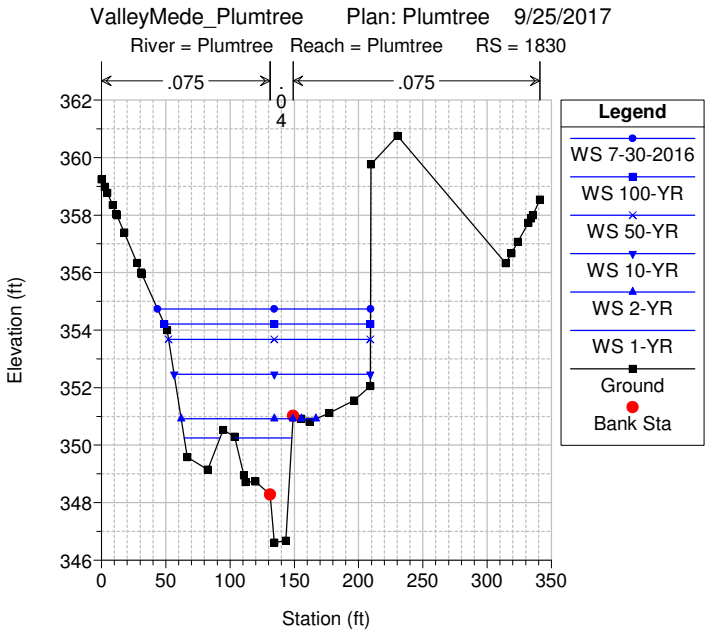

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 2153
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

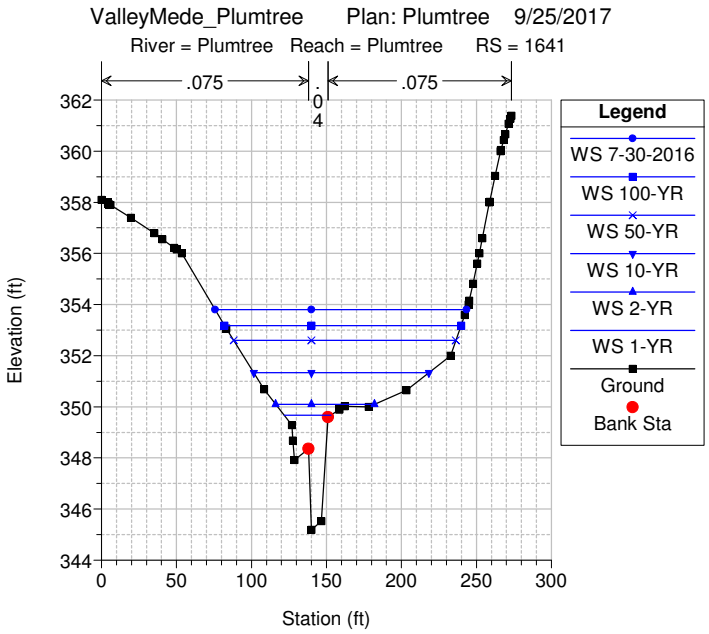

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 1994
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

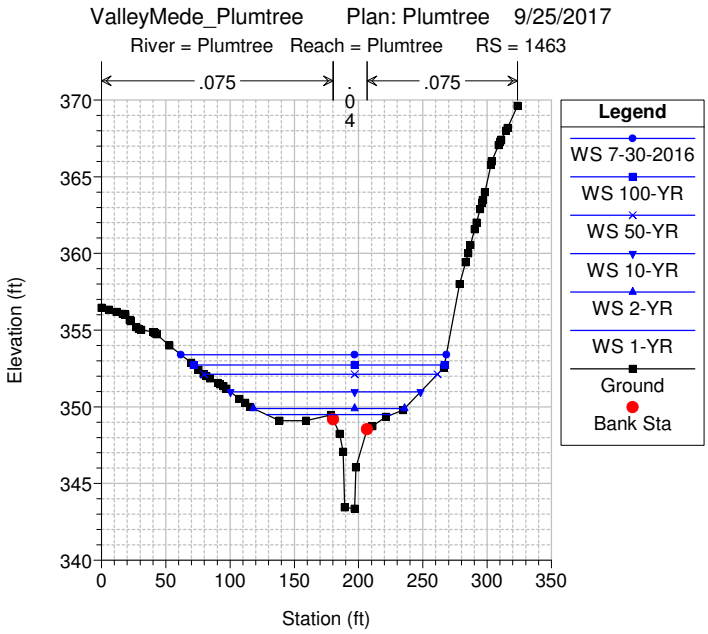

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 1888
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

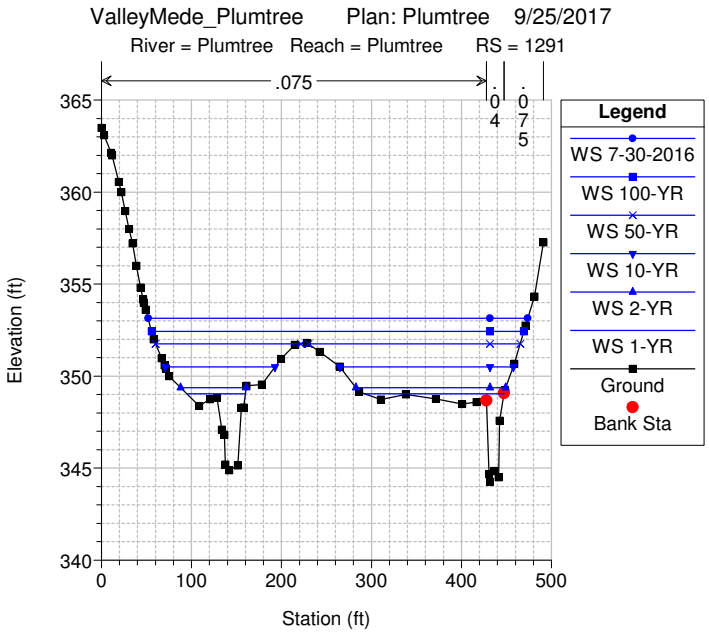

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

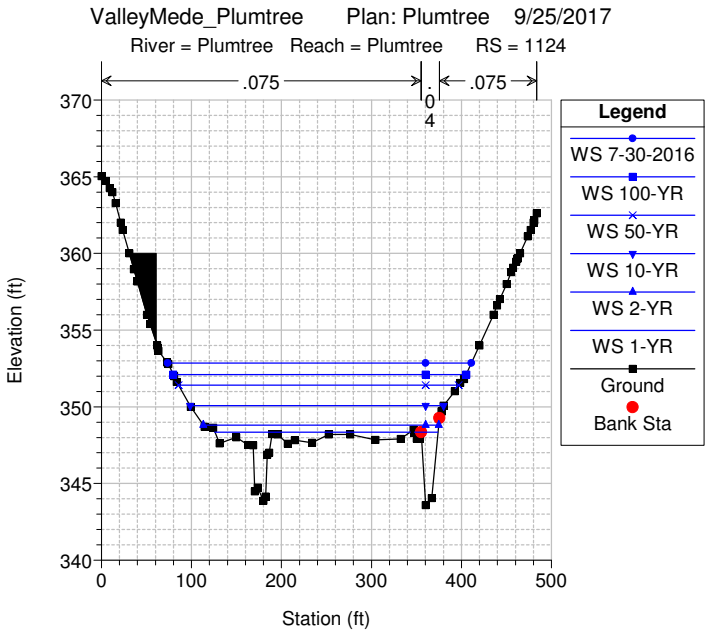

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

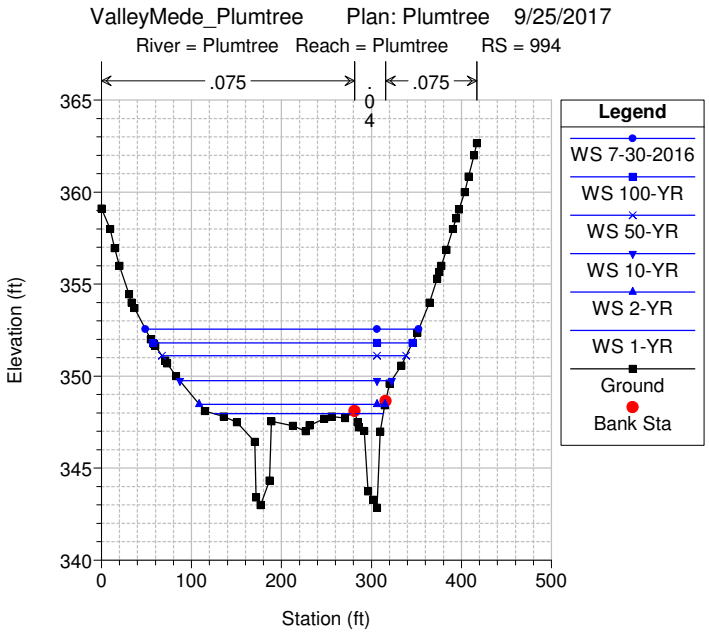

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 1830
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

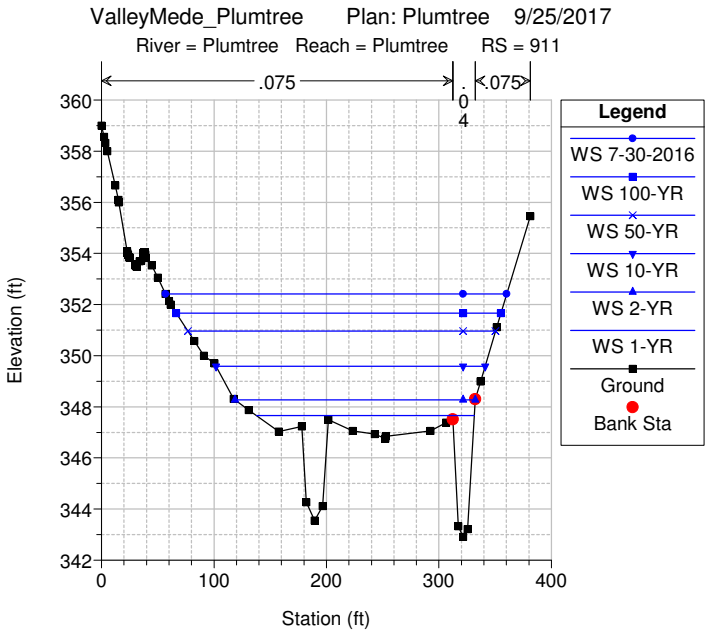

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 1641
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

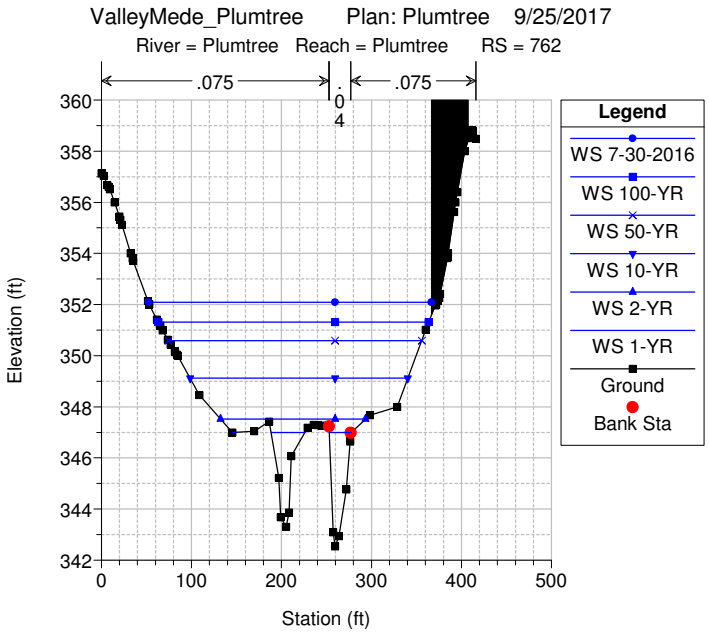

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 1463
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

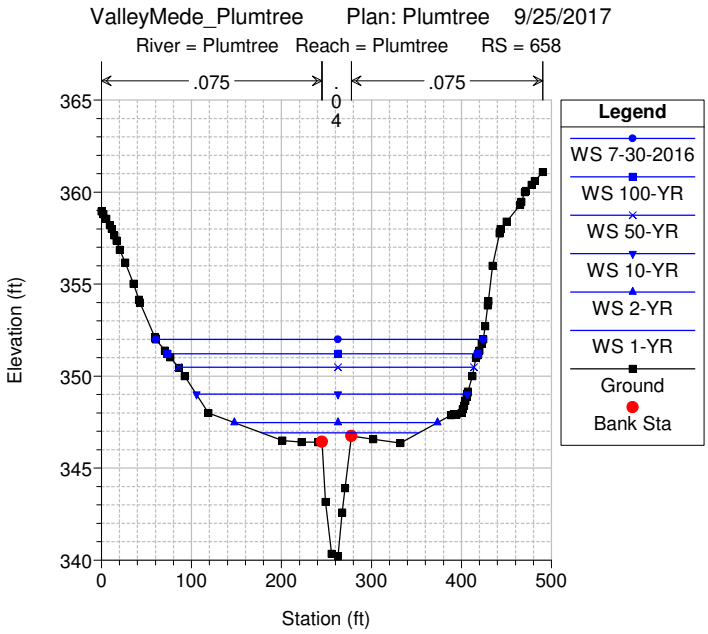

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 1291
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

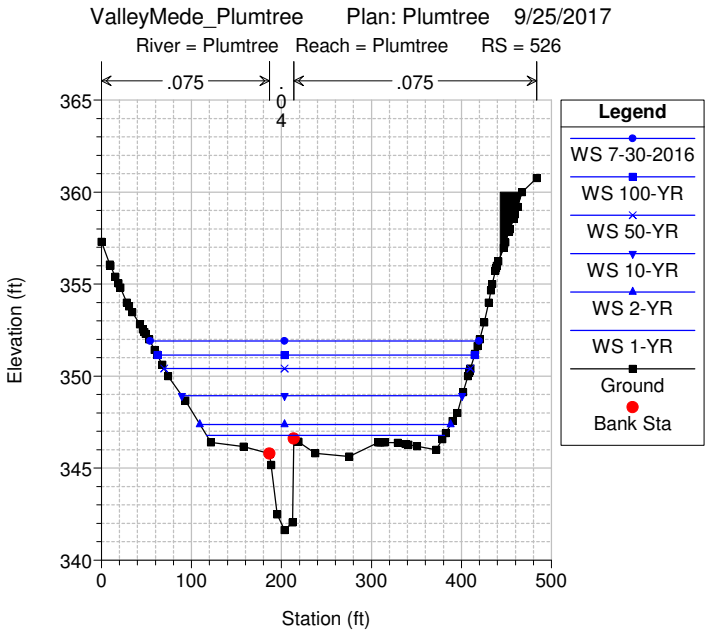

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 1124
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

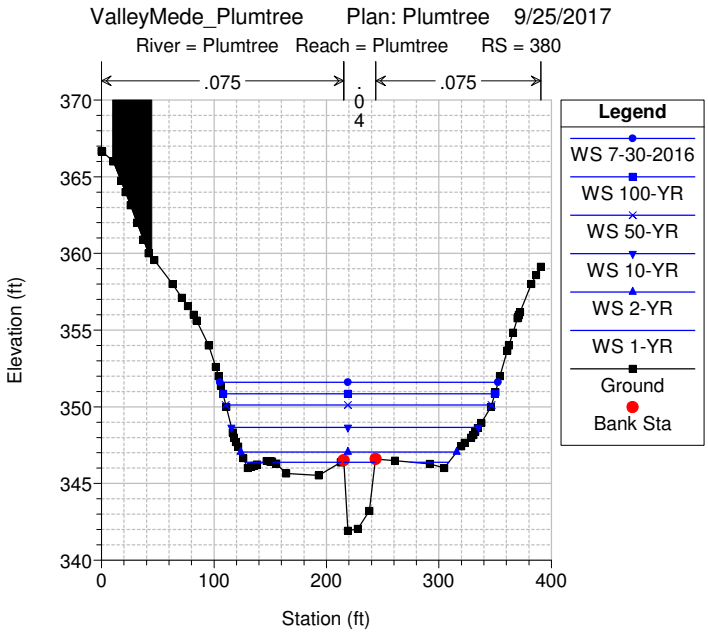

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 994
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

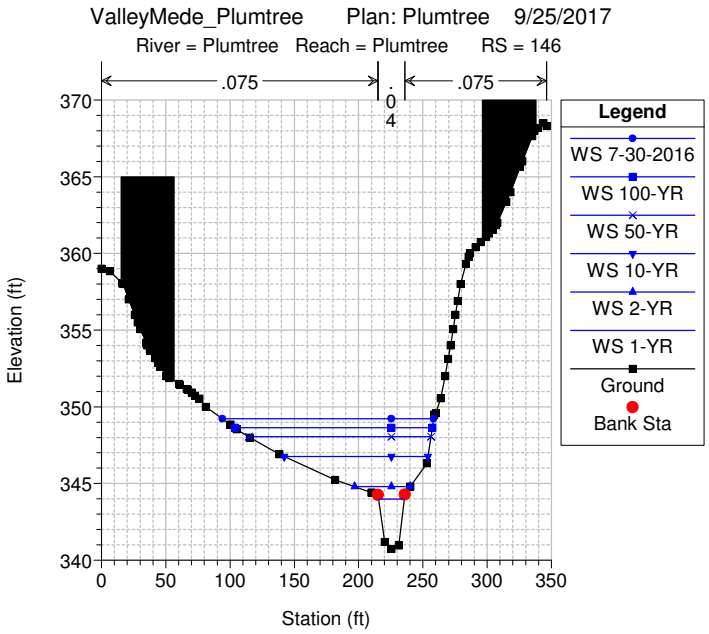

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 911
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

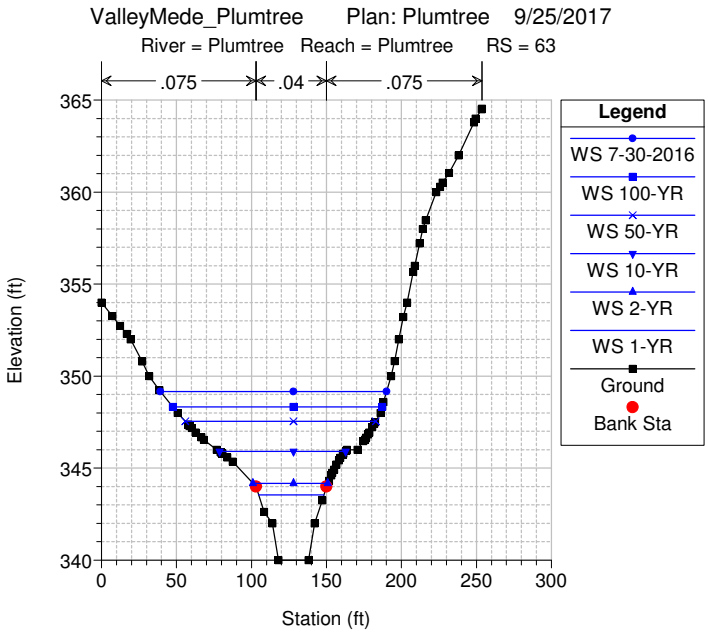

ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 762
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 658
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 526
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 380
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 146
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree 9/25/2017
River = Plumtree Reach = Plumtree RS = 63
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: ValleyMede_Plumtree
Project File : ValleyMede_Plumtree.prj
Run Date and Time: 9/25/2017 6:33:49 AM

Project in English units

PLAN DATA

Plan Title: Plumtree
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.p01

Geometry Title: Plumtree
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g01

Flow Title : Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f01

Plan Description:
Existing conditions of Plumtree Branch. Steady flow conditions.

Plan Summary Information:
Number of: Cross Sections = 85 Multiple Openings = 0
Culverts = 6 Inline Structures = 0
Bridges = 2 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f01

Flow Data (cfs)

River	Reach	RS	1-YR	2-YR	10-YR	50-YR	100-YR	7-30-2016
Plumtree	Plumtree	10286	223	307	596	995	1200	1333
Plumtree	Plumtree	9499	204	321	719	1263	1578	1757
Plumtree	Plumtree	6568	209	334	772	1391	1736	2002
Plumtree	Plumtree	4185	194	295	741	1395	1765	2157
Plumtree	Plumtree	1291	408	581	1316	2351	2995	3782

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Plumtree	Plumtree	1-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	2-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	10-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	50-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	100-YR	Critical	Normal S = 0.0035

GEOMETRY DATA

Geometry Title: Plumtree
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g01

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10286

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	421.06	4.46	420.89	12.57	420.32	16.13	420	21.94	419.29
34.88	418	40.42	417.33	49.09	416.56	55.82	416.21	59.64	416.08
64.03	416.14	69.28	416.31	71.51	416.31	77.01	416.75	78.81	416.76
87.6	416	91.89	415.92	104.16	414	107.04	413.94	110.15	414
119.18	415.05	122.23	414.9	125.21	414.83	141.42	414.84	151.61	414.58
159.6	414.54	167.19	414.69	175.25	414.38	179.96	413.77	184.56	413.83
198.65	413.63	213.29	412.97	221.19	413.06	244.79	412.19	252.86	412
260.69	411.14	268.55	410	275.66	409.1	281.64	408	295.07	406.35
301.98	405.73	324.56	404	331.77	402.81	335.97	402	342.56	400
348.24	398	350.27	397.89	380.47	396.22	384.18	396	392.32	395.09
392.68	395.09	397.28	395.62	402.89	396.12	413.25	396.41	418.97	396.59
431.99	396.41	448.58	396.55	450.96	396.5	456.66	396	465.37	395.79
485.62	395.34	494.65	395.35	513.52	395.9	514.52	396	527.48	398
535.86	400	542.87	402	555.37	406	562.67	408	571.1	410
582.03	412	599.19	414	605.88	414.94	612.34	415.57	635.29	417.19

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	380.47	.04	413.25	.085

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        380.47  413.25           240.46  241.25   237.2             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  418.97  635.29  396.59       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 10044

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  412.61    5.59  412.52   12.02     412   24.56     410   43.68     408
   63.32  407.31   82.83     408   95.82  408.67  112.17   408.9  135.95     408
  150.67  407.02  155.38  406.93  170.58  407.72  184.39  408.12  187.95     408
  198.17     406  207.41  404.64  213.72  403.97  220.01  403.47  230.16  403.33
  237.26  402.98  240.08  402.75  253.05   401.3  261.48     400  269.64     398
  276.05     396  280.89   394.8  280.91  394.79  283.98     394  296.18  392.49
  306.31  393.62   315.4  393.68  315.41  393.68   321.2  393.72  340.79   393.4
  357.04  393.75  384.23  394.62  389.34  394.61   409.5     394  417.56  393.18
  419.37  393.18  428.98     394  438.91  394.31  451.85  394.26   461.9  394.35
  480.45  394.77   489.6  395.18  496.68   395.1  547.82     396  555.48  396.43
  564.03  396.66  570.08  396.96  600.19   397.8  605.55  398.35  610.97  398.79
  622.38  399.08  632.53     400  658.42  401.23  661.34  401.26  665.82  401.48
  679.52  401.73  692.52  401.54  695.05  401.76  701.43  401.68  704.45   401.5
  715.06  401.24  723.65  401.19  738.24  400.62  741.08  400.41  748.78  400.57
  754.02  400.82  766.27  400.65  779.16  401.67  781.77     402  794.47     404
  812.23     408  815.19   408.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  280.91     .04   321.2    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.91   321.2            233.9  230.57  222.97             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9814

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  408.67   12.64     408    20.9   407.3   27.53  406.98    42.5  406.44
   45.07  406.25   49.58  405.72   78.23  403.56   83.62  402.79   92.79  403.11
  109.61   402.4   113.8     402  123.62  401.65  158.68  400.12  170.91  398.99
  182.64     398  195.08     396  198.75  395.24  205.66     394  253.13     392
   256.5  391.77  269.73  390.59  269.76  390.59  276.29     390  281.78  388.76
  287.27     390     300  391.49  302.59  391.81  308.77   392.3  315.09  392.31
  322.12  392.41  326.48  392.65  332.87  392.67  336.92  392.57  358.02  392.79
  362.67  392.97  366.57  392.83  382.15  392.69  386.15  392.76  408.35  392.69
  415.33  392.55  427.21  392.45  466.82  393.37  473.56  393.78  479.56     394
  490.09  394.88  500.42  395.03  503.77  395.29  508.66  395.37  510.05  395.29
  514.08  395.75  518.53   395.7  538.06  395.23  547.13  395.22  564.37     396
  575.99  396.66  593.58  397.53   602.7  396.78  604.57  396.76  609.13  397.48
  610.69     398  617.78   398.3   636.1  398.77  690.36  399.64  696.36  399.66
  731.55   398.7   739.3  398.59  745.07  398.39  755.19  398.48   767.5  398.81
  779.98  399.52  790.91  399.95  806.05     402  818.51   403.5  823.74     404
  826.23   404.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
       0    .085  253.13     .04  308.77    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        253.13  308.77            52.19   51.52   50.85             .1       .3
Right Levee     Station=  514.08      Elevation=  395.75

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9762

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  406.21    1.37     406   14.09  404.95   24.55  404.21   38.68  402.62
   47.25     402   67.31     400   71.18  399.81    79.7  399.62   84.43  399.37
  117.61  398.32   130.2  398.16  134.88     398  147.37  397.38  157.13  397.03
  162.41  397.34  174.01  396.74  180.45     396  203.34  393.86  225.77  392.62
  235.15     392  236.85  391.76  246.11  391.05  253.44  390.35  253.48  390.34
  256.39     390  260.62  388.92  263.74     388  265.59  389.21  267.49     388
  276.02     390  282.13     392   284.2  392.49  284.22  392.49  290.57     394
  292.66  393.58  294.75     394   307.3  392.92  329.54  391.59  336.98  391.01
  346.17  391.13  351.58  391.28  355.99  391.22  362.72  391.29  365.01  391.44
  375.54  391.54  383.33  391.42  390.57  391.67  406.22     392  413.09  392.62
  427.35  393.41  431.42   393.8  432.21     394  447.82  395.11  449.31  395.15
  470.35  394.72   473.7  395.12  482.31  395.53  496.51  395.21  507.72  395.47
  543.73  396.64  554.26  396.66  559.24  396.89  562.97  396.96  568.76  397.23
  584.75  397.94  589.53  398.31  594.28     398  601.77  397.68  611.77     398
   662.6   399.2  729.79  397.67  753.67  397.86  761.91     398   785.2  399.61
  794.52  400.41  805.84  402.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  235.15     .04  284.22    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.15  284.22            32.64   30.09   27.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9732

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  121.15           145.71  143.47  141.55             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 9650

INPUT
Description: Michaels Way
Distance from Upstream XS =      51
Deck/Roadway Width        =      50
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  396.38            26.1 395.934            49.6 395.582
    91.4 394.914           117.4 394.746           144.9 394.497
   186.3 394.402          211.94 394.376          238.63 394.594
  353.45     396

Upstream Bridge Cross Section Data
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
          82.5  121.15             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  397.96             8.6   397.3            45.6 396.969
    68.8 396.671            92.4  396.38           123.2 395.934
   146.8 395.582           191.3 394.914           209.6 394.746
   232.9 394.497           262.2 394.402           288.2 394.376
  314.98 394.594          417.56     396

Downstream Bridge Cross Section Data
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
      0  397.96   15.99  396.01   17.57     396   20.76  395.29   25.99  395.01
  29.32  394.71   29.33  394.38   39.55  392.85   60.92  392.22   95.59   390.4
 100.13  389.82  106.73  388.97  116.38  387.66  117.95  386.81  124.68  386.27
 130.57  386.46  134.27   387.9   134.7     388  137.88  388.68  144.79  390.87
 157.88  392.09  174.45  391.81  191.33  392.09  218.95   392.7   229.4  392.07
 229.72  392.09  239.13  392.16  239.87  392.21  251.99  392.37  252.81  392.33
 253.84  392.05  264.78  392.06  265.66  392.35  265.82  392.37  274.13  392.48
 275.38  392.39   275.8  392.37  280.37  392.38  285.74  392.34  288.04  392.35
 289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
 294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
 302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
 336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
 353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
 363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        106.73  137.88             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8   391.2       F
   140.7  417.56   391.2       F

Upstream Embankment side slope              =       3 horiz. to 1.0 vertical
Downstream Embankment side slope            =       3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.5     .024     .016        0                  .5                1
Upstream   Elevation =  387.74
           Centerline Station =  102
Downstream Elevation =  386.61
           Centerline Station =  120

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.6     .024     .016        0                  .5                1
Upstream   Elevation =  387.77
           Centerline Station =  112
Downstream Elevation =  386.6
           Centerline Station =  130

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        112.20    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          7.43
  Q Barrel (cfs)            112.20    Culv Vel DS (ft/s)          5.35
  E.G. US. (ft)             391.04    Culv Inv El Up (ft)       387.74
  W.S. US. (ft)             390.89    Culv Inv El Dn (ft)       386.61
  E.G. DS (ft)              389.52    Culv Frctn Ls (ft)          0.13
  W.S. DS (ft)              389.31    Culv Exit Loss (ft)         0.24
```

Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.64	Weir Sta Lft (ft)	
E.G. OC (ft)	391.04	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.01	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	146.33	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.10
Q Barrel (cfs)	146.33	Culv Vel DS (ft/s)	5.56
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	390.20	Culv Frctn Ls (ft)	0.84
W.S. DS (ft)	389.99	Culv Exit Loss (ft)	0.27
Delta EG (ft)	1.35	Culv Entr Loss (ft)	0.51
Delta WS (ft)	1.37	Q Weir (cfs)	
E.G. IC (ft)	391.22	Weir Sta Lft (ft)	
E.G. OC (ft)	391.64	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.11	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.99	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.37	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.37	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	298.28	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	298.28	Culv Vel DS (ft/s)	8.93
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	391.43	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	391.04	Culv Exit Loss (ft)	0.85
Delta EG (ft)	2.53	Culv Entr Loss (ft)	0.70
Delta WS (ft)	2.76	Q Weir (cfs)	
E.G. IC (ft)	393.54	Weir Sta Lft (ft)	
E.G. OC (ft)	393.96	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.87	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.98	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	365.61	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	365.61	Culv Vel DS (ft/s)	9.43
E.G. US. (ft)	395.25	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.11	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.59	Culv Frctn Ls (ft)	0.24
W.S. DS (ft)	392.07	Culv Exit Loss (ft)	0.86
Delta EG (ft)	2.66	Culv Entr Loss (ft)	0.69
Delta WS (ft)	3.04	Q Weir (cfs)	263.03
E.G. IC (ft)	394.79	Weir Sta Lft (ft)	70.13
E.G. OC (ft)	395.24	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.16	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	392.07	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)	5.05	Weir Flow Area (sq ft)	123.26
Culv Crt Depth (ft)	3.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	352.60	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.81
Q Barrel (cfs)	352.60	Culv Vel DS (ft/s)	8.81
E.G. US. (ft)	395.57	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.40	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	1.15
W.S. DS (ft)	392.60	Culv Exit Loss (ft)	0.69
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.60
Delta WS (ft)	2.80	Q Weir (cfs)	493.18
E.G. IC (ft)	394.49	Weir Sta Lft (ft)	49.49
E.G. OC (ft)	395.55	Weir Sta Rgt (ft)	286.44
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.21
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.83
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	196.32
Culv Crt Depth (ft)	3.86	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	347.45	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.68
Q Barrel (cfs)	347.45	Culv Vel DS (ft/s)	8.68
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.59	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.38	Culv Frctn Ls (ft)	1.11
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.38	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.70	Q Weir (cfs)	637.61
E.G. IC (ft)	394.37	Weir Sta Lft (ft)	43.81
E.G. OC (ft)	395.76	Weir Sta Rgt (ft)	291.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.37
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	237.06
Culv Crt Depth (ft)	3.81	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.80	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.48
Q Barrel (cfs)	110.80	Culv Vel DS (ft/s)	5.26
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.35
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.22
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.65	Weir Sta Lft (ft)	
E.G. OC (ft)	391.05	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.74	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.97	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.94	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	160.67	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.38
Q Barrel (cfs)	160.67	Culv Vel DS (ft/s)	6.08
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.60

E.G. DS (ft)	390.20	Culv Frctn Ls (ft)	0.84
W.S. DS (ft)	389.99	Culv Exit Loss (ft)	0.36
Delta EG (ft)	1.35	Culv Entr Loss (ft)	0.10
Delta WS (ft)	1.37	Q Weir (cfs)	
E.G. IC (ft)	391.46	Weir Sta Lft (ft)	
E.G. OC (ft)	391.91	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	390.27	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.99	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.49	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.50	Min El Weir Flow (ft)	394.39

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	297.72	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.57
Q Barrel (cfs)	297.72	Culv Vel DS (ft/s)	8.90
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	391.43	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	391.04	Culv Exit Loss (ft)	0.84
Delta EG (ft)	2.53	Culv Entr Loss (ft)	0.71
Delta WS (ft)	2.76	Q Weir (cfs)	
E.G. IC (ft)	393.56	Weir Sta Lft (ft)	
E.G. OC (ft)	393.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.84	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	366.36	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.50
Q Barrel (cfs)	366.36	Culv Vel DS (ft/s)	9.44
E.G. US. (ft)	395.25	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.11	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.59	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	392.07	Culv Exit Loss (ft)	0.87
Delta EG (ft)	2.66	Culv Entr Loss (ft)	0.70
Delta WS (ft)	3.04	Q Weir (cfs)	263.03
E.G. IC (ft)	394.84	Weir Sta Lft (ft)	70.13
E.G. OC (ft)	395.26	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.15	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	392.07	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)	4.90	Weir Flow Area (sq ft)	123.26
Culv Crt Depth (ft)	3.97	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	354.22	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.85
Q Barrel (cfs)	354.22	Culv Vel DS (ft/s)	8.85
E.G. US. (ft)	395.57	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.40	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	1.16
W.S. DS (ft)	392.60	Culv Exit Loss (ft)	0.70
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.61
Delta WS (ft)	2.80	Q Weir (cfs)	493.18

E.G. IC (ft)	394.55	Weir Sta Lft (ft)	49.49
E.G. OC (ft)	395.58	Weir Sta Rgt (ft)	286.44
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.21
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.83
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	196.32
Culv Crt Depth (ft)	3.87	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	347.95	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.70
Q Barrel (cfs)	347.95	Culv Vel DS (ft/s)	8.70
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.59	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.38	Culv Frctn Ls (ft)	1.12
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.38	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.70	Q Weir (cfs)	637.61
E.G. IC (ft)	394.41	Weir Sta Lft (ft)	43.81
E.G. OC (ft)	395.77	Weir Sta Rgt (ft)	291.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.37
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	237.06
Culv Crt Depth (ft)	3.82	Min El Weir Flow (ft)	394.39

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01
29.32	394.71	29.33	394.38	39.55	392.85	60.92	392.22	95.59	390.4
100.13	389.82	106.73	388.97	116.38	387.66	117.95	386.81	124.68	386.27
130.57	386.46	134.27	387.9	134.7	388	137.88	388.68	144.79	390.87
157.88	392.09	174.45	391.81	191.33	392.09	218.95	392.7	229.4	392.07
229.72	392.09	239.13	392.16	239.87	392.21	251.99	392.37	252.81	392.33
253.84	392.05	264.78	392.06	265.66	392.35	265.82	392.37	274.13	392.48
275.38	392.39	275.8	392.37	280.37	392.38	285.74	392.34	288.04	392.35
289.04	392.37	289.76	392.35	291.67	392.43	292.2	392.41	293.73	392.52
294.34	392.49	295.48	392.61	297.43	392.5	299.89	392.58	301.52	392.7
302.57	392.72	317.67	393.33	321.58	393.35	323.43	393.4	328.45	393.52
336.04	393.41	337.54	393.43	342.18	393.53	347.45	393.83	351.46	393.93
353.19	394	353.68	394.06	355.32	394.12	356.64	394.21	359.84	394.23
363.57	394.38	408.86	396	412.96	396.28	417.56	396.44		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.73	.04	137.88	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
106.73	137.88	74.95	89.37	103.36	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	104.8	391.2	F
140.7	417.56	391.2	F

CROSS SECTION

RIVER: Plumtree

REACH: Plumtree RS: 9499

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.42	1.16	397.39	10.04	396	12.41	395.1	15.2	394
19.89	392.3	20.69	392	30.94	390.03	58.35	389.54	78.64	389.7
91.71	389.72	91.72	389.72	95.66	389.73	106.35	385.4	108.48	385.35
121.85	388.31	126.28	389.29	134.6	389.39	148.99	387.24	154.41	388.47
172.52	389.82	180.01	390	192.12	392	192.21	392.01	204.6	394
211.88	395.17	217.46	396	219.87	396.49	223.11	397.11	227.54	398
230.91	398.56	233.71	399	240.41	400	246.88	400.81		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	95.66	.04	126.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
95.66	126.28	98.65	101.8	104.92	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9398

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398.2	5.52	398.06	6.45	398	10.27	396.93	13.95	396
17.15	395.1	21.18	394	22.21	393.72	23.21	393.45	25.97	392.71
28.56	392	35.43	391.01	38.29	390.6	43.03	390	43.15	389.99
46.04	389.74	46.81	389.7	47.09	389.68	47.37	389.65	55.11	389.4
55.76	389.36	56.28	389.32	56.92	389.26	63.39	388.58	69.33	388.73
71.4	388.44	71.45	389.03	80.15	389.63	92.99	388.55	114.44	388.98
120.46	388.94	120.47	388.94	128.65	388.89	134.08	384.53	135.79	384.42
141.88	384.75	145.59	388.85	150.79	388.83	167.65	388.75	186.81	388.92
200.79	389.39	202.6	390	212.88	391.15	214.18	392	222.75	392.3
224.12	392.62	227.87	392.98	232.15	393.19	232.46	393.21	235.68	393.41
238.89	393.56	241.36	393.69	244.69	393.87	245.13	393.89	247.11	394
255.3	394.93	262.09	395.66	265.18	396	268.55	396.34	272.92	396.76
279.66	397.44	280.66	397.53	281.55	397.61	285.79	398	291.8	399.12
296.37	400	301.1	400.86						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	128.65	.04	145.59	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.65	145.59	97.24	96.47	94.54	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9301

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400.19	3.07	400	4.08	399.94	4.2	399.94	13.57	399.39
15.2	399.29	20.44	399.07	21.01	399.05	21.75	399.02	22.33	399
33.53	398.93	34.16	398.91	34.62	398.89	50.07	398.18	51.97	398.04
52.52	398	56.81	396.58	58.64	396	59.61	395.91	64.07	395.25
72.56	394	73.12	393.94	74.3	393.83	84.4	392.97	90.89	392.65
97.02	392.35	101.28	392.17	101.59	392.16	101.86	392.14	101.98	392.14

```
  104.04     392   106.2  392.22  109.76  392.28  110.09  392.26   110.2  392.25
  111.04  392.21   113.1  392.09  140.12  387.83   145.5  387.55  154.95  387.07
  157.77  384.36  160.52  383.31  166.94  384.65  171.14  388.29  175.86  388.27
  175.87  388.27  183.69  388.23  215.21  388.62  222.39   389.2  234.24  392.69
  252.67  392.11  269.21  391.61  287.95  393.96  291.68     394  304.65  395.18
  314.29  395.71  317.24  395.93  317.28  395.93  318.14     396  320.84  396.21
   321.8   396.3  324.25  396.51  326.08  396.68  329.75  397.01  336.95   397.7
  338.16  397.81  340.03     398  341.44  398.43   347.8     400  351.27  400.78
  352.31  401.05

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  154.95     .04  171.14    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        154.95  171.14           109.84     105  100.42             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    42.5    98.1     405

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9196

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  399.06    3.11   399.1    7.66  399.14    8.21  399.14   11.14   399.2
   14.16  399.24   15.16  399.23   16.06  399.21   16.45   399.2   16.79  399.18
   17.07  399.17   44.77     399    46.3  398.96   57.79  398.17   58.05  398.12
   58.52  398.07   59.24  398.01   59.47     398   59.81  397.95   60.63  397.83
   60.69  397.82   61.36  397.83   62.34   397.8    62.8  397.77   63.34  397.77
   63.74  397.73   73.15  396.86   74.17  396.76   74.98  396.67   80.24     396
   91.29  394.71   96.77     394  103.28   393.2  108.02  392.64  109.29  392.48
  110.44  392.34   113.4     392   129.6     390  133.01  389.51   134.1  389.41
  135.16  389.31  138.39  388.96  141.78  388.59  143.61  388.38  145.61  388.15
  146.23  388.08  146.93  388.04  146.98     388  156.92     387  192.18  386.94
  214.32  387.26  224.37  387.23  224.38  387.23  230.17  387.21  234.05  385.77
  239.97  384.81  241.03  384.18     243  383.81  247.36  387.68   256.1  387.12
  258.34  386.98  282.41   388.4  293.08  392.68  309.62  391.47  323.53  392.22
  323.58  392.18   354.2     394  361.45  395.27  365.79     396  370.25  397.12
   373.9     398  375.39  398.33  383.13     400   386.3  400.73  391.87     402
  395.39   402.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  230.17     .04  247.36    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        230.17  247.36           197.07  208.89  195.59             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      11    50.8     405

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8987

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  402.15    2.15  402.17    3.39  402.13    6.04  402.17   12.51  402.07
   13.01  402.08   14.07  402.07   15.03  402.07   16.62   402.1   16.88  402.09
```

17.7	402.05	18.67	402	24.82	401.62	50.49	400	71.91	398.02
72.1	398	72.14	397.99	82.9	396	83.83	395.8	92.09	394
100.48	392.04	100.64	392	100.82	391.96	101.02	391.92	110.17	390
121.03	388.29	142.19	386.02	152.75	385.4	161.75	385.92	161.76	385.92
161.94	385.93	170.22	385.8	172.51	383.34	178.25	382.77	183.07	383.36
185.81	386.43	193.25	386.15	202.96	385.78	222.78	385.7	249.39	385.47
263.78	390.18	301.3	390	301.69	390.04	302.4	390.1	313.7	391.1
324.37	392	326.83	392.6	329.22	393.19	332.48	394	335.16	394.95
338.19	396	340.18	396.58	342.55	397.27	344.45	397.82	345.03	398
346.35	398.38	351.77	400	352.66	400.28	356.31	401.47	357.07	401.72
357.94	402	358.9	402.3	364.45	404	365.62	404.4	369.07	405.49

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	170.22	.04	185.81	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
170.22	185.81	233.38	233.77	226.61	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8753

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.84	3.57	392.36	4.48	392.24	6.24	392	14.25	391.04
22.57	390	39.19	388.36	42.66	388	43.14	387.95	44.71	387.76
45.13	387.7	53.93	387	55.07	386.91	55.91	386.89	59.98	386.86
67.22	387.07	71.26	386.74	71.58	386.73	74.94	386.49	75.24	386.48
79.99	386.13	80.09	386.12	81.64	386	140.52	386.79	179.2	384.55
199.15	384.94	212.08	384.65	214.59	384.6	226.78	384.34	229.61	382.96
231.97	382.55	232.78	382.41	236.12	381.99	237.03	382.27	237.82	384.79
243.64	385.02	243.65	385.02	246.4	385.13	254.4	387.48	262.5	388.23
269.36	387.48	284.51	387.86	284.57	388.25	284.6	388.25	284.74	388.27
302.51	390	304.49	390.31	314.62	392	318.02	392.86	322.27	394
323.63	394.41	327.41	395.54	328.32	395.82	328.9	396	329.96	396.36
334.49	398	337.27	399.01	339.54	400	340.77	400.45	344.57	402
346.47	402.7	350	404	351.3	404.47	352.94	405.01	353.27	405.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	226.78	.04	237.82	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
226.78	237.82	178.41	174.76	168.62	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8579

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400.17	3.31	400	17.74	399.07	34.62	398	35.22	397.93
46.41	397.26	51.75	396.96	59.26	396.5	60.57	396.41	63.23	396.27
68.83	396	75.46	394.89	76.44	394.72	79.84	394.17	80.17	394.11
80.95	394	93.93	392.04	94.14	392	94.63	391.88	95.67	391.71
95.96	391.67	96.13	391.66	102.2	391.37	103.3	391.28	107.14	391.06
111.25	390.74	112.8	390.64	116.2	390.33	116.74	390.29	119.66	390
124.86	389.68	126.23	389.59	129.14	389.43	130.57	389.33	132.66	389.17
135.1	389.03	138	388.83	141.06	388.61	147.32	388.13	148.92	388
153.19	387.46	172.43	385.68	186.19	383.82	200.87	383.46	218.33	383.53

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  227.14  382.25  231.16  382.93  233.37  383.31  235.71  383.61  242.87  381.38
  248.28  381.13  250.03  381.37  251.19  383.67  263.28  383.69  264.68   383.7
  279.14   384.5  298.66  387.04   300.8     387  315.88     390  320.59  391.65
   321.5     392  322.64  392.54  325.53     394   328.7  395.54  329.55     396
  332.04  397.23  333.33     398  334.37  398.44  338.88     400  339.68  400.16
  340.45  400.35  347.58     402  352.32   402.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  235.71     .04  251.19    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.71  251.19           198.29  204.23  206.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8374

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  401.05     .39  401.02   14.71     400   17.51  399.78   17.87  399.76
   18.37  399.72   19.63  399.64   20.25   399.6      22  399.47   31.49  398.77
   42.12     398   43.17  397.92   43.74  397.88   48.54  397.52   49.54  397.46
   51.19  397.35   54.98  397.06   67.52   396.4   67.98  396.37    72.6  396.03
      73     396   77.65  395.72   79.49   395.6   80.67  395.52   82.29  395.41
   83.66  395.31   85.08   395.2  104.07     394  108.69  393.72  110.21  393.61
  111.59  393.51  116.39  393.15  122.53  392.72  129.15  392.19  131.43     392
  140.54  390.76  146.03     390  147.63  389.84  149.67  389.65   158.7  388.75
  166.96     388  174.92  387.31  176.26  387.21  182.29     386  189.22  384.97
  217.89   382.7  254.28  382.69  262.97  382.52  262.98  382.52   272.5  382.34
  274.84   380.5  276.51  380.31  286.75  380.32  292.45  384.62  293.85  384.83
  305.64   386.6  321.38     388  325.59  388.89  331.68     390  334.17  390.71
  336.02   391.3   338.3     392  343.97  393.91  344.22     394  345.13  394.36
  349.46     396  350.95   396.6  354.45     398  356.99  399.37  358.18     400
  359.59  400.71  360.34  401.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   272.5     .04  292.45    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         272.5  292.45           144.9  145.45  146.03             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8229

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  394.36    5.81  394.06    6.29     394    7.37  393.95   45.41     392
   69.28  390.22   72.15     390   72.18     390   72.26  389.98   72.54  389.95
      73  389.89   74.69  389.72   75.45  389.65   75.92  389.61   75.99   389.6
   79.77  389.37    82.3  389.25  100.97  388.39  107.53     388  110.36   387.9
  110.76   387.9  112.75  387.84  132.43     386  139.68   385.1  170.44  382.68
  187.75  382.12  197.62  382.13  197.63  382.13  207.39  382.14  209.28   380.1
  212.63  379.79  215.85  380.15  217.64  381.75  227.71  382.65  227.84  382.66
  243.37  383.19  265.96  384.67     268  384.46  288.88     388  293.09  388.12
  308.33  389.98  308.55  389.98  309.46  389.99  310.08     390  315.47   391.1
  319.76  391.98   319.9     392  320.02  392.04  321.07  392.37     326   393.9
  326.33     394   328.6  394.86
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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  207.39     .04  217.64    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        207.39  217.64           135.27  135.16  134.66             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8094

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  394.62    2.48   394.2    3.72     394     3.8  393.98     4.1  393.92
    4.62  393.84    5.04  393.78    5.44  393.73     5.7   393.7   24.53  392.35
   27.13   392.1   27.41  392.08   28.22     392   37.38  391.13   48.65     390
   55.52  389.55   79.43  388.11   79.45  388.11    79.5   388.1   79.73  388.02
   79.79     388   96.53  386.44   99.06   386.2  101.25     386  106.88  385.44
  109.08  385.26  113.06  384.89   116.1  384.62  119.34   384.4  120.88  384.28
  121.97  384.22  122.35  384.19  122.91  384.14  134.05   383.5  144.72   382.7
  163.81  381.63  182.02  380.88  183.82  381.01  183.84  381.01  194.28  381.76
  195.27  379.09  198.85  378.24  204.43  378.53  207.68  381.82  215.37  381.59
  219.87  381.46  228.39  381.39  231.06  382.03  246.18   381.9  274.41  383.36
  311.66  389.55  311.72  389.81  311.73  389.81  329.62     392  337.85  393.59
  339.81     394  342.65  394.79  346.84     396  349.21  396.76  352.92     398
  358.41  399.96  358.53     400  358.64  400.03  368.44     402  368.97  402.04
  369.04  402.04  369.13  402.05  375.87  402.56  376.87  402.63  378.22  402.73
  382.48  403.06  386.91  403.38  388.95  403.53  390.87  403.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  194.28     .04  207.68    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        194.28  207.68           138.21  139.81  140.01             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7954

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  390.87    1.06  390.76    5.56  390.36    8.09  390.17     9.7  390.06
   12.95  389.88   15.86  389.75   20.41  389.55   21.37  389.49   22.17  389.45
   26.06  389.27    27.8  389.18   29.65   389.1   31.21  389.02   32.58  388.93
   33.19  388.89   40.18  388.65   41.65  388.54   44.29  388.45   47.14  388.32
   47.67  388.28   49.22   388.2   50.93  388.11   52.62     388   54.06  387.89
   58.14  387.52   60.02  387.34   70.48  386.32   73.92     386   75.83  385.87
   81.99  385.49   86.05  385.25   88.16  385.06   94.21  384.69   95.33  384.57
   98.59  384.23   99.42  384.17  100.92     384  114.44  382.88  125.39     382
  130.61  381.95  156.45  380.05  188.73  379.73  199.32  380.23  210.56  380.77
     212   378.9  214.38  377.79  218.13  379.54  221.11  380.65  229.58  380.68
  231.23  380.69  249.42  380.31   281.8  380.49   295.4     380  299.39  381.16
  302.17     382  305.31  382.93  310.71  384.55  316.22     386  323.56  387.01
  330.85     388  342.34   389.5  345.84     390  347.98   390.9  350.48     392
  352.14  392.75  355.01     394  357.39  394.99  359.91     396  362.57  396.94
  365.15  397.64  366.49     398  375.99  398.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  210.56     .04  221.11    .085
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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        210.56  221.11           155.28  153.64  152.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7800

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  389.23     6.4  388.77   18.95     388   32.05  387.12   34.38  386.96
   40.95  386.52   41.74  386.47   42.88  386.38   48.62     386   49.93  385.92
   50.74  385.86   62.21   385.1   65.97  384.84    73.9  384.32   75.81   384.2
   77.92  384.08   78.06  384.07   79.37     384   79.61  383.95   79.79  383.92
    79.9  383.91    81.2  383.76   81.59  383.72   81.85  383.71   82.72  383.74
   88.11  383.68   89.08  383.64   89.68  383.58   90.64  383.53   91.54  383.48
   92.48  383.38   93.55  383.29   96.76     383   98.06  382.88   99.04  382.78
  102.88  382.37  106.07     382  129.44  380.05  152.75  378.79  172.94  379.22
  186.27  379.75  187.83  378.84  191.51  378.79  198.74  378.73     200  379.32
  200.83   379.7  211.69     379  223.63  379.27  230.99   379.1  240.48  378.88
  259.49  379.02  278.05  378.97  305.83  379.75  307.52     380  314.08   381.6
  315.71     382  316.56  382.21  318.83  382.81  323.87     384  331.19  385.58
  333.53     386   340.6  386.91  350.42     388  352.19  388.23  353.07  388.36
  356.29  388.87  360.39  389.49  361.84  389.72  363.36     390  364.77  390.43
  366.25  390.85  370.11     392  372.25  392.58

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.27     .04  200.83    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.27  200.83           252.37  252.82  252.55             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7548

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.07     .78     384    5.11  383.66    7.63   383.5   11.97  383.17
   14.64  382.99   17.76  382.76   24.91  382.21   27.52     382   28.85  381.83
   29.51  381.79   32.65  381.46   35.07  381.21   46.63     380   59.52  379.12
   61.36     379   65.17  378.74   75.34  378.13   77.34  378.05   77.62     378
   83.55  378.07   85.43  378.08   88.35  378.07   95.64  378.09  101.54  378.13
  108.95  378.07  110.55  378.08  119.01  378.06  138.28  378.06  168.39  378.45
  198.66  378.25  217.53  377.85  219.53  377.83  219.55  377.83  230.43  377.75
  232.68  376.67  235.51  375.57  238.58  376.37  240.21  377.92  249.56   377.9
  258.68  377.89  288.89  377.64  323.87  376.92   330.2  377.07  336.47     378
  340.56  378.61  343.65  379.04  345.35  379.25  349.52  379.62  352.72  379.89
  353.04  379.92  353.25     380  353.89  380.15   356.3  380.75  360.75     382
  369.15     384  377.97  385.33  382.29     386  383.74  386.27  393.23     388
  398.11     389  402.86     390  406.24  390.27  406.63  390.26  409.53     390
  411.75  389.85   413.2  389.77   418.1  389.46  420.07  389.37  423.04  389.17
  425.75  388.96   431.8   389.4  440.42     390   442.9  390.41  445.97  390.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  230.43     .04  240.21    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        230.43  240.21           174.12  180.41  186.79             .1       .3
```

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7367

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.88	17.18	384.04	17.79	384	19.31	383.69	27.57	382
33.56	381.11	40.22	380	72.92	378	75.63	377.86	83.54	377.49
84.36	377.49	86.2	377.54	86.99	377.54	87.28	377.52	88.37	377.57
88.81	377.59	98.7	377.77	99.18	377.78	99.84	377.77	153.1	379.18
184.66	379.38	209.09	379.76	209.11	379.76	216.46	379.87	218.28	379.16
220.46	378.71	224.14	378.3	227.18	379.5	239.26	379.44	239.27	379.44
256.12	379.35	283.76	378.85	301.95	376	306.84	375.99	309.51	375.94
311.37	375.92	312.47	375.93	313.98	375.94	315.54	376	317.31	376.05
328.94	376.26	339.82	376.48	386.56	377.48	387.24	377.47	389.22	377.48
389.83	377.49	393.84	377.67	396.67	377.79	398	377.85	399.4	377.89
400.73	377.95	403.02	378	405.65	378.1	407.78	378.19	409.29	378.26
410.92	378.34	413.44	378.46	417.48	378.69	420.02	378.83	428.31	379.29
429.6	379.36	436.31	379.72	436.88	379.75	441.68	380	449.79	380.68
452.35	380.9	458.41	381.46	460.97	381.69	464.19	382	470.57	382.96
477.61	384	480.68	384.57	488.87	386	495.27	386.99	498.55	387.34

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	216.46	.04	227.18	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
216.46	227.18	143.37	150.84	157.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7216

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.75	1.08	385.65	5.95	385.32	10.54	384.89	18.99	384.19
19.48	384.13	19.51	384.13	19.72	384.03	19.77	384.03	19.83	384
21.34	383.6	24.22	382.82	25.18	382.55	27.46	382	33.57	381.07
41.34	379.98	60.13	379	65.81	378.72	75.73	378.27	77.55	378.18
79.67	378.07	80.08	378.07	80.17	378.06	81.18	378	81.5	377.95
81.94	377.89	82.7	377.88	134.09	376.01	134.34	376	135.9	375.99
142.56	375.98	148.85	376	148.97	376	159.54	375.75	186.07	376.5
205.76	375.8	205.79	375.8	221.2	375.26	236.22	376.17	236.23	376.17
243.36	376.61	267.12	376.15	298.57	377.1	324.96	378	344.89	379.72
346.99	379.9	348.24	380	355.59	380.52	358.24	380.72	369.12	381.55
372.54	381.8	375.03	382	377.33	382.49	384.79	384	385.68	384.2
393.83	386	394.81	386.17	399.71	387.05	405.49	388	406.42	388.18
407.5	388.41	413.63	389.1	417.54	389.6	418.61	389.74	420.77	390
421.3	390.07	421.95	390.14	429.79	391.08	433.06	391.43	434.12	391.56
434.45	391.61	438.52	392	445.08	392.32	449.48	392.54	451.09	392.66

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.07	.04	243.36	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.07	243.36	190.28	186.42	181.46	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
377.1	439.5	390	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7030

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.29	2.41	387	10.05	386	29.45	384.45	32.78	384.15
33.33	384	36.52	383.46	40.31	382.87	43.31	382.38	46.06	382
46.12	381.98	48.59	381.84	49.64	381.82	49.97	381.8	50.4	381.79
50.62	381.77	71.01	380.53	81.91	380	92.52	379.05	103.93	378
123.79	376.72	134.74	376.11	135.07	376.05	135.57	376	135.6	375.99
137.36	375.81	139.35	375.62	140.29	375.67	145.45	375.59	151.15	375.29
153.13	375.29	164.88	375.94	165.28	375.96	165.81	376	175.82	375.48
205.64	375.09	233.21	375.65	248.05	375.46	259.75	375.31	261.56	373.84
262.29	373.43	263.48	373.62	268.09	375.54	278.5	375.62	279.83	375.63
309.7	376.93	312.89	376.93	319.01	378	322.75	379.67	328.88	379.92
332.16	380	333.98	380.26	345.53	382	358.26	384	368.51	385.52
371.9	386	379.53	387.21	385.4	388	395.57	389.56	398	389.92
398.64	390	402.14	390.27	406.61	390.59	410.26	390.83	412.74	390.96
415.65	391.11	416.49	391.16	419.22	391.29	423.04	391.64	423.34	391.66
427.09	392	428.37	392.13	432.56	392.47	446.6	393.09		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	259.75	.04	268.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
259.75	268.09	140.13	137.19	133.92	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
372.8	404.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6893

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.2	2.38	382.99	8.39	382.4	12.65	382	20.07	381.43
21.04	381.32	23.89	381.07	32.28	380	33.24	379.94	36.89	379.63
54.28	378.25	56.67	378	75.57	376.96	78.59	376.8	93.69	376
94.91	375.96	96.44	375.86	117.75	374.81	136.62	374	152.27	373.6
154.13	372.23	157.36	371.8	159.62	372.29	160.73	373.73	187.35	373.86
202.43	373.44	213.2	373.14	214.26	371.39	217.55	370.68	220.85	371.53
222.2	372.36	232.55	373.36	240.97	374.18	259.97	375.25	279.8	378.38
290.19	380	292.23	380.3	302.91	382	311	382.83	315.48	383.17
321.02	383.61	322.67	383.75	325.93	384	327.14	384.17	327.77	384.24
330.51	384.6	331.06	384.66	331.73	384.74	332.6	384.85	333.79	385.01
335.83	385.3	339.56	385.84	340.65	386	353.87	389.13	355.81	389.6
357.43	390	357.61	390.01	361.03	390.33	362.39	390.43	362.61	390.44
365.01	390.49	366.06	390.54	368.05	390.54	368.79	390.56	380.19	390.59
388.25	390.86								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.2	.04	232.55	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.2	232.55	124.46	126.53	128.02	.1	.3

Blocked Obstructions num= 1

```
   Sta L   Sta R    Elev
   333.6   364.1     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6766

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.56    7.75  380.34    9.62  380.18   11.59   380.1   27.69   379.6
   34.11  379.36   42.51  378.88   44.96  378.81   50.68   378.9   55.82  378.75
   59.91  378.59   69.06  378.34   72.96   378.1   76.53  377.98   77.17  377.98
   78.44  377.94   85.15  377.54  110.99  376.09  111.42     376  115.69  375.87
  158.02  374.36  160.91     374  186.61  372.66  212.26  373.01  237.02   373.1
  242.58  372.73  249.33  372.28  253.11  370.17   254.8  369.76  259.27  370.49
  262.36  373.11  274.27  374.24  274.29  374.25  278.85  374.68  293.57  375.12
  310.54  376.12  337.65     378   341.5  378.38  344.84  378.75  345.88  378.88
  348.32  378.95   351.5  379.16  353.85  379.26   354.2  379.31  358.69  379.46
  365.18  379.62  366.28  379.73  367.47     380  369.55   380.4  370.86  380.58
  373.19  381.02  375.37  381.31  379.99     382  390.01     384   392.8  384.16
   404.5  384.66  418.06  384.49  421.86   384.5  423.36  384.56  430.23  384.62
  434.86  384.68  447.58  385.29  449.06   385.3  453.71  385.19  463.39  384.68
  463.96  384.68  468.82  384.87  472.42  384.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  237.02     .04  262.36    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        237.02  262.36           103.31  103.53  104.46             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   367.4   402.8     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6663

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  387.81    5.71  387.58   42.61  386.42   45.32  386.36   48.81  386.32
   50.39  386.29   52.99  386.11   54.86     386   63.52     384    72.4     382
   77.53  381.09   78.45  381.02   81.39  381.16   82.73  381.16   83.84  381.06
   85.14  381.03   90.04   380.7   91.84  380.48   94.76     380  107.44  379.41
  109.18  379.29  112.44  379.13  115.99  378.92  130.42     378  130.89  377.95
  160.38  376.65  180.56  376.17  184.97  375.98  189.81  375.85  195.23  375.67
  199.49  375.58  206.72  375.37  221.58  374.58  234.91     374  259.85  373.17
  294.97  372.71  311.02  372.56  311.04  372.56  319.15  372.49  321.59  371.64
  322.41  371.16  323.12   369.4  326.04  369.26  336.33  370.36  339.84  373.35
  341.19  373.46  341.21  373.46  355.51  374.57  385.65  374.57  391.75     376
  435.14  377.35  436.73  377.48  438.03   377.5  441.59  377.71  445.02     378
  461.23     380  462.22  380.21  465.24  380.76  470.16  381.69  472.06     382
  479.53  383.54  481.93     384  486.28  384.27  488.32  384.35  505.54  384.31
  515.18  384.49  518.45  384.46   533.6  385.11  535.47  385.12  546.46  384.34
  548.83   384.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  319.15     .04  339.84    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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        319.15  339.84            90.58   94.53   97.72            .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    49.7    87.5     390   451.6   492.3     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6568

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  387.88   11.84  387.56   41.49  386.42    44.7  386.32   47.75  386.21
    48.2   386.2   51.49  386.19   52.85  386.15   53.93  386.14   56.03  386.06
   57.13     386    62.1  385.38   72.23  384.41   73.61  384.08      74     384
   78.37  383.37   81.15  382.86   83.41  382.52   85.95     382   87.39  381.89
   89.26  381.77  106.91  380.23  109.52  380.12  112.81     380  123.86  379.46
  127.28  379.12  128.69  379.02   131.4  378.74  133.26   378.6  138.52     378
  144.95  377.67  154.93   377.2  167.84  376.57  179.91     376  190.81  375.63
  206.03  375.07  215.11  374.75  231.43  374.02  231.55     374  251.99  373.42
  286.56  372.07  303.48     372   303.5     372  307.17  371.99  309.55  369.54
  314.39  368.65  318.89   369.1  320.63   372.7  333.89  373.01   335.3  373.05
  354.94  374.07     388  376.19  406.97     378  432.51     380  436.02  380.51
  440.79  381.03  449.38     382  453.12  382.55  464.72  383.92  465.61     384
  472.99  385.68  474.22     386  482.07  387.25  486.94     388  503.32     390
  506.03  390.12  516.08  390.61  558.49  391.41  562.74  391.48  574.89  391.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  307.17     .04  320.63    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        307.17  320.63           112.95  114.27  115.74             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    56.9      70     395     480   528.4     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6454

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.74    7.58  382.41   11.61  382.36   18.35  382.85   20.37  382.77
   21.37  382.79   29.92  382.63   32.76   382.6   39.52  382.39   47.69     382
   53.79  381.37   55.59  381.15   62.67     380   71.51  378.91   77.75     378
   80.09  377.84   81.89  377.87   84.21     378   85.66  378.04   91.88  378.33
   93.96  378.47  103.28  378.95  112.28  379.59  117.21  379.85  119.53     380
  122.79  380.14  126.31  380.18  133.22     380  134.81  379.84  137.81  379.45
  141.48  378.79  145.53     378  155.89     376  166.96  373.47  173.88  373.47
  191.09  372.71   200.3  371.97   201.3  371.89  212.37  370.12  213.27  368.43
  215.67   368.3  218.52  368.67  224.12  371.79  230.68  372.35  245.49   373.6
  269.36  373.99  286.75  373.99  309.85     374  325.09  374.82  342.86  375.85
  347.28  376.79   353.2     378   358.5  378.88  365.42  379.84  366.88     380
   374.5  381.38  377.36     382  383.44  382.65  394.15     384  397.08  384.34
   402.2  384.86  404.24  385.01  407.53   385.3  408.74  385.37  414.73   385.6
  419.68  385.94   428.4  386.28   432.3  386.26  436.12  386.41  452.71  387.66
  457.68     388   470.4  388.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   201.3     .04  224.12    .075
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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         201.3  224.12           102.69  103.78  104.74             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   120.4   125.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6350

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.25    2.84  383.98    4.85  383.88   29.21  382.05   29.42     382
   31.52  381.83   32.17   381.8   32.46  381.78   34.04  381.73   35.06  381.64
   53.47   380.4   61.23     380   61.52  379.95    62.6  379.83   66.18  379.72
   67.82  379.63   68.74  379.59  124.99     378  139.11  377.29  159.11  376.32
  161.58  376.22  169.81     376  175.65  375.83  176.25  375.83     201  374.61
  220.13  373.39  226.47  371.43  230.05  370.32  235.85   369.8  238.08  367.36
  241.57  366.97   246.9  368.37  249.25  372.63  256.57  374.75  266.03   377.5
  266.59     378  329.45     378  332.13  377.82  334.24  377.69  335.82  377.59
  339.75  377.35  347.23  377.86  349.56     378  359.53  377.16  360.29  377.08
  378.66     378  382.15  378.35  383.71  378.55  386.87  378.91  388.05  379.05
   394.9     380  395.88  380.18   400.2  380.85  405.44  381.69  407.44     382
  409.21  382.33  411.05   382.5  417.68  383.44  420.21  383.65  423.51  383.96
     426  384.23  427.13   384.2  428.56   384.3  433.67  384.73  437.93  385.11
  441.27  385.38  449.14  386.13  468.97     388

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  220.13     .04  249.25    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        220.13  249.25           52.33   53.78   55.24             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   264.6   271.9     390       F
   325.6   345.5     390       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   271.9   325.6     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6296

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  386.85    5.73  386.49   14.33     386   18.53  385.51   23.71  384.86
   25.79  384.56   29.31     384   30.39   383.8   37.57  382.43   39.51  382.02
   41.76  381.69   54.85     380   70.55   379.5   94.75  378.51   95.08  378.49
   95.41  378.49   98.12  378.36   99.34  378.31  103.26   378.2  106.66  378.14
  108.29  378.08  109.53  378.06  141.16  376.68  172.07   375.5  191.67  374.94
  202.55  371.87  209.11  370.03  214.77  369.87  215.93  367.68  217.55  367.41
  219.25  367.49  221.17     369   223.1  368.24  224.71   368.4  227.95  371.85
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
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  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.77  227.95            98.47   99.02   99.58             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 6250

INPUT
Description: Hearthstone Road
Distance from Upstream XS =      41
Deck/Roadway Width        =      30
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  109.53  378.06           126.2 378.165           148.4 377.583
   171.8 377.249           194.8 377.026           219.5 377.097
   242.2 377.664           267.9 378.981           291.3 380.656
   311.7 383.135           336.6 385.512          479.75     398

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  386.85    5.73  386.49   14.33     386   18.53  385.51   23.71  384.86
   25.79  384.56   29.31     384   30.39   383.8   37.57  382.43   39.51  382.02
   41.76  381.69   54.85     380   70.55   379.5   94.75  378.51   95.08  378.49
   95.41  378.49   98.12  378.36   99.34  378.31  103.26   378.2  106.66  378.14
  108.29  378.08  109.53  378.06  141.16  376.68  172.07   375.5  191.67  374.94
  202.55  371.87  209.11  370.03  214.77  369.87  215.93  367.68  217.55  367.41
  219.25  367.49  221.17     369   223.1  368.24  224.71   368.4  227.95  371.85
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        214.77  227.95             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395
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Downstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    93.6     378             109 378.165           131.9 377.583
   155.7 377.249           179.1 377.026           204.2 377.097
   227.3 377.664           253.6 378.981           277.3 380.656
   306.1 383.135           331.6 385.512          338.94     386

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.5    2.88  381.26     8.6  380.81   10.21   380.8   18.26  381.42
   23.64  381.72   28.86     382   31.26  382.04   31.91  382.04   38.99     382
   43.19   381.9    43.7  381.88   47.28  381.77   47.53  381.75   49.17   381.7
   49.49  381.68    51.7  381.59   53.73  381.49   76.26  380.56   76.87  380.53
   77.82  380.46   79.53  380.32   83.18     380   86.26  379.56   88.68  379.19
   90.12  378.97   98.61     378  127.05   376.5  131.06   376.5  161.92   376.1
  189.14  374.65  197.54  369.94  197.55  369.93  203.42  366.64  221.43  366.39
  225.24  370.02  227.55  372.22  227.56  372.23  229.54   374.1  255.33   377.5
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        197.54  225.24             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5     373       F
   229.3  443.14     373       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               24.8   62.23     .013     .013        0                   .5                1
Upstream   Elevation =  367.33
           Centerline Station =  217
Downstream Elevation =  367.76
           Centerline Station =  210

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
```

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	24.8	62.41	.013	.013	0	.5	1

Upstream Elevation = 367.28
Centerline Station = 223
Downstream Elevation = 366.19
Centerline Station = 215

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	101.08	Culv Full Len (ft)	26.10
# Barrels	1	Culv Vel US (ft/s)	8.04
Q Barrel (cfs)	101.08	Culv Vel DS (ft/s)	9.13
E.G. US. (ft)	373.14	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	373.02	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	371.11	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	371.05	Culv Exit Loss (ft)	1.24
Delta EG (ft)	2.03	Culv Entr Loss (ft)	0.50
Delta WS (ft)	1.96	Q Weir (cfs)	
E.G. IC (ft)	372.60	Weir Sta Lft (ft)	
E.G. OC (ft)	373.15	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	
Culv WS Outlet (ft)	371.05	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.05	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	167.07	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	13.29
Q Barrel (cfs)	167.07	Culv Vel DS (ft/s)	13.29
E.G. US. (ft)	376.90	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	376.86	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	372.04	Culv Frctn Ls (ft)	0.84
W.S. DS (ft)	371.94	Culv Exit Loss (ft)	2.65
Delta EG (ft)	4.86	Culv Entr Loss (ft)	1.37
Delta WS (ft)	4.92	Q Weir (cfs)	
E.G. IC (ft)	377.06	Weir Sta Lft (ft)	
E.G. OC (ft)	376.91	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	377.04

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	162.80	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.96
Q Barrel (cfs)	162.80	Culv Vel DS (ft/s)	12.96
E.G. US. (ft)	378.57	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	378.48	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	374.10	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	373.86	Culv Exit Loss (ft)	2.36
Delta EG (ft)	4.47	Culv Entr Loss (ft)	1.30
Delta WS (ft)	4.62	Q Weir (cfs)	446.27
E.G. IC (ft)	376.70	Weir Sta Lft (ft)	93.14
E.G. OC (ft)	378.57	Weir Sta Rgt (ft)	256.98
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	1.55
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	0.98

Culv Nml Depth (ft)		Weir Flow Area (sq ft)	160.62
Culv Crt Depth (ft)	3.69	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	151.96	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.09
Q Barrel (cfs)	151.96	Culv Vel DS (ft/s)	12.09
E.G. US. (ft)	379.41	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.18	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	375.83	Culv Frctn Ls (ft)	0.70
W.S. DS (ft)	375.30	Culv Exit Loss (ft)	1.74
Delta EG (ft)	3.58	Culv Entr Loss (ft)	1.14
Delta WS (ft)	3.88	Q Weir (cfs)	1086.91
E.G. IC (ft)	375.84	Weir Sta Lft (ft)	72.85
E.G. OC (ft)	379.41	Weir Sta Rgt (ft)	273.83
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.38
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.55
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	312.07
Culv Crt Depth (ft)	3.61	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	146.76	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.68
Q Barrel (cfs)	146.76	Culv Vel DS (ft/s)	11.68
E.G. US. (ft)	379.75	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.46	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.60	Culv Frctn Ls (ft)	0.65
W.S. DS (ft)	375.92	Culv Exit Loss (ft)	1.44
Delta EG (ft)	3.15	Culv Entr Loss (ft)	1.06
Delta WS (ft)	3.54	Q Weir (cfs)	1442.30
E.G. IC (ft)	375.45	Weir Sta Lft (ft)	62.46
E.G. OC (ft)	379.75	Weir Sta Rgt (ft)	278.75
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.73
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.78
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	385.41
Culv Crt Depth (ft)	3.57	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	144.18	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.47
Q Barrel (cfs)	144.18	Culv Vel DS (ft/s)	11.47
E.G. US. (ft)	380.05	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.71	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	377.14	Culv Frctn Ls (ft)	0.63
W.S. DS (ft)	376.34	Culv Exit Loss (ft)	1.24
Delta EG (ft)	2.91	Culv Entr Loss (ft)	1.02
Delta WS (ft)	3.37	Q Weir (cfs)	1713.14
E.G. IC (ft)	375.26	Weir Sta Lft (ft)	54.92
E.G. OC (ft)	380.03	Weir Sta Rgt (ft)	282.10
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.97
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.93
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	438.64
Culv Crt Depth (ft)	3.55	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	107.92	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	8.59
Q Barrel (cfs)	107.92	Culv Vel DS (ft/s)	8.59

E.G. US. (ft)	373.14	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	373.02	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	371.11	Culv Frctn Ls (ft)	0.35
W.S. DS (ft)	371.05	Culv Exit Loss (ft)	1.09
Delta EG (ft)	2.03	Culv Entr Loss (ft)	0.57
Delta WS (ft)	1.96	Q Weir (cfs)	
E.G. IC (ft)	372.86	Weir Sta Lft (ft)	
E.G. OC (ft)	373.13	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.14	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	166.93	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	13.28
Q Barrel (cfs)	166.93	Culv Vel DS (ft/s)	13.28
E.G. US. (ft)	376.90	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	376.86	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	372.04	Culv Frctn Ls (ft)	0.84
W.S. DS (ft)	371.94	Culv Exit Loss (ft)	2.65
Delta EG (ft)	4.86	Culv Entr Loss (ft)	1.37
Delta WS (ft)	4.92	Q Weir (cfs)	
E.G. IC (ft)	376.95	Weir Sta Lft (ft)	
E.G. OC (ft)	376.90	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	377.04

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	162.93	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.97
Q Barrel (cfs)	162.93	Culv Vel DS (ft/s)	12.97
E.G. US. (ft)	378.57	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.48	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	374.10	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	373.86	Culv Exit Loss (ft)	2.36
Delta EG (ft)	4.47	Culv Entr Loss (ft)	1.31
Delta WS (ft)	4.62	Q Weir (cfs)	446.27
E.G. IC (ft)	376.62	Weir Sta Lft (ft)	93.14
E.G. OC (ft)	378.58	Weir Sta Rgt (ft)	256.98
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	1.55
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	0.98
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	160.62
Culv Crt Depth (ft)	3.69	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	152.14	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.11
Q Barrel (cfs)	152.14	Culv Vel DS (ft/s)	12.11
E.G. US. (ft)	379.41	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.18	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	375.83	Culv Frctn Ls (ft)	0.70

W.S. DS (ft)	375.30	Culv Exit Loss (ft)	1.75
Delta EG (ft)	3.58	Culv Entr Loss (ft)	1.14
Delta WS (ft)	3.88	Q Weir (cfs)	1086.91
E.G. IC (ft)	375.76	Weir Sta Lft (ft)	72.85
E.G. OC (ft)	379.42	Weir Sta Rgt (ft)	273.83
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.38
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.55
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	312.07
Culv Crt Depth (ft)	3.61	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	146.95	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.69
Q Barrel (cfs)	146.95	Culv Vel DS (ft/s)	11.69
E.G. US. (ft)	379.75	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.46	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.60	Culv Frctn Ls (ft)	0.65
W.S. DS (ft)	375.92	Culv Exit Loss (ft)	1.44
Delta EG (ft)	3.15	Culv Entr Loss (ft)	1.06
Delta WS (ft)	3.54	Q Weir (cfs)	1442.30
E.G. IC (ft)	375.37	Weir Sta Lft (ft)	62.46
E.G. OC (ft)	379.76	Weir Sta Rgt (ft)	278.75
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.73
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.78
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	385.41
Culv Crt Depth (ft)	3.57	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	144.68	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.51
Q Barrel (cfs)	144.68	Culv Vel DS (ft/s)	11.51
E.G. US. (ft)	380.05	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.71	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	377.14	Culv Frctn Ls (ft)	0.63
W.S. DS (ft)	376.34	Culv Exit Loss (ft)	1.26
Delta EG (ft)	2.91	Culv Entr Loss (ft)	1.03
Delta WS (ft)	3.37	Q Weir (cfs)	1713.14
E.G. IC (ft)	375.20	Weir Sta Lft (ft)	54.92
E.G. OC (ft)	380.06	Weir Sta Rgt (ft)	282.10
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.97
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.93
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	438.64
Culv Crt Depth (ft)	3.55	Min El Weir Flow (ft)	377.04

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6197

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39

```
  225.24  370.02  227.55  372.22  227.56  372.23  229.54   374.1  255.33   377.5
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        197.54  225.24            75.78   74.81   73.83             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5     373       F
   229.3  443.14     373       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6122

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.69    8.11  379.53    9.53  379.45   17.27  379.23   20.32  379.02
   22.13  378.95    24.3  378.81   31.57  378.41   34.72  378.26   38.27  378.14
   47.27  377.96    49.2  377.94   52.81  377.79   56.11  377.88   60.11  377.91
   62.59  377.87   64.37  377.81   65.09  377.76   66.54   377.7   67.14  377.65
   68.62  377.58   71.62  377.27   75.62  376.99    79.3  376.57    81.7  376.35
   84.46     376  105.56  374.69  108.26  374.67  121.47  375.38  123.91   375.3
  125.19  375.41  127.48  375.55  129.74  375.66  131.98  375.57  134.89  375.74
  137.16  375.81  137.87  375.78  140.09  375.81  142.39  375.77  145.17  375.64
     148  375.41   151.1  375.05  154.75  374.52  159.06  373.88  159.11  374.24
   175.4  373.46  185.87  373.46  213.06  372.27  225.58  370.42  231.74  369.51
  232.66  367.04  234.89  366.62  240.64  367.46   244.1  370.65  253.02  370.54
  255.64  371.33  278.66  378.25  302.77  378.97  352.21     380   359.2  381.14
  364.26     382  367.65   382.7  370.16  383.19  373.86     384  378.45  385.21
  381.62     386  383.59  386.52  388.85     388  390.89  388.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  225.58     .04   244.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        225.58   244.1            98.18   94.21   91.92             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
   119.8   162.9     385       F
   185.6   201.5     385       F
   272.4   384.9     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   162.9   185.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6028
```

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.8	19.58	382.41	21.78	382.31	25.29	382	28.82	381.21
33.73	380	38.53	378.96	47.92	377.02	53.08	376	53.61	375.96
54.06	375.94	63.8	375.32	75.35	374.08	75.77	374	75.87	374
79.55	373.5	79.83	373.47	80.44	373.45	80.74	373.5	108.3	372.93
132.26	372.05	132.53	372	152.08	371	183.23	368.87	204.31	368.6
204.32	368.6	205.1	368.59	214.72	368.32	216.43	366.61	219.36	365.53
223.23	366.03	225.53	367.69	234.47	368.82	242.06	369.78	266.05	372.16
283.38	373.66	295.75	374.49	302.61	375.35	306.21	375.74	307.44	375.9
308.45	376	309.16	376.16	309.43	376.21	312.19	376.42	326.29	377.09
336.37	377.85	338.16	378	343.77	379.27	346.84	380	352.57	381.65
353.72	382	360.42	384	366.91	386	373.75	388	374.25	388.15
375.39	388.44	376.82	388.77	382.2	390	385.62	390.91	387.5	391.38
390.05	392	391.18	392.24	393.51	392.7	394.79	392.94	395.7	393.09
396.68	393.28	398.05	393.5	400.71	394	401.05	394.02	401.31	394.02
401.89	394.05	402.27	394.05	404.67	394.17				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	214.72	.04	234.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
214.72	234.47	100.93	101.91	101.19	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
61	113.9	390	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
19.7	61	390	393.1	404.67	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5926

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.59	5.1	382	9.3	381.27	15.23	380.26	16.79	380
17.4	379.93	17.99	379.89	25.61	379.19	28.72	378.92	41.87	378.06
42.14	378.04	42.69	378.01	42.8	378	47.15	377.66	50.35	377.44
52.95	377.29	54.78	377.18	55.85	377.13	57.24	377.07	58.56	376.99
61.22	376.9	62.6	376.8	64.49	376.66	65.4	376.61	68.93	376.32
69.43	376.28	72.62	376	79.17	375.23	79.85	375.13	81.75	374.86
86.54	374.13	86.9	374.08	87.35	374	97.43	372.6	101.22	372
101.71	371.98	102.49	371.97	103.31	371.98	103.65	372	103.7	371.95
108.23	371.29	120.13	371.02	124.98	371.02	148.13	370.3	170.6	369.08
174.12	367.61	175.06	367.22	180.45	367.62	186.44	367.24	187.3	365.38
189.41	365.46	192.74	365.89	197.28	368.62	204.41	369.15	222.38	370.47
248.76	371.19	255	372	274.29	373.9	275.14	374	287.23	376
292.49	377.34	295.11	378	299.87	379.19	303.25	380	311.49	382
318.69	383.66	320.08	384	327.45	385.84	328.11	386	335.19	387.48
337.59	388	343.86	388.94	350.88	390	354.59	390.61	356.8	390.96

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.44	.04	197.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.44	197.28	102.11	102.54	102.93	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
60.6	75.4	385	F

```
   103.4   163.4     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    75.4   103.4     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5824

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.17    1.53  379.09    3.56  378.96    5.73   378.8    8.65  378.57
   10.86   378.4   11.67  378.34   15.69     378   20.08  377.29   27.83     376
   29.81  375.82   31.38  375.67   39.63  374.92   42.87  374.63   44.59   374.5
   49.91     374   62.23  371.55   92.34  370.63  109.26   369.2  110.94  369.06
  120.72  365.29  124.37  365.08  126.51  365.24  130.92  367.14  139.51  368.75
  157.36   372.1  180.06  370.47  190.05  370.47  216.33     372  219.38  372.57
  223.55  373.34  225.27  373.66  227.19     374  231.58  375.26  234.22     376
  234.79  376.18  240.58     378  243.82  379.15  246.06     380  248.42  380.86
  251.63     382  257.95  383.86   258.4     384  260.44   384.5  266.77     386
  268.22  386.33  275.61     388  278.96   388.7   285.3     390  291.48  391.05
  292.67  391.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  109.26     .04  139.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        109.26  139.51            75.62   79.21   82.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5745

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     380    15.5  378.48   20.71     378    30.8  377.15   37.79  376.64
    40.3  376.44   46.11  376.04   46.38     376    47.1  375.96   69.11     374
    77.1  373.47  103.89  370.86  131.17   369.6  133.12  368.74  140.37  365.55
  143.61     365  144.73  363.71  148.48  363.03  150.47  363.33   159.4  368.15
  163.52  368.56  176.34  369.82  186.31   370.3  194.64  373.03  209.12  373.26
  225.27  372.55   225.6  372.55  225.92  372.54  226.18  372.55   226.7  372.55
   233.5  372.96   233.9  372.98  234.19     373  234.39     373  234.53  373.01
  234.67  373.01  234.83  373.02  242.93  373.56  243.64  373.58  246.98  373.68
  250.97   373.8  257.66     374  263.52  375.65  264.76     376  265.45  376.19
  271.67     378     272  378.09  278.61     380  283.25  381.15  286.54     382
  296.07  383.94  296.19  383.96  296.34     384  296.53  384.04  296.57  384.04
  296.61  384.05  296.75  384.07  297.08  384.12   302.2  384.91  306.31  385.41
  307.97  385.64  308.53  385.72  311.26     386  312.97  386.11  313.27  386.13
   317.7  386.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  131.17     .04   159.4    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        131.17   159.4            34.07   34.02   34.04             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   170.3   207.9     385       F
   225.8   247.8     385       F
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Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   207.9   225.8     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5711

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.06  162.62            96.24   96.18   98.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5650

INPUT
Description: Brookemede Road
Distance from Upstream XS =      37
Deck/Roadway Width        =      37
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     101 372.301             151 370.157             188 369.953
   218.7 370.181

Upstream Bridge Cross Section Data
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
```

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  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        136.06  162.62             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  128.33  372.41           152.3 372.301           202.9 370.157
   238.6 369.953           268.9 370.181

Downstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  375.09    1.07  375.04    1.94  375.04    2.62  375.01    3.78  375.02
       5  374.95    6.16  374.97   13.83   374.5   15.25  374.52   31.31  375.33
   32.18  375.35   39.66   374.3   45.41  373.86   50.93  373.59   53.48  373.55
   59.91  373.31    62.6  373.32   81.57  373.51   85.54  373.44   92.18  373.21
   98.33  373.03  102.35  373.09  105.39  372.98  113.27  372.64  128.33  372.41
  164.68   369.2  190.47  367.33  202.12  366.92  205.34  366.81  210.08   364.6
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        205.34   238.7             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8   367.8       F
     239   440.9   367.8       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
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```
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  361.93
           Centerline Station =  148
Downstream Elevation =  362.09
           Centerline Station =  215

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  362.32
           Centerline Station =  153
Downstream Elevation =  362.32
           Centerline Station =  220

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        104.78    Culv Full Len (ft)         62.66
  # Barrels                      1    Culv Vel US (ft/s)          8.34
  Q Barrel (cfs)            104.78    Culv Vel DS (ft/s)          8.34
  E.G. US. (ft)             368.67    Culv Inv El Up (ft)       361.93
  W.S. US. (ft)             368.60    Culv Inv El Dn (ft)       362.09
  E.G. DS (ft)              366.80    Culv Frctn Ls (ft)          0.33
  W.S. DS (ft)              366.73    Culv Exit Loss (ft)         1.01
  Delta EG (ft)               1.87    Culv Entr Loss (ft)         0.54
  Delta WS (ft)               1.87    Q Weir (cfs)
  E.G. IC (ft)              367.38    Weir Sta Lft (ft)
  E.G. OC (ft)              368.68    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        365.93    Weir Max Depth (ft)
  Culv WS Outlet (ft)       366.09    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         3.10    Min El Weir Flow (ft)     369.97


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        127.72    Culv Full Len (ft)         62.66
  # Barrels                      1    Culv Vel US (ft/s)         10.16
  Q Barrel (cfs)            127.72    Culv Vel DS (ft/s)         10.16
  E.G. US. (ft)             370.86    Culv Inv El Up (ft)       361.93
  W.S. US. (ft)             370.81    Culv Inv El Dn (ft)       362.09
  E.G. DS (ft)              368.05    Culv Frctn Ls (ft)          0.50
  W.S. DS (ft)              367.96    Culv Exit Loss (ft)         1.51
  Delta EG (ft)               2.81    Culv Entr Loss (ft)         0.80
  Delta WS (ft)               2.84    Q Weir (cfs)               78.80
  E.G. IC (ft)              368.73    Weir Sta Lft (ft)         134.72
  E.G. OC (ft)              370.87    Weir Sta Rgt (ft)         191.40
  Culvert Control           Outlet    Weir Submerg                0.00
  Culv WS Inlet (ft)        365.93    Weir Max Depth (ft)         0.90
  Culv WS Outlet (ft)       366.09    Weir Avg Depth (ft)         0.64
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)     36.36
  Culv Crt Depth (ft)         3.39    Min El Weir Flow (ft)     369.97


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         59.65    Culv Full Len (ft)         62.66
  # Barrels                      1    Culv Vel US (ft/s)          4.75
  Q Barrel (cfs)             59.65    Culv Vel DS (ft/s)          4.75
  E.G. US. (ft)             372.54    Culv Inv El Up (ft)       361.93
  W.S. US. (ft)             372.40    Culv Inv El Dn (ft)       362.09
  E.G. DS (ft)              371.98    Culv Frctn Ls (ft)          0.11
  W.S. DS (ft)              371.92    Culv Exit Loss (ft)         0.30
```

Delta EG (ft)	0.56	Culv Entr Loss (ft)	0.18
Delta WS (ft)	0.47	Q Weir (cfs)	654.10
E.G. IC (ft)	365.44	Weir Sta Lft (ft)	88.51
E.G. OC (ft)	372.56	Weir Sta Rgt (ft)	253.86
Culvert Control	Outlet	Weir Submerg	0.63
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	2.59
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.26
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	192.32
Culv Crt Depth (ft)	2.33	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	55.94	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.45
Q Barrel (cfs)	55.94	Culv Vel DS (ft/s)	4.45
E.G. US. (ft)	373.36	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.03	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	372.93	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.82	Culv Exit Loss (ft)	0.19
Delta EG (ft)	0.43	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.21	Q Weir (cfs)	1280.46
E.G. IC (ft)	365.30	Weir Sta Lft (ft)	74.11
E.G. OC (ft)	373.37	Weir Sta Rgt (ft)	257.82
Culvert Control	Outlet	Weir Submerg	0.74
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.41
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.81
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	332.49
Culv Crt Depth (ft)	2.25	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	54.56	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.34
Q Barrel (cfs)	54.56	Culv Vel DS (ft/s)	4.34
E.G. US. (ft)	373.73	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.28	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.36	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.22	Culv Exit Loss (ft)	0.15
Delta EG (ft)	0.37	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.06	Q Weir (cfs)	1628.11
E.G. IC (ft)	365.24	Weir Sta Lft (ft)	68.27
E.G. OC (ft)	373.75	Weir Sta Rgt (ft)	259.60
Culvert Control	Outlet	Weir Submerg	0.78
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.78
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	2.10
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	401.57
Culv Crt Depth (ft)	2.22	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	58.16	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.63
Q Barrel (cfs)	58.16	Culv Vel DS (ft/s)	4.63
E.G. US. (ft)	373.96	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.40	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.55	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	373.37	Culv Exit Loss (ft)	0.16
Delta EG (ft)	0.41	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.03	Q Weir (cfs)	1886.97
E.G. IC (ft)	365.38	Weir Sta Lft (ft)	64.52
E.G. OC (ft)	373.98	Weir Sta Rgt (ft)	260.74
Culvert Control	Outlet	Weir Submerg	0.76
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	4.02
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	2.28
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	447.49
Culv Crt Depth (ft)	2.30	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	104.22	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	8.29
Q Barrel (cfs)	104.22	Culv Vel DS (ft/s)	8.29
E.G. US. (ft)	368.67	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	368.60	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	366.80	Culv Frctn Ls (ft)	0.33
W.S. DS (ft)	366.73	Culv Exit Loss (ft)	0.99
Delta EG (ft)	1.87	Culv Entr Loss (ft)	0.53
Delta WS (ft)	1.87	Q Weir (cfs)	
E.G. IC (ft)	367.74	Weir Sta Lft (ft)	
E.G. OC (ft)	368.66	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.09	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	127.48	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	10.14
Q Barrel (cfs)	127.48	Culv Vel DS (ft/s)	10.14
E.G. US. (ft)	370.86	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	370.81	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	368.05	Culv Frctn Ls (ft)	0.49
W.S. DS (ft)	367.96	Culv Exit Loss (ft)	1.51
Delta EG (ft)	2.81	Culv Entr Loss (ft)	0.80
Delta WS (ft)	2.84	Q Weir (cfs)	78.80
E.G. IC (ft)	369.10	Weir Sta Lft (ft)	134.72
E.G. OC (ft)	370.86	Weir Sta Rgt (ft)	191.40
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	0.90
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	0.64
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	36.36
Culv Crt Depth (ft)	3.38	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	58.24	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.63
Q Barrel (cfs)	58.24	Culv Vel DS (ft/s)	4.63
E.G. US. (ft)	372.54	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.40	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	371.98	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	371.92	Culv Exit Loss (ft)	0.28
Delta EG (ft)	0.56	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.47	Q Weir (cfs)	654.10
E.G. IC (ft)	365.77	Weir Sta Lft (ft)	88.51
E.G. OC (ft)	372.53	Weir Sta Rgt (ft)	253.86
Culvert Control	Outlet	Weir Submerg	0.63
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	2.59
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.26
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	192.32
Culv Crt Depth (ft)	2.30	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	54.61	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.35
Q Barrel (cfs)	54.61	Culv Vel DS (ft/s)	4.35
E.G. US. (ft)	373.36	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.03	Culv Inv El Dn (ft)	362.32

E.G. DS (ft)	372.93	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	372.82	Culv Exit Loss (ft)	0.18
Delta EG (ft)	0.43	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.21	Q Weir (cfs)	1280.46
E.G. IC (ft)	365.63	Weir Sta Lft (ft)	74.11
E.G. OC (ft)	373.35	Weir Sta Rgt (ft)	257.82
Culvert Control	Outlet	Weir Submerg	0.74
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.41
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.81
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	332.49
Culv Crt Depth (ft)	2.22	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	53.33	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.24
Q Barrel (cfs)	53.33	Culv Vel DS (ft/s)	4.24
E.G. US. (ft)	373.73	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.28	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.36	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.22	Culv Exit Loss (ft)	0.14
Delta EG (ft)	0.37	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.06	Q Weir (cfs)	1628.11
E.G. IC (ft)	365.58	Weir Sta Lft (ft)	68.27
E.G. OC (ft)	373.72	Weir Sta Rgt (ft)	259.60
Culvert Control	Outlet	Weir Submerg	0.78
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.78
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	2.10
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	401.57
Culv Crt Depth (ft)	2.19	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	56.88	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.53
Q Barrel (cfs)	56.88	Culv Vel DS (ft/s)	4.53
E.G. US. (ft)	373.96	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.40	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.55	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	373.37	Culv Exit Loss (ft)	0.14
Delta EG (ft)	0.41	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.03	Q Weir (cfs)	1886.97
E.G. IC (ft)	365.72	Weir Sta Lft (ft)	64.52
E.G. OC (ft)	373.95	Weir Sta Rgt (ft)	260.74
Culvert Control	Outlet	Weir Submerg	0.76
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	4.02
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	2.28
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	447.49
Culv Crt Depth (ft)	2.27	Min El Weir Flow (ft)	369.97

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5614

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	375.09	1.07	375.04	1.94	375.04	2.62	375.01	3.78	375.02
5	374.95	6.16	374.97	13.83	374.5	15.25	374.52	31.31	375.33
32.18	375.35	39.66	374.3	45.41	373.86	50.93	373.59	53.48	373.55
59.91	373.31	62.6	373.32	81.57	373.51	85.54	373.44	92.18	373.21
98.33	373.03	102.35	373.09	105.39	372.98	113.27	372.64	128.33	372.41
164.68	369.2	190.47	367.33	202.12	366.92	205.34	366.81	210.08	364.6

```
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        205.34   238.7            60.47   54.67   45.26             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8   367.8       F
     239   440.9   367.8       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5560

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.71   12.44  380.66   20.28  380.48   30.01  380.06   32.55     380
   35.14   379.9   40.44  379.76    66.9  378.85   77.73  378.19    86.8  377.53
  106.28     376   135.5     374  137.27  373.83  145.55  373.21  146.86  373.14
  152.29  373.03  158.19  372.73  169.54  372.53  171.14  372.42   174.7     372
  177.92  371.83  200.19  370.97  216.51  371.11  224.54  370.88  233.81  370.74
  237.26  370.65  249.92     370  272.36   369.5  305.11  368.25  330.75   367.7
  351.63  367.26  351.64  367.26   352.8  367.24  361.62  364.64  365.14  363.68
  366.63  362.08  370.12  362.09  377.69  362.11   381.2  366.86  381.86  366.92
  381.88  366.92  400.75   368.4  415.84  369.84  428.22  370.13  441.48  370.08
  454.62  370.47  468.56  371.58  474.03  371.79  478.41     372  486.49  373.21
   492.4     374   496.8  374.72  506.14     376  510.13  376.65  519.35     378
  525.84  378.52   527.4  378.56  530.32  378.74  538.47  379.03  541.22  379.02
  541.91  379.05   543.2  379.02  545.47  379.17  545.81  379.17  552.05  379.68
   557.2  380.19  563.37  380.95  569.96     382  577.27     384   584.9     386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   352.8     .04   381.2    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         352.8   381.2            56.62   49.74    41.3             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5510

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
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   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        251.67  273.96            36.56   36.42   38.18             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 5500

INPUT
Description: Driveway
Distance from Upstream XS =    8.75
Deck/Roadway Width        =    11.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     245     368           246.3 368.296           251.7 369.922 368.922
   261.7 369.925 368.925   272.1 369.867 368.867   278.5 368.291
     281   367.8

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        251.67  273.96             .3       .5
Ineffective Flow     num=       4
```

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   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  218.37  367.75           222.9 368.709           228.8 369.891 368.891
   238.9 369.925 368.925     248 369.959 368.959   254.6 368.591
  256.61  368.13

Downstream Bridge Cross Section Data
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.2    5.49  380.43   19.15  378.55   22.99     378   24.44  377.87
    27.6  377.66   28.15  377.66   32.08  377.85   34.11  377.81   34.84  377.86
   36.16  377.76    36.5  377.71   36.95   377.6   37.24  377.63   37.53  377.55
   43.71  377.04   44.96  377.01   53.85  377.19   61.96  376.88   69.36  376.67
    78.2  376.53   80.32  376.46   85.59  376.16   86.54  376.08   87.13     376
   96.16     374  106.12     372  115.26     370  135.49  369.25  142.97   369.5
  155.72     370  160.13  369.38  160.65  369.34  161.19  369.38  161.22  369.44
  161.24  368.96  165.72  368.71  205.57  368.19  226.91  367.45  227.84  367.41
  239.06  361.76  241.96   361.6  245.76  361.52  251.97  367.85  256.98  368.15
  272.47  369.07  292.37  370.16  313.15  370.81  318.99   371.3  321.33   371.4
  339.22  371.96  340.43     372  349.15  373.24   355.3     374  368.27  375.86
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        227.84  251.97             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
```

Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	366.59	Element		
W.S. US. (ft)	366.24	E.G. Elev (ft)	366.53	366.39
Q Total (cfs)	209.00	W.S. Elev (ft)	366.15	366.19
Q Bridge (cfs)	209.00	Crit W.S. (ft)	365.16	364.18
Q Weir (cfs)		Max Chl Dpth (ft)	3.99	4.67
Weir Sta Lft (ft)		Vel Total (ft/s)	4.93	3.59
Weir Sta Rgt (ft)		Flow Area (sq ft)	42.38	58.16
Weir Submerg		Froude # Chl	0.44	0.29
Weir Max Depth (ft)		Specif Force (cu ft)	97.18	137.00
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.53	3.28
Min El Prs (ft)	368.93	W.P. Total (ft)	19.54	22.16
Delta EG (ft)	0.24	Conv. Total (cfs)	2638.0	4110.8
Delta WS (ft)	0.08	Top Width (ft)	16.73	17.76
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	4.93	C & E Loss (ft)	0.09	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.85	0.42
BR Sel Method	Energy only	Power Total (lb/ft s)	4.19	1.52

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	367.87	Element		
W.S. US. (ft)	367.51	E.G. Elev (ft)	367.82	367.70
Q Total (cfs)	334.00	W.S. Elev (ft)	367.41	367.44
Q Bridge (cfs)	334.00	Crit W.S. (ft)	365.90	364.95
Q Weir (cfs)		Max Chl Dpth (ft)	5.25	5.92
Weir Sta Lft (ft)		Vel Total (ft/s)	5.13	4.09
Weir Sta Rgt (ft)		Flow Area (sq ft)	65.12	81.62
Weir Submerg		Froude # Chl	0.39	0.30
Weir Max Depth (ft)		Specif Force (cu ft)	185.69	243.21
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.36	4.25
Min El Prs (ft)	368.93	W.P. Total (ft)	23.77	25.56
Delta EG (ft)	0.23	Conv. Total (cfs)	4736.7	6574.8
Delta WS (ft)	0.09	Top Width (ft)	19.41	19.21
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	5.13	C & E Loss (ft)	0.07	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.85	0.51
BR Sel Method	Energy only	Power Total (lb/ft s)	4.36	2.11

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	371.94	Element		
W.S. US. (ft)	371.85	E.G. Elev (ft)	371.91	371.89
Q Total (cfs)	772.00	W.S. Elev (ft)	371.86	371.85
Q Bridge (cfs)	221.58	Crit W.S. (ft)	367.76	366.88
Q Weir (cfs)		Max Chl Dpth (ft)	9.70	10.33
Weir Sta Lft (ft)		Vel Total (ft/s)	1.58	1.48
Weir Sta Rgt (ft)		Flow Area (sq ft)	487.81	522.69
Weir Submerg		Froude # Chl	0.10	0.09

Weir Max Depth (ft)		Specif Force (cu ft)	1075.51	1238.41
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.62	2.70
Min El Prs (ft)	368.93	W.P. Total (ft)	234.91	249.21
Delta EG (ft)	0.07	Conv. Total (cfs)	19619.4	21869.5
Delta WS (ft)	0.05	Top Width (ft)	238.59	193.32
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.01
BR Open Vel (ft/s)	2.32	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.20	0.16
BR Sel Method	Energy only	Power Total (lb/ft s)	0.32	0.24

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.85	Element		
W.S. US. (ft)	372.68	E.G. Elev (ft)	372.79	372.77
Q Total (cfs)	1391.00	W.S. Elev (ft)	372.71	372.69
Q Bridge (cfs)	264.37	Crit W.S. (ft)	370.43	370.14
Q Weir (cfs)		Max Chl Dpth (ft)	10.55	11.17
Weir Sta Lft (ft)		Vel Total (ft/s)	2.13	2.01
Weir Sta Rgt (ft)		Flow Area (sq ft)	653.95	693.04
Weir Submerg		Froude # Chl	0.13	0.12
Weir Max Depth (ft)		Specif Force (cu ft)	1616.80	1805.22
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.25	3.34
Min El Prs (ft)	368.93	W.P. Total (ft)	250.17	264.90
Delta EG (ft)	0.12	Conv. Total (cfs)	29471.3	31996.3
Delta WS (ft)	0.11	Top Width (ft)	253.73	207.19
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.02
BR Open Vel (ft/s)	2.77	C & E Loss (ft)	0.00	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.36	0.31
BR Sel Method	Energy only	Power Total (lb/ft s)	0.77	0.62

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.26	Element		
W.S. US. (ft)	373.05	E.G. Elev (ft)	373.19	373.16
Q Total (cfs)	1736.00	W.S. Elev (ft)	373.09	373.06
Q Bridge (cfs)	280.16	Crit W.S. (ft)	370.75	370.45
Q Weir (cfs)		Max Chl Dpth (ft)	10.93	11.54
Weir Sta Lft (ft)		Vel Total (ft/s)	2.37	2.25
Weir Sta Rgt (ft)		Flow Area (sq ft)	731.02	771.47
Weir Submerg		Froude # Chl	0.14	0.13
Weir Max Depth (ft)		Specif Force (cu ft)	1915.29	2115.47
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.54	3.64
Min El Prs (ft)	368.93	W.P. Total (ft)	255.54	270.21

Delta EG (ft)	0.15	Conv. Total (cfs)	34564.8	37184.5
Delta WS (ft)	0.14	Top Width (ft)	259.05	211.69
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.03	0.02
BR Open Vel (ft/s)	2.93	C & E Loss (ft)	0.00	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.45	0.39
BR Sel Method	Energy only	Power Total (lb/ft s)	1.07	0.87

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	373.42	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	373.17	E.G. Elev (ft)	373.42	373.39
Q Total (cfs)	2002.00	W.S. Elev (ft)	373.17	373.16
Q Bridge (cfs)	315.60	Crit W.S. (ft)	370.92	370.68
Q Weir (cfs)	1686.40	Max Chl Dpth (ft)	11.01	11.64
Weir Sta Lft (ft)	121.33	Vel Total (ft/s)	2.50	2.36
Weir Sta Rgt (ft)	385.81	Flow Area (sq ft)	800.92	848.10
Weir Submerg	0.98	Froude # Chl	0.15	0.14
Weir Max Depth (ft)	5.56	Specif Force (cu ft)	2013.28	2226.50
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.85	3.99
Min El Prs (ft)	368.93	W.P. Total (ft)	256.78	271.53
Delta EG (ft)	0.03	Conv. Total (cfs)		
Delta WS (ft)	0.01	Top Width (ft)	260.28	212.81
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	3.30	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5474

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87

```
    27.6  377.66   28.15  377.66   32.08  377.85   34.11  377.81   34.84  377.86
   36.16  377.76    36.5  377.71   36.95   377.6   37.24  377.63   37.53  377.55
   43.71  377.04   44.96  377.01   53.85  377.19   61.96  376.88   69.36  376.67
    78.2  376.53   80.32  376.46   85.59  376.16   86.54  376.08   87.13     376
   96.16     374  106.12     372  115.26     370  135.49  369.25  142.97   369.5
  155.72     370  160.13  369.38  160.65  369.34  161.19  369.38  161.22  369.44
  161.24  368.96  165.72  368.71  205.57  368.19  226.91  367.45  227.84  367.41
  239.06  361.76  241.96   361.6  245.76  361.52  251.97  367.85  256.98  368.15
  272.47  369.07  292.37  370.16  313.15  370.81  318.99   371.3  321.33   371.4
  339.22  371.96  340.43     372  349.15  373.24   355.3     374  368.27  375.86
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        227.84  251.97             54.4   54.86   54.94             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5419

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.86    3.78  380.71    4.98  380.68    6.09  380.65   17.15  380.11
   18.16     380   18.96  379.91   19.28  379.88   19.92  379.82   26.66  379.12
   33.04  378.58   34.43  378.44   39.87     378   40.43  377.97    45.3  377.68
   47.96  377.57   55.03  377.19   58.61  377.04   63.94  376.76   68.35  376.51
   75.42  376.11   77.27     376   79.39   375.6   88.74     374   95.93  372.25
  103.06  370.55  105.38     370  106.52  369.95   124.3  369.13  143.21  368.92
  147.73  368.65  154.71  368.29  193.74  367.43  212.87  367.11  212.89  367.11
   213.8   367.1  221.32  362.36  228.08  361.46  230.72  362.15  234.51  367.15
  243.11  367.53  243.13  367.53  255.89   368.1  273.39  369.09  289.93  371.07
  313.65  371.93  314.49  371.98   314.7     372  316.49  372.27  319.14  372.61
  322.78  373.12  328.35  373.78  330.34  374.01  330.63  374.04  333.66   374.3
   334.1  374.33  334.72  374.39  338.27  374.58  342.52   374.8  344.74  375.07
   346.7  375.32  347.32  375.37  350.65  375.82  350.83  375.84  351.12  375.87
  351.94     376  361.89     378  362.32  378.12   369.2     380   375.4     382
  381.54     384  387.14     386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   213.8     .04  234.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         213.8  234.51            93.04   95.36   97.65             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    25.8     385       F
   161.5   202.4     385       F

CROSS SECTION
```

RIVER: Plumtree
REACH: Plumtree RS: 5323

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.88	33.33	380.11	40.06	380	44.89	379.5	59	378
67.02	377.3	71.41	376.93	82.12	376	85.17	375.72	86.89	375.57
104.57	374	104.96	373.94	105.28	373.89	109.01	373.33	110.74	373.08
113.95	372.58	116.4	372.26	118.47	372	119.44	371.89	121.49	371.67
125.25	371.29	126.03	371.19	132.92	370	135.4	369.51	137.55	369.08
143.39	368.87	152.17	368.34	189.23	365.45	207.94	365.88	213.15	366
215.76	361.32	219.54	361.54	222.99	361.95	225.61	363.08	227.85	363.55
233.11	366.26	238	366.82	242.41	367.33	259.77	368.53	278.63	371.43
280.36	372	318.89	376	320.12	376.01	321.57	376.05	349.64	377.86
349.73	377.86	349.8	377.87	351.93	378	359.87	379.62	362.53	380
367.1	381.08	369.42	381.61	370.97	382	374.97	382.95	379.47	384
383.38	384.6	383.92	384.68						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.15	.04	233.11	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.15	233.11	116.69	114.31	111.9	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	28.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5209

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.03	.15	378.03	1.95	378	2.36	377.96	6.29	377.85
16.45	377.5	32.34	376.94	33.33	376.83	33.48	376.82	33.68	376.79
33.96	376.77	34.79	376.69	35.57	376.61	36.06	376.58	36.71	376.52
37.31	376.46	37.67	376.43	38.36	376.39	38.61	376.37	39.48	376.31
42.48	376.17	42.92	376.13	45.71	376	45.73	376	49.13	375.52
50	375.39	51.69	375.13	54.05	374.76	55.37	374.56	56.81	374.32
58.6	374	58.66	374	59.06	373.96	84.53	372.91	98.55	372.35
98.82	372.33	99.63	372.28	103.93	372.02	104.29	372	104.3	372
106.14	371.66	116.08	370.04	116.42	370	139.5	368.78	180.51	365.75
201.11	365.1	209.66	364.83	212.88	361.1	216.14	361.11	219.68	361.44
225.21	365.18	231.24	365.5	231.26	365.5	242.79	366.12	270.5	369.12
274.64	369.12	323.97	372.18	340.57	374.96	340.58	375.25	340.59	375.28
344.72	375.7	345.37	375.76	347.71	376	348.59	376.15		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.66	.04	225.21	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.66	225.21	111.42	101.59	91.47	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
298.8	301.6	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	22.5	380	270.4	298.8	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5107

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.01	.24	376	7.07	375.83	9.07	375.73	10.81	375.67
14.62	375.53	15.38	375.51	17.77	375.4	18.91	375.37	34.75	374.53
41.77	374.45	50.79	374.46	55.85	374.46	57.09	374.44	66.02	374.11
71.3	374	75.88	373.97	100.91	373.67	129.38	373.15	147.16	372.84
170.03	372.61	172.25	372.56	172.92	372.55	178.44	372.44	185.81	372.3
200.51	372.07	201.43	371.98	201.7	371.98	202.67	371.92	215.72	371.52
224.6	371.21	235.57	370.77	237.04	370.74	250.15	370.35	252.81	370.32
253.08	370.31	263.87	370.17	266.55	370.18	267.52	370.19	268.58	370.13
278.39	370.23	284.41	370.28	291.18	370.38	294.8	370.34	311.68	370.28
315.54	370.35	315.75	370.35	322.33	370.22	323.94	370.21	332.11	370.09
355.05	371.1	364.88	371.1	382.36	369.28	393.14	367.95	393.15	367.95
397.41	367.43	406.55	360.36	409.03	359.92	412.88	360.59	414.63	362.95
416.03	363.17	422.1	365.13	424.57	365.29	439.58	366.25	464.4	370.03
475.81	370.03	507.28	370.74	534.67	372.32	549.02	374.66	549.03	374.92
549.05	374.92	551.62	375.01	559.75	376	561.38	376.32		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	397.41	.04	422.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.41	422.1	67.29	67.07	66.86	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
295.8	317.3	380	F
445.9	465.3	380	F
474.6	515.9	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
317.3	364.3	380	465.3	474.6	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5040

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78
60.84	374.76	65.24	374.68	66.8	374.67	69.29	374.63	82.36	374.74
84.96	374.72	94.2	374.58	98.84	374.02	99.09	374	100.29	373.97
104.65	373.88	105.56	373.85	106.59	373.78	109.92	373.71	111.01	373.7
130.98	373.7	135.97	373.62	165.62	372.83	166.72	372.81	174.13	372.86
190.11	373	193.32	373	195.48	372.98	206.16	372.44	206.59	372.42
208.47	372.4	218.24	372.4	219.79	372.28	225.13	372	226.38	371.95
226.58	371.93	245.52	371.43	256.75	371.11	261.14	370.99	264.15	370.9
269.51	370.76	283.05	370.32	296.66	370.06	300.29	370	307.5	369.97
310.36	369.98	336.01	370.03	366.23	369.58	397.63	368.96	412.55	368.2
412.96	367.93	415.6	366.107	424.49	359.97	427.96	359.23	429.97	359.61
432.2	361.31	434.59	361.8	443.41	365.9	443.42	365.91	448.7	368.36
463.33	369.65	490.22	370.98	518.26	372.76	527.06	373.76	535.03	374
548.23	375.55	551.99	376	559.22	376.93	568.7	378	584.52	379.08

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	415.6	.04	443.41	.075

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         415.6  443.41           104.82   108.2  107.53             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5000

INPUT
Description: Longview Drive
Distance from Upstream XS =      38
Deck/Roadway Width        =      27
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     122     374             231     372           346.8 370.217
   363.6 369.987           384.5  369.89             390 370.049
   400.6 370.192           404.7 370.096           417.9 370.146
   433.4  370.53           456.1 371.384           479.9   372.4
   523.7     374           556.9     376

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     376    3.61  375.88   21.39  374.91   24.35   374.9   39.18  375.08
   42.63  375.04   47.14   374.9   52.43  374.83    54.6  374.82   57.34  374.78
   60.84  374.76   65.24  374.68    66.8  374.67   69.29  374.63   82.36  374.74
   84.96  374.72    94.2  374.58   98.84  374.02   99.09     374  100.29  373.97
  104.65  373.88  105.56  373.85  106.59  373.78  109.92  373.71  111.01   373.7
  130.98   373.7  135.97  373.62  165.62  372.83  166.72  372.81  174.13  372.86
  190.11     373  193.32     373  195.48  372.98  206.16  372.44  206.59  372.42
  208.47   372.4  218.24   372.4  219.79  372.28  225.13     372  226.38  371.95
  226.58  371.93  245.52  371.43  256.75  371.11  261.14  370.99  264.15   370.9
  269.51  370.76  283.05  370.32  296.66  370.06  300.29     370   307.5  369.97
  310.36  369.98  336.01  370.03  366.23  369.58  397.63  368.96  412.55   368.2
  412.96  367.93   415.6 366.107  424.49  359.97  427.96  359.23  429.97  359.61
   432.2  361.31  434.59   361.8  443.41   365.9  443.42  365.91   448.7  368.36
  463.33  369.65  490.22  370.98  518.26  372.76  527.06  373.76  535.03     374
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         415.6  443.41             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

Downstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  375.75             124     374           270.8     372
   386.7 370.217           403.6 369.987           424.4  369.89
   429.9 370.049           440.5 370.192           444.4 370.096
   457.6 370.146           473.1  370.53           495.7 371.384
   519.5   372.4           561.3     374           594.1     376

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
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      0  381.34    1.15  381.36    5.15  381.18    6.14   381.2    7.86  381.16
  10.94  381.18   23.92     381   30.33  380.86   45.55  380.35   51.93  380.07
  65.77   379.6   68.46  379.68   70.71  379.61   75.04  379.33   80.36  379.11
 107.04  378.79  117.65  378.45  125.92     378  132.09  376.99  138.71     376
 142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
 164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
 181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
 210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
  248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
 296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
 405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
 444.02  363.09  449.76  359.84  461.09  359.04  468.33 363.925  475.48  368.75
 476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
 568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
 588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
 633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        442.94  468.33             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442  370.15       F
   476.1  633.02  370.15       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   68.79     .024     .024        0                  .5                1
Upstream   Elevation =  359.44
           Centerline Station =  425
Downstream Elevation =  359.83
           Centerline Station =  450

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   70.81     .024     .024        0                  .5                1
Upstream   Elevation =  359.39
           Centerline Station =  432
Downstream Elevation =  359.74
           Centerline Station =  457

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        103.93    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          5.34
  Q Barrel (cfs)            103.93    Culv Vel DS (ft/s)          6.76
  E.G. US. (ft)             363.86    Culv Inv El Up (ft)       359.44
  W.S. US. (ft)             363.54    Culv Inv El Dn (ft)       359.83
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E.G. DS (ft)	362.82	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	362.56	Culv Exit Loss (ft)	0.45
Delta EG (ft)	1.05	Culv Entr Loss (ft)	0.22
Delta WS (ft)	0.99	Q Weir (cfs)	
E.G. IC (ft)	362.92	Weir Sta Lft (ft)	
E.G. OC (ft)	363.87	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.20	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.56	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.13	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	167.07	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	8.38
Q Barrel (cfs)	167.07	Culv Vel DS (ft/s)	8.38
E.G. US. (ft)	366.79	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	366.68	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	364.37	Culv Frctn Ls (ft)	0.99
W.S. DS (ft)	364.15	Culv Exit Loss (ft)	0.87
Delta EG (ft)	2.42	Culv Entr Loss (ft)	0.55
Delta WS (ft)	2.52	Q Weir (cfs)	
E.G. IC (ft)	364.87	Weir Sta Lft (ft)	
E.G. OC (ft)	366.78	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.80	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	50.18	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.52
Q Barrel (cfs)	50.18	Culv Vel DS (ft/s)	2.52
E.G. US. (ft)	371.73	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	371.67	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	371.56	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	371.50	Culv Exit Loss (ft)	0.04
Delta EG (ft)	0.18	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.18	Q Weir (cfs)	671.50
E.G. IC (ft)	361.55	Weir Sta Lft (ft)	248.15
E.G. OC (ft)	371.73	Weir Sta Rgt (ft)	464.34
Culvert Control	Outlet	Weir Submerg	0.80
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	1.85
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.09
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	235.43
Culv Crt Depth (ft)	1.40	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	40.78	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.05
Q Barrel (cfs)	40.78	Culv Vel DS (ft/s)	2.05
E.G. US. (ft)	372.44	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.30	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.34	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.20	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.10	Q Weir (cfs)	1309.35
E.G. IC (ft)	361.28	Weir Sta Lft (ft)	207.36
E.G. OC (ft)	372.43	Weir Sta Rgt (ft)	480.83
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.54
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.48

Culv Nml Depth (ft)		Weir Flow Area (sq ft)	405.83
Culv Crt Depth (ft)	1.23	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	40.26	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.02
Q Barrel (cfs)	40.26	Culv Vel DS (ft/s)	2.02
E.G. US. (ft)	372.73	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.53	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.64	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.44	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.09	Q Weir (cfs)	1655.38
E.G. IC (ft)	361.27	Weir Sta Lft (ft)	200.59
E.G. OC (ft)	372.73	Weir Sta Rgt (ft)	488.70
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.83
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.69
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	486.73
Culv Crt Depth (ft)	1.22	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	29.49	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	1.48
Q Barrel (cfs)	29.49	Culv Vel DS (ft/s)	1.48
E.G. US. (ft)	372.93	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.70	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.88	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	372.64	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.05	Culv Entr Loss (ft)	0.02
Delta WS (ft)	0.06	Q Weir (cfs)	1942.96
E.G. IC (ft)	360.95	Weir Sta Lft (ft)	178.86
E.G. OC (ft)	372.93	Weir Sta Rgt (ft)	495.14
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	3.07
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	555.90
Culv Crt Depth (ft)	1.05	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	105.07	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.38
Q Barrel (cfs)	105.07	Culv Vel DS (ft/s)	6.64
E.G. US. (ft)	363.86	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	363.54	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	362.82	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	362.56	Culv Exit Loss (ft)	0.42
Delta EG (ft)	1.05	Culv Entr Loss (ft)	0.23
Delta WS (ft)	0.99	Q Weir (cfs)	
E.G. IC (ft)	362.90	Weir Sta Lft (ft)	
E.G. OC (ft)	363.86	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.18	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.56	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.14	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	166.93	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	8.38
Q Barrel (cfs)	166.93	Culv Vel DS (ft/s)	8.38

E.G. US. (ft)	366.79	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	366.68	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	364.37	Culv Frctn Ls (ft)	1.02
W.S. DS (ft)	364.15	Culv Exit Loss (ft)	0.87
Delta EG (ft)	2.42	Culv Entr Loss (ft)	0.55
Delta WS (ft)	2.52	Q Weir (cfs)	
E.G. IC (ft)	364.82	Weir Sta Lft (ft)	
E.G. OC (ft)	366.80	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.80	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	50.32	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.52
Q Barrel (cfs)	50.32	Culv Vel DS (ft/s)	2.52
E.G. US. (ft)	371.73	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	371.67	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	371.56	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	371.50	Culv Exit Loss (ft)	0.04
Delta EG (ft)	0.18	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.18	Q Weir (cfs)	671.50
E.G. IC (ft)	361.50	Weir Sta Lft (ft)	248.15
E.G. OC (ft)	371.74	Weir Sta Rgt (ft)	464.34
Culvert Control	Outlet	Weir Submerg	0.80
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	1.85
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.09
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	235.43
Culv Crt Depth (ft)	1.40	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	40.88	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.05
Q Barrel (cfs)	40.88	Culv Vel DS (ft/s)	2.05
E.G. US. (ft)	372.44	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.30	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.34	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.20	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.10	Q Weir (cfs)	1309.35
E.G. IC (ft)	361.23	Weir Sta Lft (ft)	207.36
E.G. OC (ft)	372.44	Weir Sta Rgt (ft)	480.83
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.54
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.48
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	405.83
Culv Crt Depth (ft)	1.23	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	40.36	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.02
Q Barrel (cfs)	40.36	Culv Vel DS (ft/s)	2.02
E.G. US. (ft)	372.73	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.53	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.64	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.44	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.09	Q Weir (cfs)	1655.38
E.G. IC (ft)	361.22	Weir Sta Lft (ft)	200.59
E.G. OC (ft)	372.73	Weir Sta Rgt (ft)	488.70
Culvert Control	Outlet	Weir Submerg	0.86

Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.83
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.69
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	486.73
Culv Crt Depth (ft)	1.22	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	29.56	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	1.48
Q Barrel (cfs)	29.56	Culv Vel DS (ft/s)	1.48
E.G. US. (ft)	372.93	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.70	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.88	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	372.64	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.05	Culv Entr Loss (ft)	0.02
Delta WS (ft)	0.06	Q Weir (cfs)	1942.96
E.G. IC (ft)	360.90	Weir Sta Lft (ft)	178.86
E.G. OC (ft)	372.93	Weir Sta Rgt (ft)	495.14
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	3.07
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	555.90
Culv Crt Depth (ft)	1.05	Min El Weir Flow (ft)	370.12

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4932

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.34	1.15	381.36	5.15	381.18	6.14	381.2	7.86	381.16
10.94	381.18	23.92	381	30.33	380.86	45.55	380.35	51.93	380.07
65.77	379.6	68.46	379.68	70.71	379.61	75.04	379.33	80.36	379.11
107.04	378.79	117.65	378.45	125.92	378	132.09	376.99	138.71	376
142.75	375.74	145.13	375.77	151.41	375.65	152.99	375.6	162.62	375.4
164.08	375.33	165.89	375.33	172.24	375.73	177.38	376	177.63	376.05
181.27	376.17	185.16	376.34	192.75	376.58	200.87	376.58	208.17	376.57
210.94	376.5	239.9	376	245.1	375.7	245.52	375.7	248.29	375.54
248.6	375.54	250.31	375.45	256.27	375.5	262.18	375.3	281.18	374
296.71	372.3	299.71	372	320.36	371.86	345.94	370.82	375.13	370.26
405.43	368.96	424.73	368.62	429.83	363.66	442.94	363.7	444	363.1
444.02	363.09	449.76	359.84	461.09	359.04	468.33	363.925	475.48	368.75
476.07	368.78	476.1	368.79	501.36	370.51	527.01	371.18	549.43	374
568.87	375.7	572.79	376	583.63	376.6	584.84	376.64	587.35	376.78
588.79	376.83	590.9	376.94	610.8	377.12	614.03	377.22	619.02	377.46
633.02	378.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	442.94	.04	468.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
442.94	468.33	86.54	87.15	87.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	442	370.15	F
476.1	633.02	370.15	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4845

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.58	4.55	380.55	6.68	380.49	9.66	380.28	16.63	379.98
26.33	379.81	62.1	378.84	98.92	378	99.32	377.89	136.94	376
143	375.91	149.44	376	152.28	376.1	156.17	376.13	191.4	376.8
203.32	376.79	209.98	376.63	238.93	376.59	244.45	376.21	250.81	376
261.25	374.62	275.77	372	281.64	371.31	290.21	370.67	304.89	369.51
331.41	367.13	348.83	364.14	380.45	364.27	402.65	363.64	402.68	363.64
406.34	363.53	414.27	358.13	417.64	357.81	425.27	358.61	432.32	365.43
433.19	365.53	433.22	365.53	453.71	367.76	474.07	367.76	485.62	368
502.49	370	503.75	370.14	505.06	370.4	505.48	370.53	507.56	370.13
509	370	513.04	370	518.39	370.19	521.7	370.19	524.91	370.37
537.92	371.65	541.22	371.89	542.32	372.1	545.8	372.19	575.74	373.74
577.08	373.86	599.27	377.01	605.31	377.77	608.04	378.01	611.15	378.12
614.15	378.14	616.12	378.1	621.88	378.21	625.35	378.34	639.16	379.09
657.61	380	661.97	380.57	669.23	381.67	678.71	383.47		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	406.34	.04	433.22	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.34	433.22	89.54	100.49	110.66	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336.4	363.2	385	F
550.5	618	385	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
127.8	235.6	385	296.1	336.4	385	454	504.5	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4745

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.11	21.9	380.04	28.76	379.88	34.3	379.51	43.1	379.86
53.28	379.9	56.58	379.78	62.04	379.32	72.76	379.37	82.93	379.28
86.47	379.41	92.14	379.33	95.69	379.17	109.62	379.08	135.12	378.66
137.45	378.48	167.42	378.8	171.95	378.72	192.21	378	200.65	377.24
235.54	377.01	241.83	376.74	253.23	377.1	255.58	376.97	271.08	376.62
275.97	376.65	279.99	377.08	282.06	377.08	293.56	376.33	300.79	376.13
316.78	375.92	330.78	375.45	339.87	375.04	353.65	374	362.03	373.25
376.22	371.8	398.14	369.91	398.19	368.67	441.73	364.73	471.43	362.82
491.34	362.87	497.92	361.09	497.93	361.09	503.16	359.68	507.05	359.79
508.57	357.67	513.05	357.45	516.27	357.67	524	363.35	528.02	363.37
528.05	363.37	543.42	363.45	576.59	363.78	580.38	364	587.66	364.1
599.83	364.36	607.95	364.42	639.8	366	660.86	367.5	675.48	368.86
685.51	370	701.05	372.18	718.22	373.29	725.55	373.48	731.12	374.02
748.44	374.98	752.53	375.3	765.7	375.87	778.37	376.85	791.24	378
806.37	380	808.13	380.31	815.79	381.16	824.93	382	831.66	382.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	491.34	.04	524	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
491.34	524	111.08	108.67	106.25	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4636

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.34	6.89	380.72	8.14	380.72	21.8	379.64	39.34	378
67.85	376	132.49	373.43	147.33	374	162.25	376	169.4	376.34
178.16	375.89	185.65	375.64	200.34	375.76	233.4	375.68	239.11	375.36
249.5	375.34	251.25	375.42	257.5	375.35	267.44	374.96	277.67	374.75
315.27	374.57	318.08	374.63	344.76	374	355.8	372	365.77	370
409.43	368	426.89	366.86	461.95	364.11	477.5	361.95	477.88	361.7
477.89	361.69	483.5	357.91	493.33	357.61	499.07	357.85	502.3	362.25
508.59	362.41	508.61	362.41	524.4	362.83	556.76	362.64	588.33	363.03
609.48	362.74	620.82	363.21	643.23	363.52	650.91	363.84	673.28	365.16
690.67	365.89	697.4	365.96	767.85	369.67	776.5	370	791.17	370.91
827.59	374	829.12	374.06	835.04	374	840.77	373.45	865.39	370
874.22	368	886.48	367.07	898.7	368	908.05	370	921.08	372
930.79	374	936.24	376	940.95	378	945.37	380	961.95	388
966.25	390	970.84	392	976.29	394	984.5	396		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	477.5	.04	502.3	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
477.5	502.3	90.09	85.72	81.01	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
829.12	930.96	374.06	T

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
12.5	47.6	385	159.7	233.5	385	289.2	333.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4550

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.61	5.72	380	14.44	379.53	24.98	379.26	49.94	378
51.11	377.81	52.48	377.77	57.27	377.13	65.46	377.09	83.13	376.44
115.32	376.53	129.27	376.2	134.89	375.7	161.6	375.1	180.09	374.38
184.24	374	192.05	373.05	194.36	373.3	203.06	373.7	213.23	373.33
227.71	372.43	230.87	372.39	241.61	372.73	250.77	372.75	269.45	372.53
285.09	372.56	296.76	372.27	299.73	372.12	301.56	372.12	324.23	373.13
352.74	371.54	360.77	370.69	406.27	367.82	421.84	366.98	442.28	366.44
468.82	365.41	485.45	363.53	487.5	362.45	487.54	362.43	497.34	357.27
502.26	357.24	507.29	357.62	517.01	361.85	517.99	361.92	518.04	361.92
534.2	362.95	563.73	363.2	593.31	362.98	614.08	362.38	634.37	362.55
654.16	363.24	660.04	363.19	685.91	363.78	696.84	364.73	723.22	364.95
742.94	365.93	815.68	370.67	842.59	372	866.09	374.13	871.35	374.51
874.28	374.54	906.93	376.44	924.53	378	932.06	378.21	947.24	379.65
949.47	379.69	952.48	379.61	972.07	380.62	978.55	380.78	985.97	381.67
993.29	382.35	1003.09	382.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	487.5	.04	517.99	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
487.5	517.99	205.67	206.54	206.28	.3	.5

Ineffective Flow num= 3

```
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 4400

INPUT
Description: US 40
Distance from Upstream XS =      53
Deck/Roadway Width        =     104
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     5.8     380              83     378             165     376
     237     374             324     372             391 371.588
     429 371.157           463.7 370.927           490.9 370.876
   527.4 371.004           560.1 371.263           596.7  371.72
     644     372             732     374             786     376
     860     378             928     380             999     382

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         487.5  517.99             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

Downstream  Deck/Roadway Coordinates
    num=      11
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      13     378              97     376             158     374
   290.3 372.244             328  371.79           354.7 371.615
   387.1 371.555           419.8  371.62           453.4 371.896
   491.3 372.287             600     374

Downstream Bridge Cross Section Data
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.39     3.9  379.26    7.14  379.08    8.79  379.03   11.22  378.89
```

```
   14.53  378.78   17.41  378.61   25.86  378.28    32.7   378.1   37.64  377.91
   47.11  377.39    52.1  377.51   58.99  377.54   77.62  377.45   88.21  377.23
   92.02  377.21   95.64  377.34  113.55  377.38  122.03     377  137.03  376.62
  138.43  376.63   139.9  376.54  142.13  376.29  145.36     376  158.31  375.76
  187.11  374.72  198.02   374.5  200.77  374.48  208.31  374.54   212.2  374.51
   224.1     374  231.63  372.98   244.2   372.1  267.66  371.03  274.63  370.67
  284.57     370  294.75  364.77  310.72  364.84   317.5  367.36  326.34  364.31
  347.85  362.45  366.55  361.42  369.78  361.24  371.99  357.69   373.8  356.67
  379.51  351.69   381.6     352  394.25  354.75  396.69  357.39  399.49  360.42
  420.27  362.04  443.45   362.5  460.82  363.19  487.61     366  491.52  366.47
  492.41  366.52  501.31  366.41  508.11  366.82  510.99  366.89  511.84  366.96
  518.45  367.09  530.63  367.88  531.82     368  543.84     370  556.98     372
  567.14  372.99  573.69  373.54  580.03     374  596.09  374.78  599.01  375.01
   603.8  375.23  612.54     376  624.11  376.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  369.78     .04  399.49    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        369.78  399.49             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     369   361.7       F
     400  624.11   361.7       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                32   136.5     .013     .013        0                   .3                1
Upstream   Elevation =  357.575
           Centerline Station =  502.25
Downstream Elevation =  357.07
           Centerline Station =  382

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        209.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          9.44
  Q Barrel (cfs)            209.00    Culv Vel DS (ft/s)          9.59
  E.G. US. (ft)             362.14    Culv Inv El Up (ft)       357.58
  W.S. US. (ft)             362.06    Culv Inv El Dn (ft)       357.07
  E.G. DS (ft)              359.47    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              359.43    Culv Exit Loss (ft)         1.75
  Delta EG (ft)               2.67    Culv Entr Loss (ft)         0.42
  Delta WS (ft)               2.63    Q Weir (cfs)
  E.G. IC (ft)              362.02    Weir Sta Lft (ft)
  E.G. OC (ft)              362.14    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        360.34    Weir Max Depth (ft)
  Culv WS Outlet (ft)       359.79    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.72    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.77    Min El Weir Flow (ft)     371.57
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
Warning: During the supercritical analysis, the program could not converge on a supercritical answer in the downstream cross
section. The program used the solution with the least error.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	334.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.89
Q Barrel (cfs)	334.00	Culv Vel DS (ft/s)	11.03
E.G. US. (ft)	363.99	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	363.92	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	360.31	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	360.24	Culv Exit Loss (ft)	2.44
Delta EG (ft)	3.68	Culv Entr Loss (ft)	0.74
Delta WS (ft)	3.68	Q Weir (cfs)	
E.G. IC (ft)	363.99	Weir Sta Lft (ft)	
E.G. OC (ft)	363.80	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	361.41	Weir Max Depth (ft)	
Culv WS Outlet (ft)	360.85	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.84	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.78	Min El Weir Flow (ft)	371.57

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	761.07	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	19.03
Q Barrel (cfs)	761.07	Culv Vel DS (ft/s)	19.03
E.G. US. (ft)	371.52	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	371.51	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	362.04	Culv Frctn Ls (ft)	2.13
W.S. DS (ft)	361.83	Culv Exit Loss (ft)	5.66
Delta EG (ft)	9.48	Culv Entr Loss (ft)	1.69
Delta WS (ft)	9.69	Q Weir (cfs)	133.33
E.G. IC (ft)	371.51	Weir Sta Lft (ft)	397.43
E.G. OC (ft)	371.52	Weir Sta Rgt (ft)	580.29
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	0.64
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.41
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	74.76
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Warning: During subcritical analysis, while trying to calculate culvert and weir flow, the program could not get a balance of
energy within the specified tolerance and number of trials. The program used the solution with the minimum error.
Warning: During the culvert inlet control computations, the program could not balance the culvert/weir flow. The reported
inlet energy grade answer may not be valid.
Warning: During the culvert outlet control computations, the program could not balance the culvert/weir flow. The reported
outlet energy grade answer may not be valid.
Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet

equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	749.29	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.73
Q Barrel (cfs)	749.29	Culv Vel DS (ft/s)	18.73
E.G. US. (ft)	372.25	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.24	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	363.51	Culv Frctn Ls (ft)	2.07
W.S. DS (ft)	363.09	Culv Exit Loss (ft)	5.03
Delta EG (ft)	8.73	Culv Entr Loss (ft)	1.64
Delta WS (ft)	9.15	Q Weir (cfs)	641.71
E.G. IC (ft)	372.26	Weir Sta Lft (ft)	340.88
E.G. OC (ft)	372.25	Weir Sta Rgt (ft)	652.87
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.33
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.81
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	253.24
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	735.95	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.40
Q Barrel (cfs)	735.95	Culv Vel DS (ft/s)	18.40
E.G. US. (ft)	372.50	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.50	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	364.18	Culv Frctn Ls (ft)	1.99
W.S. DS (ft)	363.67	Culv Exit Loss (ft)	4.75
Delta EG (ft)	8.32	Culv Entr Loss (ft)	1.58
Delta WS (ft)	8.82	Q Weir (cfs)	1000.05
E.G. IC (ft)	372.57	Weir Sta Lft (ft)	335.40
E.G. OC (ft)	372.50	Weir Sta Rgt (ft)	666.31
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.63
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	1.06
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	351.41
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	718.90	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	17.97
Q Barrel (cfs)	718.90	Culv Vel DS (ft/s)	17.97
E.G. US. (ft)	372.72	Culv Inv El Up (ft)	357.58

W.S. US. (ft)	372.71	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	364.80	Culv Frctn Ls (ft)	1.90
W.S. DS (ft)	364.29	Culv Exit Loss (ft)	4.51
Delta EG (ft)	7.92	Culv Entr Loss (ft)	1.51
Delta WS (ft)	8.42	Q Weir (cfs)	1285.50
E.G. IC (ft)	372.73	Weir Sta Lft (ft)	331.64
E.G. OC (ft)	372.72	Weir Sta Rgt (ft)	675.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.84
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	1.23
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	422.21
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4344

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01
603.8	375.23	612.54	376	624.11	376.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	369.78	.04	399.49	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

369.78	399.49	54.24	54.2	54.21	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	369	361.7	F
400	624.11	361.7	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4289

INPUT
Description:

Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.16	4.18	376.93	6.02	376.92	13.94	376.67	20.26	376.2
24.9	376.18	33.24	377.06	38.69	377.12	40.04	377.22	48.07	377.42
60.83	377.6	66.6	377.54	72.7	377.21	85.85	376	95.14	375.32
109.02	374.79	111.75	374.73	114.36	374.6	120.7	374.51	138.66	374
141.06	373.73	149.42	372.56	154.25	372	161.5	371.27	163.79	371.11
170.81	370	173.81	369.84	195.17	369.42	204.6	369.46	213.04	369.62
222.3	370	223.43	370.15	226.4	370.41	227.06	370.31	236.85	369.39
247.27	369.56	249.28	369.5	253.56	369.2	259.27	368.95	271.49	368
281.02	366	283.53	365.58	284.63	365.72	287.61	365.54	294.16	364
296.04	363.42	300.15	363.15	323.16	361.6	346.64	361.49	362.78	361.62
366.58	358.56	372.42	353.86	381.79	352.78	389.78	353.42	392.45	357.73
395.52	357.99	397.76	358.89	397.77	358.9	401.82	360.54	427.65	361.5
461.12	362.68	474.19	364	499.06	364.89	510.36	365.54	512.25	365.53
519.79	366	531.35	367.23	537.87	368	549.98	370	574.53	371.66
580.97	371.69	592.69	371.17	604.52	371.32				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	362.78	.04	401.82	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
362.78	401.82	104.83	104.42	103.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4185

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.48	9.2	369.89	11.88	369.82	17.34	369.84	34.57	369.3
53.84	368.42	59.13	368.23	62.34	368.17	68.09	368.17	70.92	368.38
76.7	368.52	81.21	368.71	88.53	369.21	100.23	369.08	113.03	368.39
118.84	368.28	119.85	368.31	124.69	368.28	130.99	368.32	143.69	368.07
174.23	367.24	184.05	366.87	189.65	366.83	193.83	366.87	199.74	366.51
200.31	366.52	202.71	366.37	206.47	366	222.83	365.23	229.16	365.1
237.63	364.59	245.34	364	270.04	362.83	279.56	362.32	284.22	362
317.36	360.81	352.39	360.17	380.43	360.08	403.96	360.43	405.79	359.32
407.94	358.02	410.35	357.61	417	355.97	420.8	354.77	430.79	360.87
435.8	361.06	435.83	361.06	448.07	361.52	480.45	361.7	518.27	363.36
531.33	364	532.88	364.19	543.89	364.64	551.51	365.01	553.39	365.05
557.04	365.2	562.67	365.52	565.16	365.53	571.76	365.76	589.17	365.65
601.4	365.75	611.19	365.7	613.71	365.74	619.92	366	625.24	366.72
632.9	367.41	636.14	367.76	639.39	368	644.27	368.63	644.65	368.64
646.39	368.9	647.36	368.89	650.3	369.29				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	403.96	.04	430.79	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
403.96	430.79	151.73	151.97	152.24	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4033

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	371.31	6.28	371.09	10.1	370.82	11.41	370.78	13.41	370.65

```
   16.07  370.59   24.34  370.14   26.91  370.09   30.53  370.19   38.94   370.2
   41.71  370.32   43.77  370.21   45.82     370   47.56  369.91   61.47  368.93
   64.73  368.91   74.46  369.43   84.71   369.4   87.19  369.59   93.43  369.89
   94.09  369.89    96.1     370   98.42   370.2  102.15  370.38  104.17   370.4
  106.65  370.37   110.1   370.2  112.15     370  115.71  369.82  128.08  369.81
  137.68   369.7  151.03  369.46  154.18  369.16  164.93  368.77  175.08  368.49
  185.11   368.1  190.59  367.77   192.4  367.74   209.8  366.53  222.55  365.72
  229.81  365.17  231.09  365.15  237.47  365.25  254.65  364.85  274.84     362
  281.46  361.45  311.04  360.26  324.61  359.69  324.63  359.69  327.57  359.56
  332.63  355.53   339.8  355.05  344.88  355.72  350.28  359.03  354.96  359.02
  354.99  359.02  368.82  358.97  388.87  359.13  402.39  358.88  463.03     360
  463.46  360.12   468.3  360.75  482.77     362  495.13  362.44  501.53  362.51
  509.75   362.5  519.32  362.16  523.42  362.13  524.98     362  532.66  361.82
  536.09  361.79  548.11  361.82  551.96     362   557.9  362.44  583.12   363.9
  596.37  364.95

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  327.57     .04  350.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        327.57  350.28            105.3  103.27  101.24             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3930

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  373.25    5.62  373.04   18.75  372.65   20.05  372.56   51.89  373.28
   67.22  372.62   75.52  372.21   81.21     372   82.89   371.8   83.35  371.81
  100.65  370.82  104.09  370.51  109.16     370   119.9  369.24   121.3  369.19
  125.83  369.28  143.55  369.25   145.3  369.37  145.92  369.31  149.12  369.58
  149.56  369.54  151.28  369.67  155.23  369.78  159.52  369.77  162.64  369.66
  165.16   369.5  170.48     369  173.88  368.53  174.87  368.43  177.64     368
  179.57  367.59  182.98  366.78  185.85     366  189.84  365.01  193.24     364
  205.26  362.99  232.35  361.15  264.16  359.45  274.41  358.31  274.42  358.31
  280.37  357.65  286.95  354.74  289.44  354.49  294.11  355.34  299.09  358.68
  305.18  358.74  305.19  358.74  321.51  358.88  353.18  358.92  436.87     360
  449.41     362  451.92  362.47  457.66  363.46  461.04     364  466.97  364.48
  469.66  364.48   474.3  364.61  476.21  364.58  476.86  364.61  477.78  364.59
  488.71  364.64  490.27  364.68  512.72  365.88  514.21     366  532.64     368
  542.86     370  544.26  370.23   546.1  370.43  549.88  370.48  552.59  370.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  280.37     .04  299.09    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.37  299.09           112.01  113.72  114.59             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
     176   200.4     375       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   163.1     176     375

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3816

INPUT
Description:
```

Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	374.86	10.9	374	35.12	372	42.05	371.48	47.58	371.12
58.88	370.34	59.53	370.34	78.46	370.9	81.56	371.04	85.42	370.91
91.5	370.8	96.65	370.74	108.4	370.09	110.41	370	112.14	369.8
112.78	369.76	116.9	369.37	121.06	369	125.02	368.8	128.66	368.54
132.43	368.4	135.47	368.11	138.27	368.07	140.86	368.14	143.7	368.03
150.81	367.6	154.5	367.24	157.37	366.85	163.04	366	174.59	362.82
217.65	358.92	236.4	357.65	236.42	357.65	237.46	357.58	243.76	354.29
251.5	353.5	252.56	353.49	255.1	356.69	266.5	357.28	266.52	357.28
271.38	357.54	301.23	358.52	327.76	358.95	350.57	360	371.84	361.19
386.87	362	399.91	363.11	404.12	363.54	410.91	364.18	416.03	364.61
421.73	365	428.74	365.37	429.75	365.39	438.84	365.39	440.51	365.38
443.31	365.3	444.17	365.29	449.76	365.05	455.01	364.86	460.03	365.2
465.28	365.49	469.1	365.73	472.03	365.86	472.64	365.86	474.82	366.04
496.26	366.8	498.97	366.85	515.31	366.69	518.73	366.8	522.16	366.85
525.33	367.02	526.96	367.04	534.8	367.32	549.03	368	554.32	368.52

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	237.46	.04	255.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
237.46	255.1	128.5	127.87	127.21	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
173.5	186.9	375	F
373.3	445.4	375	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
142.2	173.5	375

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3688

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	367.19	12.07	367.61	20.74	367.88	33.44	368.3	35.81	368.34
36.91	368.35	38.51	368.3	41.9	368.05	42.34	368	46.49	367.62
57.82	366.07	58.06	366	58.98	365.89	59.73	365.86	61.35	365.74
62.76	365.59	63.36	365.54	64.65	365.39	65.31	365.33	65.53	365.3
68.14	364.99	69.06	364.94	77.78	365.17	78.29	365.12	78.87	365.13
79.51	365.14	81.34	364.92	81.98	364.92	82.64	364.91	84.22	364.72
85.27	364.68	87.32	364.44	87.96	364.4	91.82	364	92.71	363.94
94.56	363.8	107.05	361.62	112.03	361.62	156.44	357.41	156.46	357.41
166.74	356.43	170.56	353.16	171.46	352.86	179.43	353.24	182.46	356.86
186.46	357	186.47	357.01	203.22	357.63	227.7	358.5	256.67	360
261.88	360.34	264.57	360.54	271.14	360.98	283.16	361.89	284.48	362
293.32	363.31	295.65	363.6	300.63	364.22	302.93	364.48	304.51	364.65
310.25	365.25	317.77	366.05	320.57	366.39	321.8	366.52	324.49	366.86
328.15	367.23	329.94	367.46	331.84	367.65	332.96	367.78	334.64	368
343.14	368.38	353.94	368.67						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	166.74	.04	182.46	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
166.74	182.46	137.67	137.99	138.3	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
72.5	108.3	370	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev

```
   309.8   338.6     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3550

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.59   21.83     366   22.15  365.93   22.36  365.91   22.65  365.88
   24.81  365.75   34.15  365.49   36.08  365.41   36.47  365.41   56.33  364.39
   62.74  364.35   64.54  364.35   78.24  364.86   78.82  364.87   80.11   364.9
   92.13  365.45   95.39  365.49   97.19  365.52   98.79  365.54  111.29  364.66
  113.06  364.51  113.63  364.52  115.75  364.34  116.17  364.34  118.14  364.18
  118.26  364.18  120.55     364  125.47  363.66  128.06  363.49  130.87  363.32
  133.62  363.17  137.86  362.93  141.25  362.78  142.84  362.67  144.42  362.54
  144.88  362.52  147.11   362.3   147.6  362.27  150.07     362  168.07  360.18
  202.08  358.28  222.67  356.22  222.69  356.22  229.29  355.55  231.57  353.11
  237.67  352.85  241.52  353.14  245.66  357.02   252.8  357.45  270.01   358.5
  299.86  361.08  320.94  363.87  322.12  363.98  326.43  364.47  335.31     366
  338.09  366.52  340.43  367.05  344.77     368  352.58  368.68  357.63  369.11
  363.94  369.54  366.26  369.71  370.89     370  376.06  370.55  378.66  370.84
  385.91   371.5  387.76   371.7  391.56     372  393.08  372.13  393.26  372.12
  394.51   372.2  396.42  372.27  400.73  372.39  401.46  372.38

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  222.67     .04  245.66    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        222.67  245.66           121.58  121.96  122.09             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     132   172.9     370       F
   358.4  401.46     375       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3428

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.25     .08  366.25     .21  366.24    2.49  366.31    5.55  366.33
     6.5  366.31    6.69   366.3    6.85  366.29    6.95  366.28    7.02  366.27
    7.07  366.26    7.09  366.26    7.37  366.14     7.5  366.11    7.73  366.11
    7.81     366   17.71  365.88   17.76  365.88   35.41  362.54   54.26  359.25
   71.12  356.77   71.14  356.77   72.75  356.53   82.67  355.38    85.4  352.15
   86.22  352.06   88.74  351.86   91.45  352.09   93.89  352.39   98.94  357.17
  101.38  357.43  121.79  359.59   156.9  362.39  164.18  363.89  164.43  364.14
  168.22  363.93  172.23  363.84   172.9  363.86     176  363.96   177.1     364
  178.13   364.1  190.23  365.12  198.83  365.85  199.59  365.91  200.67     366
   208.9  367.19  214.54     368  221.01  368.41  227.99  368.94  228.59  368.95
  229.18  368.96  244.28  369.43

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   82.67     .04   98.94    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         82.67   98.94           131.85  132.32  132.95             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
```

```
    31.2    57.1     370       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     7.4    31.2     370   207.8   224.4     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3296

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  369.04    7.44  368.25    8.57   368.2   13.73     368   15.86  367.86
   16.24  367.82   20.57  367.48   24.23  367.01    30.3  366.41   32.66     366
   34.91  365.82   36.33  365.68   37.74  365.56   39.57  365.37   40.92  365.29
   43.15  365.29    43.9  365.26   57.19  365.22   65.98  364.57   67.12  364.52
   74.19     364   78.97  363.56   80.16  363.45   86.96  362.83   90.65  362.47
   94.56  362.11   95.89     362    97.9   362.2   98.84  362.19  107.93  362.58
  109.64  362.69  113.85  362.82  117.37  362.83  135.78  361.77  153.23  361.58
  168.24  361.26   168.8  361.63  178.91  362.18  192.98  358.61  195.06  357.92
  201.72  355.69  204.53  352.08  205.68  351.83  208.07  351.91  210.45  351.72
  213.06   352.1  214.14  351.94  214.68  352.11   218.9  356.65  223.16  358.34
  225.56  358.53  225.57  358.53   241.1  359.76  252.96  359.64  253.63  359.34
   274.2  360.14  298.22  360.84  338.52     362  345.28  362.49  349.83   362.8
  358.24  363.42  360.55  363.61  366.27     364  376.16  364.76  381.02   365.1
  384.43  365.36   386.5  365.49  387.73  365.58  388.62  365.62  390.74  365.78
  391.33   365.8  393.98     366  397.53  366.12  401.29  366.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  195.06     .04  223.16    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        195.06  223.16           117.57  116.94  115.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3179

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.99    2.92  366.32    4.49     366    7.03  365.74   10.65  365.61
   11.25  365.55   16.84  365.58   20.65  365.55   33.69  365.26   37.05  365.27
   37.83  365.19   39.74  365.22   40.57  365.13   41.71  365.14   42.29  365.07
   42.83  365.07    44.3  364.91   44.81  364.89   52.54  364.19   59.05  363.73
   59.96  363.72   64.43     364   81.81  364.24   90.25  364.43   92.01   364.4
   99.97     364  104.37  363.32  108.33  362.78  110.63  362.49   114.3  362.12
  115.81     362  120.17  361.84  122.87  361.79  123.54  361.75     128  361.77
  128.34  361.74  133.43  361.84  133.74  361.82  143.14  361.87   149.1  361.65
  164.07  359.25  179.76  356.13  194.67  355.75   202.4  355.27  206.08  354.62
   206.1  354.62  214.08  353.21  222.22  351.72   224.4  350.87  225.57  350.64
  226.07   350.5  226.87  350.39  227.28  351.49  228.52  356.98  237.22  357.51
  237.24  357.52   245.5  358.02  261.13  358.56  278.43  358.68  287.56  359.19
  290.34  359.37   293.7  359.56  297.36  359.67  300.98  359.87  307.03     360
  313.84  360.92  321.07     362  329.79  363.01     342  364.37  355.84     366
  363.77  366.33  385.35  367.64  391.11  368.04  397.46  368.33

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  179.76     .04  228.52    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
       179.76  228.52            101.1  102.24  103.14             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0    63.2     370       F
    80.2      98     370       F
   277.5   332.8     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      98     149     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3077

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.18    1.12  364.15    2.53  364.12    3.97   364.1    8.56   364.2
    8.98   364.2   10.31  364.25   11.19  364.24   13.14  364.15    13.5  364.12
   14.57     364   18.43  363.88   21.38  363.78   24.61  363.74   33.92  363.48
   39.77  363.33   48.31  362.93   50.98  362.82   61.21  362.37   63.02  362.31
    70.2     362   74.59   361.6    77.1  361.43   82.58  360.97   83.28  360.94
   95.42  360.41   99.21  360.31  103.01  360.23  103.64  360.21  104.52  360.13
  105.54     360  107.69  359.58  114.03     358  134.95   356.4  140.36     356
  163.01  355.01  179.63  355.11  193.39  354.95  204.81  355.12  210.64  354.59
  210.65  354.59     217  354.02  219.69  351.67  221.67  350.95  222.49  350.87
   223.8  350.87  226.26  350.75  228.21  350.72  229.11  350.89  230.73  354.07
  234.33  355.41   241.4  355.41  250.01  355.42  265.82  356.22  283.13  356.64
  290.94  357.97  293.37  357.99  293.48     358  295.67  358.42  300.65   359.3
   303.5  359.83  304.53     360  320.68  361.37  322.55  361.51  328.44     362
  330.19  362.24  341.42     364  344.14   364.6  349.88     366  354.73  367.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  204.81     .04  234.33    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        204.81  234.33            99.64   98.98   98.39             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2978

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  362.91   26.14   362.3   28.29  362.14    29.8   362.2   30.23  362.16
   30.97     362   35.23  361.59   35.47  361.59   37.04  361.43   37.26  361.43
    38.5   361.3   38.73  361.31   45.76  360.54   80.82  360.96  102.15  360.38
  114.55  360.01  118.88  359.77  161.71  358.87  229.91     358  230.71  357.16
  236.45  357.02  243.79  356.29  243.81  356.29  245.02  356.16  250.07  353.33
  252.35  352.96  254.47  350.89  255.74  350.56  257.29  350.63  259.41  350.68
   261.6  350.53  263.18  350.69  263.71  350.84  265.48  354.05  274.04   355.2
  274.05   355.2  275.87  355.44  297.22  357.18  316.25  361.84   320.6  362.22
  347.97  363.14  347.98  363.82  352.13     364  360.46   364.7  368.43  365.33
   374.4  365.77  378.19     366  379.71  366.15  380.66  366.19  383.79  366.08
  384.49  366.11  386.36     366  389.31  365.95  390.69     366  391.27  366.26
  391.59  366.47  398.39  367.21  402.86     368  410.75     370  415.21  370.52
  417.39  370.39  425.64  370.89  432.78     372  437.01  373.28  442.02  374.48
  446.02  375.38  448.25  375.83  449.28     376  451.72  376.13  455.64  376.24
   456.7  376.24  472.15  376.84  479.93  377.06  491.12  376.37

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  245.02     .04  274.04    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        245.02  274.04            61.85   60.74   60.21             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  141.71  359.42       F
  333.74   436.4  359.42       F
   436.4   487.3     370       F
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    23.3    86.1     370   160.1   223.6     370     343     389     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2917

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.13    2.63  368.04    6.35  367.71    9.99  367.48    11.7  367.47
   35.48  366.41    37.6   366.2   47.35     366    53.1  365.63   55.49  365.67
   59.74  365.47   61.17  365.78   62.32   365.9   63.72  365.91   67.25  365.78
      68  365.82    71.7  365.74   87.56  365.03  104.39     364  110.05  363.87
  115.72     364  121.31  364.39  126.33  364.38  131.94  364.63  136.94  363.92
  168.89     362   189.9  361.76   192.5     362  193.52  362.01  197.76   361.7
  204.56  361.38  249.88  360.38  263.45  359.81  270.42  359.65  306.63   359.2
  346.56  358.69  357.45  358.68  370.03  358.66  382.52  358.63  395.46  358.28
  408.81  358.21  431.48  357.13  440.02  355.31  440.05  355.31  441.62  354.97
   449.4  353.04  452.07  350.76  453.48  350.54  456.39  350.36  460.31  350.51
  460.82  350.59  463.55  354.74  471.92  355.74  471.94  355.74  475.59  356.18
  490.04  357.59  503.18  359.84  518.18  361.77  535.05  361.94   560.7  363.42
  591.03  363.84  596.29     364  615.98  366.75  623.66  366.17  626.79  366.33
  628.12  366.32  630.23  366.52  637.46     368  644.61     370  649.83  370.84
  653.46  371.06  662.64  371.32  668.42     372  676.66  372.58  679.51  372.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  440.02     .04  471.92    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        440.02  471.92            89.63   90.26   89.98             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 2900

INPUT
Description: Frederick Road
Distance from Upstream XS =      32
Deck/Roadway Width        =      33
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   368.5              23     368              86     366
     146     364             200     362             259     360
   337.5 359.415           380.1 359.626           407.4 359.923
   427.3 360.169           456.8 360.827           563.7 363.651
```

590	364	641	366	679.51	367		

Upstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84
653.46	371.06	662.64	371.32	668.42	372	676.66	372.58	679.51	372.87

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	440.02	.04	471.92	.075

Bank Sta: Left	Right	Coeff Contr.	Expan.
440.02	471.92	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	409.3	359.42	F
485.9	679.51	359.42	F

Downstream Deck/Roadway Coordinates
num= 13

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	368		60	366		120	364	
174	362		234	360		312.1	359.415	
354.5	359.626		382.1	359.923		401.6	360.169	
431.7	360.827		538.1	363.651		556	364	
615	366							

Downstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

Bank Sta: Left	Right	Coeff Contr.	Expan.
400.8	432.64	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	395.05	356.75	F

```
   445.1  623.32  356.75       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch    8.25   12.78
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                20    56.5     .024     .024        0                  .5               1
Upstream   Elevation =  350.33
           Centerline Station =  456
Downstream Elevation =  350.16
           Centerline Station =  421

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        194.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          4.19
  Q Barrel (cfs)            194.00    Culv Vel DS (ft/s)          4.06
  E.G. US. (ft)             354.70    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             354.47    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              354.48    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              354.23    Culv Exit Loss (ft)         0.00
  Delta EG (ft)               0.21    Culv Entr Loss (ft)         0.14
  Delta WS (ft)               0.24    Q Weir (cfs)
  E.G. IC (ft)              353.57    Weir Sta Lft (ft)
  E.G. OC (ft)              354.70    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        354.29    Weir Max Depth (ft)
  Culv WS Outlet (ft)       354.23    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         3.11    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.27    Min El Weir Flow (ft)     359.43


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        295.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          5.42
  Q Barrel (cfs)            295.00    Culv Vel DS (ft/s)          5.35
  E.G. US. (ft)             355.67    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             355.42    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              355.15    Culv Frctn Ls (ft)          0.13
  W.S. DS (ft)              354.88    Culv Exit Loss (ft)         0.17
  Delta EG (ft)               0.52    Culv Entr Loss (ft)         0.23
  Delta WS (ft)               0.54    Q Weir (cfs)
  E.G. IC (ft)              354.58    Weir Sta Lft (ft)
  E.G. OC (ft)              355.67    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        354.98    Weir Max Depth (ft)
  Culv WS Outlet (ft)       354.88    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         4.06    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.84    Min El Weir Flow (ft)     359.43


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        741.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)         10.42
  Q Barrel (cfs)            741.00    Culv Vel DS (ft/s)         11.05
```

E.G. US. (ft)	359.18	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	359.01	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	356.68	Culv Frctn Ls (ft)	0.84
W.S. DS (ft)	356.04	Culv Exit Loss (ft)	1.26
Delta EG (ft)	2.50	Culv Entr Loss (ft)	0.84
Delta WS (ft)	2.97	Q Weir (cfs)	
E.G. IC (ft)	358.48	Weir Sta Lft (ft)	
E.G. OC (ft)	359.18	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	356.65	Weir Max Depth (ft)	
Culv WS Outlet (ft)	356.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	4.94	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	899.47	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.13
Q Barrel (cfs)	899.47	Culv Vel DS (ft/s)	11.59
E.G. US. (ft)	360.76	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.58	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	357.76	Culv Frctn Ls (ft)	0.69
W.S. DS (ft)	357.25	Culv Exit Loss (ft)	1.58
Delta EG (ft)	3.01	Culv Entr Loss (ft)	0.96
Delta WS (ft)	3.33	Q Weir (cfs)	495.53
E.G. IC (ft)	360.71	Weir Sta Lft (ft)	236.70
E.G. OC (ft)	360.76	Weir Sta Rgt (ft)	453.61
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	357.87	Weir Max Depth (ft)	1.34
Culv WS Outlet (ft)	357.25	Weir Avg Depth (ft)	0.88
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	191.44
Culv Crt Depth (ft)	5.51	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	913.11	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.07
Q Barrel (cfs)	913.11	Culv Vel DS (ft/s)	11.30
E.G. US. (ft)	361.14	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.91	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.27	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	357.71	Culv Exit Loss (ft)	1.43
Delta EG (ft)	2.88	Culv Entr Loss (ft)	0.95
Delta WS (ft)	3.19	Q Weir (cfs)	851.89
E.G. IC (ft)	361.09	Weir Sta Lft (ft)	224.76
E.G. OC (ft)	361.14	Weir Sta Rgt (ft)	469.43
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.28	Weir Max Depth (ft)	1.75
Culv WS Outlet (ft)	357.71	Weir Avg Depth (ft)	1.16
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	284.98
Culv Crt Depth (ft)	5.57	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	911.47	Culv Full Len (ft)	26.43
# Barrels	1	Culv Vel US (ft/s)	10.89
Q Barrel (cfs)	911.47	Culv Vel DS (ft/s)	11.02
E.G. US. (ft)	361.52	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	361.24	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.75	Culv Frctn Ls (ft)	0.25
W.S. DS (ft)	358.17	Culv Exit Loss (ft)	1.31
Delta EG (ft)	2.77	Culv Entr Loss (ft)	0.92
Delta WS (ft)	3.07	Q Weir (cfs)	1245.53
E.G. IC (ft)	361.44	Weir Sta Lft (ft)	214.07
E.G. OC (ft)	361.52	Weir Sta Rgt (ft)	483.14
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.58	Weir Max Depth (ft)	2.11
Culv WS Outlet (ft)	358.17	Weir Avg Depth (ft)	1.40
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	378.03
Culv Crt Depth (ft)	5.57	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2827

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
400.8	432.64	59.3	67.61	75.81	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	395.05	356.75	F
445.1	623.32	356.75	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2759

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
      0  372.77    2.31  372.75    3.21  372.76    3.79   372.7    5.35  372.51
  10.05     372   17.86  370.67   21.54     370   22.94  369.68   29.73     368
  38.04     366   41.31  365.14   46.41     364   49.98  363.37   58.32     362
  62.31  361.29   70.12     360   83.48  358.75   88.76  358.48    93.5  358.22
  94.45  358.15   97.16     358  128.47  356.25  137.97     356  166.97  354.77
 188.46  354.27  206.85  354.18  213.44  353.14  217.92  353.75  217.94  353.75
 221.54  354.24  229.72  353.68  232.16  349.32  242.11  350.03  244.47  353.83
 247.97  353.92  254.64   354.1  273.96   354.9   288.2  354.55   327.4     356
 337.32  356.54  361.29  357.92   361.9     358  364.26  358.17  365.41  358.24
    367  358.37  372.78  358.74  375.31  358.81  388.46  358.79  394.15   358.8
 397.84  358.95  400.41  358.96  402.23  359.06  404.53  359.21  405.49  359.23
 408.57  359.48  408.95  359.49  411.45   359.7  411.87  359.72  415.03  359.99
 415.31     360  417.03   360.2  418.39   360.3   428.8  360.31  433.64   360.4
 438.69  360.56  442.82  360.73  450.11  361.09  466.87     362  474.25  362.98
 481.02     364  491.61     366   492.4  366.16  501.24     368

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  229.72     .04  244.47    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        229.72  244.47           166.79  169.71   170.1             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2589

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   370.5    6.39     370    8.12  369.55    9.88  369.06   13.59     368
   15.68  366.43   16.18     366    16.5  365.69   18.44     364   19.42     363
   20.51     362   21.74  361.02   22.67     360   27.21  358.55   28.42  358.17
   28.89     358    48.8     356   56.94  355.65   62.31  355.06    97.9  354.08
  104.04  353.91  106.64  349.71  112.07   349.9  114.29     352  118.86  352.08
  128.02  352.48  129.83  352.56   142.4  352.11  158.46  352.06  163.77  353.31
  176.98  353.81  195.26  354.09  212.76  355.32  219.91  355.94  220.06  355.97
  220.33     356  220.34     356  220.77  356.04  224.36   356.3   227.8  356.43
  228.59  356.43  235.01  356.02  235.26     356  235.49     356  244.56  356.04
   247.2  356.04  248.45  356.03  254.75  356.02   257.6  356.01   259.1     356
  259.88  356.04  262.22  356.13  262.67  356.15  272.42  356.42  274.41   356.5
  275.87  356.57  277.84  356.65  283.08   356.9  287.67   357.1  289.83   357.2
     291  357.25  295.04  357.45  305.68     358  327.61  359.52  335.25     360
  342.18  360.46  349.91  360.96  357.47  361.46  361.02  361.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  104.04     .04  114.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        104.04  114.29           102.11  104.17  106.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2485

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.38    4.47  368.19    8.54  368.03     9.3     368   11.37  367.71
   12.69   367.6   12.97  367.59   21.49  367.83   21.72  367.79   24.75  367.98
   24.78  367.97   25.94  368.02   27.18  368.02   28.49  367.97   29.82  367.87
   30.25  367.77   31.68  367.58   33.56  367.26      35  366.85   38.23     366
```

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   38.64  365.88   39.08  365.73   41.93  364.86   44.58     364   51.26  362.13
   51.81     362   52.07  361.95   53.08  361.71   59.58  360.24    60.5     360
   66.26  358.56   68.19     358   79.86  356.07    80.2     356  108.17   354.1
  116.73   353.3  136.32  353.03  148.67  352.95   152.4  351.89   153.8  351.49
  156.31  351.59  159.04  352.43  164.74  351.94  168.76   349.2  174.15  349.34
  176.14  352.31  183.78  352.86  185.84  353.01  202.53  353.09  228.12  353.77
  242.58     354  243.08  354.08  268.03  355.47   271.1  355.65  276.88     356
  279.61  356.42  290.09     358   293.7  358.35  295.16  358.52  296.99  358.71
  299.04  359.06  299.15  359.06  301.56  358.95  310.74  358.55  311.53  358.57
  326.08     360  343.08     362  362.94  363.92  363.84     364  373.86  364.98
  379.95  365.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  164.74     .04  176.14    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        164.74  176.14            153.6  154.59  153.42             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2331

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.49    6.68  364.41    7.02   364.4   14.19  364.07   14.82  364.03
   15.07     364   20.81  363.68   24.25  363.45   29.07  363.13   39.92  362.46
   45.16  362.09   46.53     362   47.28  361.49   49.54     360   52.15   358.3
   52.62     358   55.48  356.39   56.22     356   57.41  355.85   63.81  354.98
   71.45  353.58   95.41  352.52  117.31   352.1  137.93  352.42  139.13  352.39
  143.89  352.26   149.2  348.51  154.15   348.1  159.57  348.42  163.74  351.17
  170.01  352.12  172.55   352.5   187.7  353.21  192.26  353.51  195.07     354
  218.88  355.98  218.91  355.98   219.4  355.99  219.65     356  241.82  357.49
  246.88  357.84  249.17     358  261.51  359.33   265.1  359.63  265.64  359.68
  269.31     360  281.07  361.43  286.16     362  288.44  362.36  288.85  362.43
  290.52  362.72  297.61     364  300.67  364.91  304.17     366  307.87  366.43
     309   366.5  310.22  366.57  314.29  366.95  316.04   367.1  316.75  367.15
  319.13  367.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  143.89     .04  163.74    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        143.89  163.74           179.37   177.6  175.87             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2153

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.32    3.92  364.56    4.01  364.56     8.3   364.3   12.46  364.04
   12.76  364.02   13.08     364   13.25  363.87   13.45  363.73   16.05     362
   16.68  361.53   18.91     360   20.77  358.61    21.6     358   21.89  357.75
   24.09     356   30.84  354.47   33.11     354   52.92  352.32   74.07  351.81
  101.65  351.28  120.22  351.43  120.23  351.43   120.5  351.43  127.63  349.88
  130.12  350.05  131.34  346.86     142  346.39  144.29  352.45  150.56  352.61
  153.23  352.68  168.08  353.97  172.88   354.8  182.71     356  183.66  356.09
  183.87  356.11  184.85  356.22  185.07  356.24  187.04  356.46  193.55  357.16
  200.75     358  212.41  359.89  213.06     360  217.64  360.89  223.61     362
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  228.58  363.12  232.74     364  234.97  364.51  241.92     366  244.79  366.58
  251.21     368   256.5  369.43   258.4     370   259.7  370.42  264.45     372
  269.94  372.39  273.44  372.63

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  130.12     .04  144.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.12  144.29           160.15  158.75  157.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1994

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.16    1.03  359.27    6.73  358.67   10.37  358.29   12.97     358
   17.14  356.63      19     356   24.53  354.42   26.07     354   48.12   352.4
   57.17  351.28   75.62  351.28   92.39  351.14  101.12   350.8  106.95  350.57
  106.96  350.57  116.46  350.19   118.2  346.45  127.95  346.81  131.85  351.13
  136.96  351.29  150.75  351.72  165.28  352.31  177.37  352.98  196.01     354
  199.93  354.72  201.85  354.82  202.83  354.87  204.78  354.98  212.96  355.47
  214.68   355.8  216.21  355.53  218.47   355.7  222.42     356  236.41  357.33
  243.08     358  253.87   359.4  258.55     360  260.61  360.31  272.91     362
  275.22  362.56  277.16  363.07  277.31  363.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  116.46     .04  131.85    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        116.46  131.85           108.1  106.05  103.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1888

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354    68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        129.91  142.97           61.13   58.24    54.2             .3       .5

BRIDGE


RIVER: Plumtree
```

REACH: Plumtree RS: 1850

INPUT
Description: Private Bridge
Distance from Upstream XS = 18.5
Deck/Roadway Width = 16
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 8

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
3.66	359.97		81.5	359.87	357.87	101.7	360.452	358.452
126.6	360.865	358.865	153	360.835	358.835	175.1	360.491	358.491
201	360.491	358.491	320.31	359.1				

Upstream Bridge Cross Section Data
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.32	3.66	359.97	3.97	359.97	9.29	359.12	9.61	359.1
10.06	359.05	11.3	358.9	12.39	358.76	16.42	358	26.85	356.12
27.4	356	44.51	354.47	49.85	354	68.2	352.46	81.53	351.35
104.16	350.46	120.73	349.86	122.9	349.65	122.92	349.65	129.91	349
132.99	345.73	137.07	345.92	142.97	349.5	150.38	349.68	153.97	350.05
163.02	350.99	180.43	351.29	195.81	351.74	212.9	353.83	217.47	354.81
227.64	355.42	283.48	356	287.69	356.35	288.71	356.43	290.19	356.54
297.25	357.04	307.21	357.78	310.66	358	311.09	358.05	315.51	358.54
318.4	358.88	320.31	359.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	129.91	.04	142.97	.075

Bank Sta: Left Right Coeff Contr. Expan.
129.91 142.97 .3 .5

Downstream Deck/Roadway Coordinates
num= 7

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	359.24		91.4	359.823	357.823	114.8	360.523	358.523
139.8	360.92	358.92	165	360.892	358.892	189.6	360.465	358.465
211.7	359.771	357.771						

Downstream Bridge Cross Section Data
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left Right Coeff Contr. Expan.
131.1 149.09 .3 .5

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd = .8
Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	350.59	Element		
W.S. US. (ft)	350.34	E.G. Elev (ft)	350.52	350.40
Q Total (cfs)	194.00	W.S. Elev (ft)	350.24	350.28
Q Bridge (cfs)	194.00	Crit W.S. (ft)	348.85	348.91
Q Weir (cfs)		Max Chl Dpth (ft)	4.51	3.67
Weir Sta Lft (ft)		Vel Total (ft/s)	3.36	2.17
Weir Sta Rgt (ft)		Flow Area (sq ft)	57.76	89.58
Weir Submerg		Froude # Chl	0.43	0.25
Weir Max Depth (ft)		Specif Force (cu ft)	106.49	130.09
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.26	1.94
Min El Prs (ft)	358.87	W.P. Total (ft)	48.21	48.10
Delta EG (ft)	0.24	Conv. Total (cfs)	3211.9	4621.8
Delta WS (ft)	0.09	Top Width (ft)	45.71	46.13
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.36	C & E Loss (ft)	0.08	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.27	0.20
BR Sel Method	Energy only	Power Total (lb/ft s)	0.92	0.44

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	351.29	Element		
W.S. US. (ft)	351.00	E.G. Elev (ft)	351.21	351.09
Q Total (cfs)	295.00	W.S. Elev (ft)	350.89	350.93
Q Bridge (cfs)	295.00	Crit W.S. (ft)	349.70	349.40
Q Weir (cfs)		Max Chl Dpth (ft)	5.16	4.32
Weir Sta Lft (ft)		Vel Total (ft/s)	3.11	2.33
Weir Sta Rgt (ft)		Flow Area (sq ft)	94.94	126.41
Weir Submerg		Froude # Chl	0.44	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	169.88	210.88
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.38	1.77
Min El Prs (ft)	358.87	W.P. Total (ft)	71.41	74.18
Delta EG (ft)	0.27	Conv. Total (cfs)	4862.5	6624.2
Delta WS (ft)	0.09	Top Width (ft)	68.87	71.27
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.11	C & E Loss (ft)	0.09	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.31	0.21
BR Sel Method	Energy only	Power Total (lb/ft s)	0.95	0.49

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	352.85	Element		
W.S. US. (ft)	352.55	E.G. Elev (ft)	352.79	352.69
Q Total (cfs)	741.00	W.S. Elev (ft)	352.45	352.46

Q Bridge (cfs)	741.00	Crit W.S. (ft)	351.71	350.92
Q Weir (cfs)		Max Chl Dpth (ft)	6.72	5.85
Weir Sta Lft (ft)		Vel Total (ft/s)	2.86	2.58
Weir Sta Rgt (ft)		Flow Area (sq ft)	258.85	287.00
Weir Submerg		Froude # Chl	0.32	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	491.20	571.01
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	2.15	2.43
Min El Prs (ft)	358.87	W.P. Total (ft)	124.09	123.03
Delta EG (ft)	0.26	Conv. Total (cfs)	12672.8	15746.4
Delta WS (ft)	0.08	Top Width (ft)	120.34	118.06
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.86	C & E Loss (ft)	0.06	0.05
BR Sluice Coef		Shear Total (lb/sq ft)	0.45	0.32
BR Sel Method	Energy only	Power Total (lb/ft s)	1.27	0.83

BRIDGE OUTPUT Profile #50-YR

		Element	Inside BR US	Inside BR DS
E.G. US. (ft)	354.15	E.G. Elev (ft)	354.07	353.98
W.S. US. (ft)	353.80	W.S. Elev (ft)	353.67	353.65
Q Total (cfs)	1395.00	Crit W.S. (ft)	352.64	352.13
Q Bridge (cfs)	1395.00	Max Chl Dpth (ft)	7.94	7.04
Q Weir (cfs)		Vel Total (ft/s)	3.44	3.26
Weir Sta Lft (ft)		Flow Area (sq ft)	405.74	427.57
Weir Sta Rgt (ft)		Froude # Chl	0.32	0.31
Weir Submerg		Specif Force (cu ft)	997.13	1098.38
Weir Max Depth (ft)		Hydr Depth (ft)	3.38	3.62
Min El Weir Flow (ft)	359.11	W.P. Total (ft)	126.54	125.41
Min El Prs (ft)	358.87	Conv. Total (cfs)	22970.5	26502.1
Delta EG (ft)	0.29	Top Width (ft)	120.16	118.05
Delta WS (ft)	0.13	Frctn Loss (ft)	0.05	0.05
BR Open Area (sq ft)	994.03	C & E Loss (ft)	0.03	0.07
BR Open Vel (ft/s)	3.44	Shear Total (lb/sq ft)	0.74	0.59
BR Sluice Coef		Power Total (lb/ft s)	2.54	1.92
BR Sel Method	Energy only			

BRIDGE OUTPUT Profile #100-YR

		Element	Inside BR US	Inside BR DS
E.G. US. (ft)	354.74	E.G. Elev (ft)	354.65	354.57
W.S. US. (ft)	354.38	W.S. Elev (ft)	354.21	354.18
Q Total (cfs)	1765.00	Crit W.S. (ft)	353.00	352.54
Q Bridge (cfs)	1765.00	Max Chl Dpth (ft)	8.48	7.57
Q Weir (cfs)		Vel Total (ft/s)	3.76	3.61
Weir Sta Lft (ft)		Flow Area (sq ft)	469.96	489.39
Weir Sta Rgt (ft)		Froude # Chl	0.32	0.32
Weir Submerg		Specif Force (cu ft)	1298.22	1406.78
Weir Max Depth (ft)		Hydr Depth (ft)	3.91	4.15
Min El Weir Flow (ft)	359.11	W.P. Total (ft)	127.61	126.46
Min El Prs (ft)	358.87	Conv. Total (cfs)	28299.4	32018.7
Delta EG (ft)	0.32	Top Width (ft)	120.09	118.05
Delta WS (ft)	0.18	Frctn Loss (ft)	0.05	0.06
BR Open Area (sq ft)	994.03	C & E Loss (ft)	0.03	0.09
BR Open Vel (ft/s)	3.76	Shear Total (lb/sq ft)	0.89	0.73
BR Sluice Coef		Power Total (lb/ft s)	3.36	2.65
BR Sel Method	Energy only			

BRIDGE OUTPUT Profile #7-30-2016

		Element	Inside BR US	Inside BR DS
E.G. US. (ft)	355.33	E.G. Elev (ft)	355.23	355.15
W.S. US. (ft)	354.96	W.S. Elev (ft)	354.74	354.70
Q Total (cfs)	2157.00	Crit W.S. (ft)	353.33	352.91
Q Bridge (cfs)	2157.00	Max Chl Dpth (ft)	9.01	8.09
Q Weir (cfs)		Vel Total (ft/s)	4.04	3.91
Weir Sta Lft (ft)		Flow Area (sq ft)	533.72	551.12
Weir Sta Rgt (ft)		Froude # Chl	0.33	0.33
Weir Submerg		Specif Force (cu ft)	1639.89	1755.90
Weir Max Depth (ft)				

Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	4.45	4.67
Min El Prs (ft)	358.87	W.P. Total (ft)	128.68	127.51
Delta EG (ft)	0.34	Conv. Total (cfs)	34036.2	37958.7
Delta WS (ft)	0.22	Top Width (ft)	120.01	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.06	0.06
BR Open Vel (ft/s)	4.04	C & E Loss (ft)	0.02	0.10
BR Sluice Coef		Shear Total (lb/sq ft)	1.04	0.87
BR Sel Method	Energy only	Power Total (lb/ft s)	4.20	3.41

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1830

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.1	149.09	183.1	189.46	194.94	.3	.5

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1641

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.1	4.25	358	4.42	357.95	4.44	357.94	5.13	357.91
5.87	357.89	19.69	357.39	35.1	356.79	40.55	356.56	48.51	356.22
50.1	356.16	53.65	356	83.2	353.06	108.43	350.69	126.88	349.28
127.65	348.68	128.6	347.92	138.1	348.36	140.07	345.19	146.51	345.53
151.14	349.6	158.59	349.89	158.6	349.89	162.23	350.02	178.14	350
203.35	350.65	232.7	352	242.28	353.59	244.74	354	245.26	354.15
247.65	354.81	250.51	355.6	252.04	356	253.98	356.59	258.69	358
258.77	358.02	262.44	359.03	266	360	266.2	360.05	268.14	360.44
269.28	360.66	271.48	361.07	272.68	361.28	273.3	361.39		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	138.1	.04	151.14	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.1	151.14	176.17	177.29	178.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1463

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INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  356.46    5.61  356.33   11.71  356.19   16.33  356.06   18.18  356.02
   18.32  356.02   18.54     356    21.8  355.67   22.14  355.65   22.36  355.64
   22.69   355.6   22.89  355.58   27.15  355.19   29.24  355.09   30.76  355.02
    40.4  354.87   40.86  354.85   41.76   354.8   42.75  354.73   52.82     354
   69.61  352.87   75.51  352.42   79.43  352.14   79.72  352.12   81.65     352
   84.43  351.86   90.72  351.56   92.09  351.48   94.79  351.34   97.19  351.19
  107.32  350.52   111.7  350.26  115.41     350  138.29   349.1  159.11   349.1
  178.46  349.47  180.13  349.17   185.3  348.24  187.99  347.08  189.19  343.45
  196.87  343.35  197.98  346.06  206.54  348.53  210.52  348.75  210.53  348.75
  221.24  349.34  234.53  349.78  266.44  352.56  278.62     358  283.38  359.43
  285.38     360     287  360.55  290.28  361.58  291.64     362  294.58  362.89
  295.91  363.28  296.57  363.47  298.25     364   302.9  365.77  303.51     366
  309.02  367.06  310.22  367.29  310.97  367.42  314.74     368  315.87  368.18
  323.73  369.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  180.13     .04  206.54    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        180.13  206.54           172.51  172.28  171.74             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1291

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  363.49     2.9  363.09   10.68  362.14   11.86     362   19.26  360.55
   22.08     360   26.38  358.97   30.59     358    34.4  357.21   38.91     356
   43.26  354.82   46.23  354.17   47.03     354   49.14  353.62   58.14     352
   66.85  350.97    70.1  350.58   71.43  350.42   75.07     350  108.53  348.38
  120.68  348.74  128.48  348.81  133.87  347.09   136.5  346.81  137.71   345.2
  141.95  344.89  151.53  345.15  155.49  348.28  157.84   348.3  161.16  349.47
  178.09  349.55  199.34  350.93  214.63   351.7   228.4  351.81  242.53  351.32
  264.66  350.52  286.44  349.15  310.41  348.72  338.21     349  371.72  348.77
   400.9  348.48   416.8  348.59  427.74  348.67  430.58  344.68   431.8  344.26
  436.65  344.85  441.26  344.51  442.29  347.58  447.46  349.08  448.01  349.24
  458.85  350.67   471.3  352.75  481.29  354.33  491.23  357.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  427.74     .04  447.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        427.74  447.46           167.7  167.44  166.86             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1124

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  365.04    4.51  364.72    9.16  364.27    9.25  364.27   12.12     364
    15.5  363.29   21.22     362   23.39  361.54   30.93     360   35.95  358.97
   39.85  358.17   50.58     356   54.08   355.4   62.03     354   62.65  353.83
   63.34  353.65   73.01   352.9   74.16  352.78   80.64     352   83.69  351.62
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   99.16     350   114.6  348.69  124.02  348.63   131.1  347.62  149.71  348.01
  162.72  347.51  168.53  347.49  170.35  344.49  173.71  344.74  179.87  343.88
  182.52  344.16  184.05  346.89  186.24     347  189.68  348.23  195.55  348.19
     207   347.6  214.71  347.82  233.96  347.66  252.64   348.2  276.32   348.2
  304.29  347.84  332.45  347.91  346.81  348.51  347.97   348.3     348   348.3
  350.12  347.92  353.36   347.9  355.26  348.34   360.2  343.58   367.1  344.05
  375.37  349.26  378.03   349.7  378.05   349.7  380.33  350.08  392.73  351.02
  398.58  351.56  403.03  351.81  420.09     354  435.53     356  439.63  356.61
  442.77  357.02  450.32     358  455.33  358.77   457.5  359.06  460.77  359.47
  461.87  359.63  462.18  359.68   465.1     360  473.65  361.11  476.71  361.53
  479.97     362  480.72  362.12  480.94  362.16  483.56  362.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  355.26     .04  375.37    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        355.26  375.37           134.05  129.91   125.5             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     8.7    60.7     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 994

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   359.1    9.62     358   14.71  356.95    19.8     356   30.42  354.45
   33.38     354   36.49   353.7    54.6     352   57.99  351.76   59.66  351.64
   70.88  350.84   72.94   350.7   82.85     350  114.72  348.11  135.81   347.8
  150.43  347.49  170.48  346.43  171.74  343.41  176.87  342.99  186.86  344.33
  188.91  347.54  212.62   347.3  226.74     347  231.31  347.32  247.53  347.69
  256.13   347.8  270.71  347.72  281.14  348.11   284.5   347.5  286.04  347.21
  292.04  347.03  296.33  343.73  302.06  343.28  306.33  342.85  309.85  346.99
  314.78  348.42  315.81  348.64  315.83  348.64  320.17  349.59  333.26  350.57
     351  352.36  364.37     354     373   355.3  375.39  355.67  377.77     356
  383.23  356.87  390.35     358  393.92  358.56   397.2  359.05  403.45     360
  407.85  360.84  413.86     362  417.04  362.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  281.14     .04  315.83    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        281.14  315.83            82.93   82.66    81.8             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 911

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     359    2.24  358.56    3.51  358.32    5.22     358   12.31  356.66
   15.03  356.09   15.46     356   22.75  354.09   23.08     354   23.55  353.96
   24.83  353.84   24.92  353.83   25.43  353.83   29.76  353.58      30  353.57
   30.58   353.5   31.25  353.48   33.98  353.69    35.3   353.7   36.97  353.98
   37.02  353.98   37.13     354    37.9  354.04   38.06  354.05   38.27  354.04
   38.32  354.04   38.42  354.03   38.82     354   38.99  353.95    39.2  353.82
   44.56  353.53   50.12  353.05   56.89  352.42   59.95  352.14   61.41     352
   82.47  350.57   91.08     350  100.51   349.7  117.56  348.31  130.96  347.87
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  157.71  347.03  178.22  347.23  181.99  344.27  189.47  343.55  196.66  344.12
  201.78   347.5  223.44  347.06  243.05  346.93  252.46  346.76   252.6  346.85
  292.54  347.06  306.34  347.38  312.43  347.51  317.18  343.33  321.46  342.92
   325.5  343.21  332.27  348.29  337.05     349  337.06     349  351.26  351.11
  381.21  355.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  312.43     .04  332.27    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        312.43  332.27           138.48  148.66  157.22             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 762

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  357.13    2.35  357.03    6.48  356.67    7.69  356.61    9.39  356.51
   14.41     356   19.83  355.44      21  355.32   22.74  355.12   32.28     354
   34.37   353.8   35.36  353.71   51.57  352.14   52.81  352.02   53.01     352
   61.67  351.41   65.26  351.17   67.97  350.99   73.71  350.62   76.99  350.42
   81.35  350.17   81.78  350.14   84.01  350.03   84.52     350   108.7  348.46
  145.52  346.99  169.46  347.05  186.24  347.42  197.19  345.22  199.28  343.68
  205.18   343.3  208.29  343.86  210.89  346.07  228.95  347.18  235.77   347.3
  240.55  347.28  244.65  347.26  244.66  347.26   252.8  347.23   257.6  343.09
  259.66  342.54  263.98  342.94   271.9  344.77  276.21  346.65  276.24  346.66
  276.97  346.98  298.22  347.67  328.56  347.99  360.33  351.01  370.76  351.97
  371.89     352   373.6  352.14  375.07  352.27  376.35   352.4  384.34  353.82
  384.65  353.87  384.83   353.9  384.94  353.92   385.3     354     392  355.62
  393.35     356  395.32   356.4  403.54     358  408.28  358.51  410.83  358.82
  411.55  358.82  412.84   358.8  416.14  358.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   252.8     .04  276.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         252.8  276.97           101.69  104.14  104.96             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   366.8   407.4     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 658

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  358.95    2.26  358.79     5.3  358.55    9.28   358.2   11.48     358
   14.26  357.65   16.66  357.36   20.41  356.87   26.22  356.16   35.44  355.02
   41.74  354.15   42.79     354   59.31   352.1    59.6  352.07   59.76  352.05
    60.3     352   70.49  351.39    76.4  351.02   86.06  350.44   92.55     350
  118.81     348  200.75  346.51  222.09  346.42  240.58  346.42  240.59  346.42
   245.1  346.43  248.95  343.16  255.63  340.34   262.8   340.2  267.31  342.59
  270.68  343.91  277.89  346.74  301.79  346.57  332.03  346.36  388.47  347.88
  391.63  347.92  394.29  347.92  394.49  347.91  400.05     348  401.61  348.21
  402.93   348.4  404.42  348.65   405.7  348.87  406.58  349.04  407.19  349.17
  412.03     350  415.92  350.98  417.72  351.13  418.47  351.21  420.03  351.39
  422.64  351.75  422.86  351.79  424.26     352  426.31  352.71  429.22  353.83
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  429.43  353.91  429.85  354.09  434.45     356  442.51  357.75  442.83  357.83
  443.54     358  450.24  358.39  464.98  359.29  465.18  359.32  466.53  359.48
  470.64     360  471.72  360.06  477.88   360.4  481.52  360.61  490.37  361.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   245.1     .04  277.89    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         245.1  277.89           129.48  132.55  137.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 526

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  357.29    9.33  356.07    9.88     356   15.36  355.41   18.93  355.03
      21  354.81   28.17     354   30.46  353.79    34.1  353.48   42.62  352.81
   46.05  352.53    47.8   352.4   49.22  352.29   53.02     352   59.04  351.42
   61.87  351.16   67.63  350.62   73.95     350   93.12  348.67  121.73  346.39
  157.75  346.18  186.76  345.79  188.34  345.18  188.36  345.17  195.28  342.48
  203.56  341.63  212.23  342.05  213.87   346.6  218.56  346.44  218.57  346.44
  237.47   345.8  275.28  345.64  307.64  346.39  309.73  346.39   311.5  346.41
  313.11  346.41  314.75   346.4  329.39  346.38  337.83  346.31  340.98  346.28
  350.53  346.19  372.03     346  378.64  346.57  382.54   346.9  390.22  347.56
  395.28     348  402.02  349.12  407.12     350  408.46  350.19  409.19  350.29
  409.96  350.41  415.16  351.21  417.91  351.63  420.21     352  425.22  352.92
  430.26     354  432.81  354.65  434.33     355  437.88  355.74  438.42  355.87
  439.17     356  441.01  356.24   446.9  356.96  448.95  357.26  452.86  357.84
  453.18  357.89  453.89     358  458.07  358.55  459.62  358.79  462.41  359.19
  467.23     360  483.54  360.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.76     .04  213.87    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.76  213.87           143.66  145.78  147.57             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     443   476.3     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 380

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.67     .48  366.64   10.41     366   17.37  364.74   21.25     364
   25.91  363.14    31.6     362   37.28  360.91   41.95     360   46.91  359.56
   63.27     358   71.54  357.11   76.74  356.56   81.96     356   84.51  355.63
   95.36     354  101.45  352.61  104.07     352  106.08  351.38   110.9     350
  116.69  348.33  117.74     348  119.59   347.7   121.4  347.41  126.04  346.65
     130     346  133.26   346.1  135.45  346.16  138.15  346.24  146.78  346.47
  149.42  346.45  150.34  346.44   151.1  346.43  151.57  346.42  155.44  346.29
  164.04  345.66  193.28  345.53  212.79  346.39  212.81  346.39  215.37  346.51
  219.06  341.92   227.8  342.05  238.17  343.21  243.49   346.6   243.7   346.6
  243.72  346.59  260.79  346.48  291.92  346.27  304.59     346  319.84  347.43
  322.97  347.65  328.49     348  330.64  348.16  332.41  348.38   334.7  348.61
  337.77  348.94  346.14     350   350.1  350.95   354.1     352  360.75  353.66
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  362.11     354  365.83  354.84  369.98  355.77  370.39  355.85  371.06     356
  372.08  356.17  382.09     358  386.28  358.59  390.61  359.14

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  215.37     .04   243.7    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        215.37   243.7            235.8  234.15  232.25             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      10    44.6     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 146

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     359    6.37  358.83   15.88  358.07   16.47  358.02   16.84     358
   21.14  357.01   25.77     356   28.06   355.5   30.16  355.06   34.73  354.18
    35.2  354.08   35.66     354   37.68  353.72    38.1  353.66    41.6  353.18
   44.05  352.85   45.88  352.61   50.58  352.01   50.71     352    52.8  351.88
   60.34   351.5   61.05  351.44    66.3  351.17    67.3  351.09   70.18  350.94
   72.76  350.72   76.24  350.54   81.27     350  100.43  348.85  105.06  348.54
  115.51     348  138.29   346.9  181.73  345.23  210.07  344.41  210.09  344.41
  215.13  344.26  220.35  341.19  225.41  340.73  231.22  340.96  236.01  344.28
  240.33  344.79  253.16  346.33  258.95  349.49  260.11  349.59  263.96  350.56
  267.35     352   269.7  353.13  271.51     354  273.55  355.07  275.21     356
  277.09  356.89  279.29     358  283.62  359.32   285.5  359.78  286.47     360
  291.06   360.4  294.96  360.73  299.25  361.08  301.38  361.31  304.13  361.54
  306.53  361.84  306.74  361.86  307.86     362  314.98  363.37   318.1     364
  325.64  365.64  327.27     366  335.18  367.64  336.93     368  339.58  368.18
  343.85  368.49  346.34  368.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  215.13     .04  236.01    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        215.13  236.01            88.09   82.88   77.62             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    15.2    56.5     365   296.2     338     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 63

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     354    7.34  353.26   12.41  352.73   16.79  352.29    19.4     352
    27.1  350.79   31.84     350   38.59  349.24   50.74     348   57.78  347.37
   58.67  347.29   60.21  347.18   62.82  346.94   66.66  346.68   68.29  346.54
   76.91     346   79.38  345.88   79.63  345.86      80  345.83   80.68  345.78
   83.85  345.58   87.55  345.35  103.02     344  108.36  342.62  114.01     342
  118.01     340  138.02     340  142.02     342   147.2  343.25  150.03     344
  151.66  344.32  153.16  344.61  153.93  344.74   155.1  344.92  156.66   345.2
  158.34  345.42  159.11  345.56  160.97  345.74  161.25  345.79   163.2  345.94
  163.62     346  170.72     346  174.59  346.47  175.77  346.56  176.48  346.66
  177.66  346.84  178.56  346.94  180.57  347.23  181.89   347.4   182.5  347.49
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185.96	348	187.92	348.58	193.03	350	195.4	350.82	198.31	352
201.23	353.21	203.77	354	207.9	355.67	208.87	356	212.01	357.21
214.25	358	216.21	358.46	223.24	360	225.85	360.29	227.5	360.52
231.62	361.04	238.04	362	248.29	363.79	249.46	364	253.46	364.5
253.68	364.53								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	103.02	.04	150.03	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
103.02	150.03	0	0	.1	.3

SUMMARY OF MANNING'S N VALUES

River:Plumtree

Reach	River Sta.	n1	n2	n3
Plumtree	10286	.085	.04	.085
Plumtree	10044	.085	.04	.085
Plumtree	9814	.085	.04	.085
Plumtree	9762	.085	.04	.085
Plumtree	9732	.075	.04	.075
Plumtree	9650	Culvert		
Plumtree	9589	.075	.04	.075
Plumtree	9499	.075	.04	.075
Plumtree	9398	.085	.04	.085
Plumtree	9301	.085	.04	.085
Plumtree	9196	.085	.04	.085
Plumtree	8987	.085	.04	.085
Plumtree	8753	.065	.04	.085
Plumtree	8579	.075	.04	.085
Plumtree	8374	.075	.04	.085
Plumtree	8229	.075	.04	.085
Plumtree	8094	.075	.04	.085
Plumtree	7954	.075	.04	.085
Plumtree	7800	.075	.04	.085
Plumtree	7548	.075	.04	.085
Plumtree	7367	.075	.04	.075
Plumtree	7216	.075	.04	.075
Plumtree	7030	.075	.04	.075
Plumtree	6893	.075	.04	.075
Plumtree	6766	.075	.04	.075
Plumtree	6663	.075	.04	.075
Plumtree	6568	.075	.04	.075
Plumtree	6454	.075	.04	.075
Plumtree	6350	.075	.04	.075
Plumtree	6296	.075	.04	.075
Plumtree	6250	Culvert		
Plumtree	6197	.075	.04	.075
Plumtree	6122	.075	.04	.075
Plumtree	6028	.075	.04	.075
Plumtree	5926	.075	.04	.075
Plumtree	5824	.075	.04	.075
Plumtree	5745	.075	.04	.075
Plumtree	5711	.075	.04	.075
Plumtree	5650	Culvert		
Plumtree	5614	.075	.04	.075
Plumtree	5560	.075	.04	.075
Plumtree	5510	.075	.04	.075
Plumtree	5500	Bridge		
Plumtree	5474	.075	.04	.075
Plumtree	5419	.075	.04	.075
Plumtree	5323	.075	.04	.075
Plumtree	5209	.075	.04	.075
Plumtree	5107	.075	.04	.075

Plumtree	5040	.075	.04	.075
Plumtree	5000	Culvert		
Plumtree	4932	.075	.04	.075
Plumtree	4845	.075	.04	.075
Plumtree	4745	.075	.04	.075
Plumtree	4636	.075	.04	.075
Plumtree	4550	.075	.04	.075
Plumtree	4400	Culvert		
Plumtree	4344	.075	.04	.075
Plumtree	4289	.075	.04	.075
Plumtree	4185	.075	.04	.075
Plumtree	4033	.075	.04	.075
Plumtree	3930	.075	.04	.075
Plumtree	3816	.075	.04	.075
Plumtree	3688	.075	.04	.075
Plumtree	3550	.075	.04	.075
Plumtree	3428	.075	.04	.075
Plumtree	3296	.075	.04	.075
Plumtree	3179	.075	.04	.075
Plumtree	3077	.075	.04	.075
Plumtree	2978	.075	.04	.075
Plumtree	2917	.075	.04	.075
Plumtree	2900	Culvert		
Plumtree	2827	.075	.04	.075
Plumtree	2759	.075	.04	.075
Plumtree	2589	.075	.04	.075
Plumtree	2485	.075	.04	.075
Plumtree	2331	.075	.04	.075
Plumtree	2153	.075	.04	.075
Plumtree	1994	.075	.04	.075
Plumtree	1888	.075	.04	.075
Plumtree	1850	Bridge		
Plumtree	1830	.075	.04	.075
Plumtree	1641	.075	.04	.075
Plumtree	1463	.075	.04	.075
Plumtree	1291	.075	.04	.075
Plumtree	1124	.075	.04	.075
Plumtree	994	.075	.04	.075
Plumtree	911	.075	.04	.075
Plumtree	762	.075	.04	.075
Plumtree	658	.075	.04	.075
Plumtree	526	.075	.04	.075
Plumtree	380	.075	.04	.075
Plumtree	146	.075	.04	.075
Plumtree	63	.075	.04	.075

SUMMARY OF REACH LENGTHS

River: Plumtree

Reach	River Sta.	Left	Channel	Right
Plumtree	10286	240.46	241.25	237.2
Plumtree	10044	233.9	230.57	222.97
Plumtree	9814	52.19	51.52	50.85
Plumtree	9762	32.64	30.09	27.57
Plumtree	9732	145.71	143.47	141.55
Plumtree	9650	Culvert		
Plumtree	9589	74.95	89.37	103.36
Plumtree	9499	98.65	101.8	104.92
Plumtree	9398	97.24	96.47	94.54
Plumtree	9301	109.84	105	100.42
Plumtree	9196	197.07	208.89	195.59
Plumtree	8987	233.38	233.77	226.61
Plumtree	8753	178.41	174.76	168.62
Plumtree	8579	198.29	204.23	206.04

Plumtree	8374	144.9	145.45	146.03
Plumtree	8229	135.27	135.16	134.66
Plumtree	8094	138.21	139.81	140.01
Plumtree	7954	155.28	153.64	152.99
Plumtree	7800	252.37	252.82	252.55
Plumtree	7548	174.12	180.41	186.79
Plumtree	7367	143.37	150.84	157.8
Plumtree	7216	190.28	186.42	181.46
Plumtree	7030	140.13	137.19	133.92
Plumtree	6893	124.46	126.53	128.02
Plumtree	6766	103.31	103.53	104.46
Plumtree	6663	90.58	94.53	97.72
Plumtree	6568	112.95	114.27	115.74
Plumtree	6454	102.69	103.78	104.74
Plumtree	6350	52.33	53.78	55.24
Plumtree	6296	98.47	99.02	99.58
Plumtree	6250	Culvert		
Plumtree	6197	75.78	74.81	73.83
Plumtree	6122	98.18	94.21	91.92
Plumtree	6028	100.93	101.91	101.19
Plumtree	5926	102.11	102.54	102.93
Plumtree	5824	75.62	79.21	82.75
Plumtree	5745	34.07	34.02	34.04
Plumtree	5711	96.24	96.18	98.71
Plumtree	5650	Culvert		
Plumtree	5614	60.47	54.67	45.26
Plumtree	5560	56.62	49.74	41.3
Plumtree	5510	36.56	36.42	38.18
Plumtree	5500	Bridge		
Plumtree	5474	54.4	54.86	54.94
Plumtree	5419	93.04	95.36	97.65
Plumtree	5323	116.69	114.31	111.9
Plumtree	5209	111.42	101.59	91.47
Plumtree	5107	67.29	67.07	66.86
Plumtree	5040	104.82	108.2	107.53
Plumtree	5000	Culvert		
Plumtree	4932	86.54	87.15	87.5
Plumtree	4845	89.54	100.49	110.66
Plumtree	4745	111.08	108.67	106.25
Plumtree	4636	90.09	85.72	81.01
Plumtree	4550	205.67	206.54	206.28
Plumtree	4400	Culvert		
Plumtree	4344	54.24	54.2	54.21
Plumtree	4289	104.83	104.42	103.52
Plumtree	4185	151.73	151.97	152.24
Plumtree	4033	105.3	103.27	101.24
Plumtree	3930	112.01	113.72	114.59
Plumtree	3816	128.5	127.87	127.21
Plumtree	3688	137.67	137.99	138.3
Plumtree	3550	121.58	121.96	122.09
Plumtree	3428	131.85	132.32	132.95
Plumtree	3296	117.57	116.94	115.99
Plumtree	3179	101.1	102.24	103.14
Plumtree	3077	99.64	98.98	98.39
Plumtree	2978	61.85	60.74	60.21
Plumtree	2917	89.63	90.26	89.98
Plumtree	2900	Culvert		
Plumtree	2827	59.3	67.61	75.81
Plumtree	2759	166.79	169.71	170.1
Plumtree	2589	102.11	104.17	106.57
Plumtree	2485	153.6	154.59	153.42
Plumtree	2331	179.37	177.6	175.87
Plumtree	2153	160.15	158.75	157.04
Plumtree	1994	108.1	106.05	103.75
Plumtree	1888	61.13	58.24	54.2
Plumtree	1850	Bridge		
Plumtree	1830	183.1	189.46	194.94
Plumtree	1641	176.17	177.29	178.52
Plumtree	1463	172.51	172.28	171.74

Plumtree	1291	167.7	167.44	166.86
Plumtree	1124	134.05	129.91	125.5
Plumtree	994	82.93	82.66	81.8
Plumtree	911	138.48	148.66	157.22
Plumtree	762	101.69	104.14	104.96
Plumtree	658	129.48	132.55	137.52
Plumtree	526	143.66	145.78	147.57
Plumtree	380	235.8	234.15	232.25
Plumtree	146	88.09	82.88	77.62
Plumtree	63	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Plumtree

Reach	River Sta.	Contr.	Expan.
Plumtree	10286	.1	.3
Plumtree	10044	.1	.3
Plumtree	9814	.1	.3
Plumtree	9762	.1	.3
Plumtree	9732	.3	.5
Plumtree	9650	Culvert	
Plumtree	9589	.3	.5
Plumtree	9499	.1	.3
Plumtree	9398	.1	.3
Plumtree	9301	.1	.3
Plumtree	9196	.1	.3
Plumtree	8987	.1	.3
Plumtree	8753	.1	.3
Plumtree	8579	.1	.3
Plumtree	8374	.1	.3
Plumtree	8229	.1	.3
Plumtree	8094	.1	.3
Plumtree	7954	.1	.3
Plumtree	7800	.1	.3
Plumtree	7548	.1	.3
Plumtree	7367	.1	.3
Plumtree	7216	.1	.3
Plumtree	7030	.1	.3
Plumtree	6893	.1	.3
Plumtree	6766	.1	.3
Plumtree	6663	.1	.3
Plumtree	6568	.1	.3
Plumtree	6454	.1	.3
Plumtree	6350	.1	.3
Plumtree	6296	.3	.5
Plumtree	6250	Culvert	
Plumtree	6197	.3	.5
Plumtree	6122	.1	.3
Plumtree	6028	.1	.3
Plumtree	5926	.1	.3
Plumtree	5824	.1	.3
Plumtree	5745	.1	.3
Plumtree	5711	.3	.5
Plumtree	5650	Culvert	
Plumtree	5614	.3	.5
Plumtree	5560	.1	.3
Plumtree	5510	.3	.5
Plumtree	5500	Bridge	
Plumtree	5474	.3	.5
Plumtree	5419	.1	.3
Plumtree	5323	.1	.3
Plumtree	5209	.1	.3
Plumtree	5107	.1	.3
Plumtree	5040	.3	.5

Plumtree	5000	Culvert		
Plumtree	4932		.3	.5
Plumtree	4845		.1	.3
Plumtree	4745		.1	.3
Plumtree	4636		.1	.3
Plumtree	4550		.3	.5
Plumtree	4400	Culvert		
Plumtree	4344		.3	.5
Plumtree	4289		.1	.3
Plumtree	4185		.1	.3
Plumtree	4033		.1	.3
Plumtree	3930		.1	.3
Plumtree	3816		.1	.3
Plumtree	3688		.1	.3
Plumtree	3550		.1	.3
Plumtree	3428		.1	.3
Plumtree	3296		.1	.3
Plumtree	3179		.1	.3
Plumtree	3077		.1	.3
Plumtree	2978		.1	.3
Plumtree	2917		.3	.5
Plumtree	2900	Culvert		
Plumtree	2827		.3	.5
Plumtree	2759		.1	.3
Plumtree	2589		.1	.3
Plumtree	2485		.1	.3
Plumtree	2331		.1	.3
Plumtree	2153		.1	.3
Plumtree	1994		.1	.3
Plumtree	1888		.3	.5
Plumtree	1850	Bridge		
Plumtree	1830		.3	.5
Plumtree	1641		.1	.3
Plumtree	1463		.1	.3
Plumtree	1291		.1	.3
Plumtree	1124		.1	.3
Plumtree	994		.1	.3
Plumtree	911		.1	.3
Plumtree	762		.1	.3
Plumtree	658		.1	.3
Plumtree	526		.1	.3
Plumtree	380		.1	.3
Plumtree	146		.1	.3
Plumtree	63		.1	.3

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	10286	1-YR	223.00	395.09	396.81	396.59	396.90	0.008138	3.23	121.42	150.01	0.58
Plumtree	10286	2-YR	307.00	395.09	396.98	396.60	397.10	0.008539	3.69	147.05	154.15	0.62
Plumtree	10286	10-YR	596.00	395.09	397.61	396.95	397.76	0.006496	4.33	248.53	169.55	0.58
Plumtree	10286	50-YR	995.00	395.09	398.01	397.34	398.27	0.008537	5.71	319.43	179.33	0.69
Plumtree	10286	100-YR	1200.00	395.09	398.12	397.51	398.46	0.010360	6.50	338.95	180.10	0.76
Plumtree	10286	7-30-2016	1333.00	395.09	398.20	397.62	398.58	0.011255	6.93	353.34	180.66	0.80
Plumtree	10044	1-YR	223.00	392.49	394.38	394.17	394.55	0.012033	4.01	95.57	160.05	0.71
Plumtree	10044	2-YR	307.00	392.49	394.57	394.26	394.76	0.011181	4.31	128.56	181.74	0.71
Plumtree	10044	10-YR	596.00	392.49	394.81	394.81	395.21	0.019905	6.42	174.65	200.40	0.97
Plumtree	10044	50-YR	995.00	392.49	395.39		395.77	0.013024	6.57	298.64	234.35	0.83
Plumtree	10044	100-YR	1200.00	392.49	395.74		396.07	0.009632	6.31	384.48	255.67	0.74
Plumtree	10044	7-30-2016	1333.00	392.49	395.95		396.26	0.008317	6.22	439.55	268.46	0.69
Plumtree	9814	1-YR	223.00	388.76	391.65	391.32	391.94	0.010722	4.30	51.91	43.53	0.69
Plumtree	9814	2-YR	307.00	388.76	392.01	391.61	392.32	0.010099	4.47	68.69	52.13	0.69
Plumtree	9814	10-YR	596.00	388.76	393.97	392.33	394.04	0.000995	2.52	424.51	272.22	0.25
Plumtree	9814	50-YR	995.00	388.76	395.24	393.16	395.30	0.000598	2.45	789.28	304.39	0.20
Plumtree	9814	100-YR	1200.00	388.76	395.55	393.38	395.62	0.000647	2.66	886.00	315.10	0.21
Plumtree	9814	7-30-2016	1333.00	388.76	395.75	393.50	395.82	0.000664	2.77	948.65	317.79	0.22
Plumtree	9762	1-YR	223.00	388.00	390.84		391.29	0.014434	5.36	41.63	30.27	0.81
Plumtree	9762	2-YR	307.00	388.00	391.35	390.95	391.76	0.011216	5.15	64.37	69.10	0.73
Plumtree	9762	10-YR	596.00	388.00	393.94		394.00	0.000648	2.21	479.19	228.01	0.20
Plumtree	9762	50-YR	995.00	388.00	395.21		395.27	0.000538	2.45	796.82	286.89	0.19
Plumtree	9762	100-YR	1200.00	388.00	395.52		395.59	0.000598	2.69	890.44	322.86	0.21
Plumtree	9762	7-30-2016	1333.00	388.00	395.71		395.79	0.000658	2.89	954.17	331.68	0.22
Plumtree	9732	1-YR	223.00	387.00	390.89	389.66	391.03	0.002737	3.09	72.07	34.50	0.38
Plumtree	9732	2-YR	307.00	387.00	391.35	390.00	391.54	0.002876	3.45	88.95	37.47	0.39
Plumtree	9732	10-YR	596.00	387.00	393.80	390.90	393.96	0.000990	3.21	193.76	166.87	0.26
Plumtree	9732	50-YR	995.00	387.00	395.11	391.81	395.24	0.000766	3.32	527.07	223.95	0.24
Plumtree	9732	100-YR	1200.00	387.00	395.40	392.17	395.56	0.000880	3.68	593.43	235.24	0.26
Plumtree	9732	7-30-2016	1333.00	387.00	395.59	392.41	395.76	0.000934	3.86	638.78	241.96	0.27
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	223.00	386.27	389.31	388.43	389.52	0.004152	3.67	61.60	35.83	0.46
Plumtree	9589	2-YR	307.00	386.27	389.99	388.79	390.20	0.002856	3.72	85.70	43.20	0.40
Plumtree	9589	10-YR	596.00	386.27	391.04	389.65	391.43	0.003384	5.07	123.56	63.32	0.47
Plumtree	9589	50-YR	995.00	386.27	392.07	390.53	392.59	0.003515	6.09	227.25	135.97	0.50
Plumtree	9589	100-YR	1200.00	386.27	392.60	390.93	393.12	0.003223	6.26	327.48	245.13	0.48
Plumtree	9589	7-30-2016	1333.00	386.27	392.89	391.32	393.38	0.002996	6.26	402.44	267.37	0.47
Plumtree	9499	1-YR	204.00	385.35	388.97		389.15	0.003898	3.51	70.65	50.97	0.44
Plumtree	9499	2-YR	321.00	385.35	389.75		389.92	0.002934	3.58	125.38	124.78	0.40
Plumtree	9499	10-YR	719.00	385.35	390.88		391.08	0.002582	4.32	294.26	158.77	0.40
Plumtree	9499	50-YR	1263.00	385.35	391.97		392.20	0.002314	4.88	474.75	171.09	0.40
Plumtree	9499	100-YR	1578.00	385.35	392.51		392.74	0.002216	5.13	567.74	175.97	0.40
Plumtree	9499	7-30-2016	1757.00	385.35	392.79		393.03	0.002177	5.27	617.40	178.49	0.40
Plumtree	9398	1-YR	204.00	384.42	388.37		388.70	0.004701	4.54	44.89	15.87	0.48
Plumtree	9398	2-YR	321.00	384.42	388.92	387.78	389.45	0.006779	5.86	65.41	97.70	0.58
Plumtree	9398	10-YR	719.00	384.42	390.45		390.76	0.003626	5.57	289.42	167.13	0.45
Plumtree	9398	50-YR	1263.00	384.42	391.67		391.93	0.002885	5.79	503.70	182.79	0.42
Plumtree	9398	100-YR	1578.00	384.42	392.22		392.49	0.002794	6.05	606.79	192.69	0.42
Plumtree	9398	7-30-2016	1757.00	384.42	392.51		392.78	0.002729	6.16	664.04	196.97	0.42
Plumtree	9301	1-YR	204.00	383.31	388.11		388.33	0.002680	3.80	62.04	32.60	0.37
Plumtree	9301	2-YR	321.00	383.31	388.50		388.89	0.004323	5.16	81.35	69.83	0.48
Plumtree	9301	10-YR	719.00	383.31	389.23	389.18	390.17	0.009143	8.49	142.78	91.28	0.72
Plumtree	9301	50-YR	1263.00	383.31	390.17	390.17	391.36	0.010478	10.35	232.10	100.36	0.80
Plumtree	9301	100-YR	1578.00	383.31	390.59	390.59	391.91	0.011035	11.19	275.72	104.50	0.83
Plumtree	9301	7-30-2016	1757.00	383.31	390.79	390.79	392.19	0.011514	11.69	296.68	106.44	0.85
Plumtree	9196	1-YR	204.00	383.81	387.40	387.40	387.81	0.010238	5.48	61.09	107.80	0.69
Plumtree	9196	2-YR	321.00	383.81	387.74	387.73	388.20	0.010946	6.21	99.99	121.59	0.73
Plumtree	9196	10-YR	719.00	383.81	388.82		389.17	0.006723	6.33	246.23	143.82	0.61
Plumtree	9196	50-YR	1263.00	383.81	389.79	389.01	390.16	0.005917	7.03	390.74	154.81	0.60
Plumtree	9196	100-YR	1578.00	383.81	390.24	389.28	390.64	0.005766	7.42	461.97	159.38	0.60
Plumtree	9196	7-30-2016	1757.00	383.81	390.48	389.44	390.89	0.005701	7.62	500.52	161.92	0.60
Plumtree	8987	1-YR	204.00	382.77	386.54	385.23	386.67	0.002345	3.34	119.75	115.30	0.34
Plumtree	8987	2-YR	321.00	382.77	387.00		387.15	0.002549	3.84	174.45	121.03	0.37
Plumtree	8987	10-YR	719.00	382.77	387.95		388.19	0.003433	5.25	295.29	132.81	0.44
Plumtree	8987	50-YR	1263.00	382.77	388.79		389.13	0.004364	6.66	410.83	141.71	0.52
Plumtree	8987	100-YR	1578.00	382.77	389.19		389.58	0.004762	7.31	467.81	145.45	0.54
Plumtree	8987	7-30-2016	1757.00	382.77	389.40		389.82	0.004958	7.64	498.21	147.40	0.56

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	8753	1-YR	204.00	381.99	385.24	385.24	385.66	0.009692	5.85	60.16	79.52	0.66
Plumtree	8753	2-YR	321.00	381.99	385.62	385.55	386.06	0.010043	6.55	91.63	87.32	0.69
Plumtree	8753	10-YR	719.00	381.99	386.73		387.08	0.006968	6.81	225.01	174.86	0.61
Plumtree	8753	50-YR	1263.00	381.99	387.83		388.07	0.004512	6.46	448.27	231.04	0.51
Plumtree	8753	100-YR	1578.00	381.99	388.33		388.55	0.003768	6.29	569.25	245.93	0.47
Plumtree	8753	7-30-2016	1757.00	381.99	388.59		388.80	0.003460	6.22	634.06	251.24	0.46
Plumtree	8579	1-YR	204.00	381.13	384.21	383.48	384.40	0.004728	4.12	88.21	90.48	0.48
Plumtree	8579	2-YR	321.00	381.13	384.75		384.94	0.003945	4.34	141.08	101.78	0.46
Plumtree	8579	10-YR	719.00	381.13	385.97		386.19	0.003546	5.22	276.06	121.09	0.46
Plumtree	8579	50-YR	1263.00	381.13	387.05		387.34	0.003765	6.30	417.89	143.41	0.49
Plumtree	8579	100-YR	1578.00	381.13	387.55		387.87	0.003821	6.76	491.56	151.07	0.50
Plumtree	8579	7-30-2016	1757.00	381.13	387.81		388.15	0.003835	6.98	531.31	154.43	0.51
Plumtree	8374	1-YR	204.00	380.31	383.79		383.88	0.001467	2.73	125.40	87.23	0.28
Plumtree	8374	2-YR	321.00	380.31	384.29		384.40	0.001770	3.25	170.67	94.20	0.32
Plumtree	8374	10-YR	719.00	380.31	385.42		385.60	0.002339	4.48	286.79	111.54	0.38
Plumtree	8374	50-YR	1263.00	380.31	386.39		386.67	0.002922	5.73	401.35	123.87	0.44
Plumtree	8374	100-YR	1578.00	380.31	386.83		387.17	0.003216	6.33	456.77	130.00	0.47
Plumtree	8374	7-30-2016	1757.00	380.31	387.05		387.42	0.003372	6.65	486.33	133.64	0.48
Plumtree	8229	1-YR	204.00	379.79	382.85	382.85	383.38	0.010607	6.43	55.07	65.24	0.72
Plumtree	8229	2-YR	321.00	379.79	383.45	383.29	383.89	0.008132	6.50	101.18	86.73	0.65
Plumtree	8229	10-YR	719.00	379.79	384.50		385.00	0.008159	7.90	207.07	116.52	0.68
Plumtree	8229	50-YR	1263.00	379.79	385.40		385.97	0.008374	9.13	323.88	136.34	0.72
Plumtree	8229	100-YR	1578.00	379.79	385.82		386.43	0.008442	9.66	381.90	142.15	0.73
Plumtree	8229	7-30-2016	1757.00	379.79	386.02		386.65	0.008655	10.01	410.04	144.93	0.74
Plumtree	8094	1-YR	204.00	378.24	381.72	380.86	382.12	0.007250	5.29	52.91	63.21	0.57
Plumtree	8094	2-YR	321.00	378.24	382.06	381.98	382.66	0.010034	6.70	79.41	93.32	0.68
Plumtree	8094	10-YR	719.00	378.24	382.97	382.97	383.69	0.011307	8.47	178.49	125.63	0.75
Plumtree	8094	50-YR	1263.00	378.24	383.69	383.69	384.56	0.012929	10.14	277.14	145.63	0.83
Plumtree	8094	100-YR	1578.00	378.24	384.01	384.01	384.96	0.013794	10.94	324.44	153.05	0.87
Plumtree	8094	7-30-2016	1757.00	378.24	384.19	384.19	385.16	0.013852	11.24	353.17	157.07	0.87
Plumtree	7954	1-YR	204.00	377.79	381.03	380.76	381.13	0.005744	3.86	126.50	155.83	0.50
Plumtree	7954	2-YR	321.00	377.79	381.31	380.96	381.43	0.006206	4.41	171.28	160.64	0.53
Plumtree	7954	10-YR	719.00	377.79	382.00	381.39	382.18	0.007322	5.76	286.22	176.84	0.60
Plumtree	7954	50-YR	1263.00	377.79	382.67	381.85	382.91	0.007892	6.89	408.25	187.43	0.65
Plumtree	7954	100-YR	1578.00	377.79	383.00	382.11	383.28	0.008071	7.39	470.73	192.59	0.66
Plumtree	7954	7-30-2016	1757.00	377.79	383.18	382.22	383.47	0.008137	7.65	504.66	195.28	0.67
Plumtree	7800	1-YR	204.00	378.73	379.84		379.92	0.011082	3.70	118.96	173.24	0.67
Plumtree	7800	2-YR	321.00	378.73	380.07		380.17	0.011143	4.28	159.10	178.65	0.70
Plumtree	7800	10-YR	719.00	378.73	380.69		380.85	0.010299	5.45	272.82	188.61	0.72
Plumtree	7800	50-YR	1263.00	378.73	381.38		381.59	0.009271	6.42	405.50	199.61	0.72
Plumtree	7800	100-YR	1578.00	378.73	381.72		381.96	0.008875	6.85	475.26	205.15	0.72
Plumtree	7800	7-30-2016	1757.00	378.73	381.92		382.17	0.008574	7.04	515.52	208.28	0.71
Plumtree	7548	1-YR	204.00	375.57	378.60		378.65	0.002822	3.01	196.75	273.00	0.37
Plumtree	7548	2-YR	321.00	375.57	378.91		378.95	0.002633	3.18	281.32	279.96	0.36
Plumtree	7548	10-YR	719.00	375.57	379.71		379.76	0.002262	3.57	513.54	299.67	0.35
Plumtree	7548	50-YR	1263.00	375.57	380.52		380.59	0.002064	3.96	764.39	313.76	0.35
Plumtree	7548	100-YR	1578.00	375.57	380.89		380.96	0.002081	4.22	879.84	318.65	0.35
Plumtree	7548	7-30-2016	1757.00	375.57	381.13		381.20	0.001984	4.27	957.36	321.83	0.35
Plumtree	7367	1-YR	204.00	378.30	377.68		377.74	0.010709		102.04	116.77	0.00
Plumtree	7367	2-YR	321.00	378.30	378.00		378.08	0.010861		144.67	149.06	0.00
Plumtree	7367	10-YR	719.00	378.30	379.07		379.14	0.005740	1.57	356.70	253.88	0.42
Plumtree	7367	50-YR	1263.00	378.30	380.03		380.09	0.003787	2.45	688.75	402.02	0.40
Plumtree	7367	100-YR	1578.00	378.30	380.45		380.51	0.002975	2.67	859.19	409.55	0.38
Plumtree	7367	7-30-2016	1757.00	378.30	380.75		380.80	0.002435	2.71	981.14	414.83	0.35
Plumtree	7216	1-YR	204.00	375.26	377.08	376.50	377.12	0.002049	1.88	169.34	193.43	0.30
Plumtree	7216	2-YR	321.00	375.26	377.38	376.67	377.43	0.002170	2.25	229.45	210.41	0.33
Plumtree	7216	10-YR	719.00	375.26	378.84	377.10	378.88	0.000779	2.13	586.00	271.23	0.22
Plumtree	7216	50-YR	1263.00	375.26	379.80	377.53	379.86	0.000803	2.61	861.54	301.03	0.23
Plumtree	7216	100-YR	1578.00	375.26	380.22	377.75	380.29	0.000841	2.85	990.24	311.71	0.24
Plumtree	7216	7-30-2016	1757.00	375.26	380.53	377.86	380.60	0.000790	2.90	1089.18	318.37	0.24
Plumtree	7030	1-YR	204.00	373.43	376.00	376.00	376.26	0.015907	6.07	87.90	152.85	0.83
Plumtree	7030	2-YR	321.00	373.43	376.99		377.03	0.002086	3.00	257.31	193.58	0.33
Plumtree	7030	10-YR	719.00	373.43	378.70		378.73	0.000785	2.57	617.70	224.24	0.22
Plumtree	7030	50-YR	1263.00	373.43	379.64		379.69	0.000974	3.26	835.26	236.79	0.25
Plumtree	7030	100-YR	1578.00	373.43	380.04		380.10	0.001132	3.69	933.11	251.48	0.27
Plumtree	7030	7-30-2016	1757.00	373.43	380.36		380.43	0.001115	3.80	1014.98	260.26	0.27

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	6893	1-YR	204.00	370.68	374.17	373.50	374.35	0.004877	3.94	91.06	108.17	0.49
Plumtree	6893	2-YR	321.00	370.68	376.95		376.97	0.000164	1.29	527.15	195.09	0.10
Plumtree	6893	10-YR	719.00	370.68	378.66		378.68	0.000197	1.73	893.39	232.44	0.12
Plumtree	6893	50-YR	1263.00	370.68	379.58		379.61	0.000331	2.45	1115.15	249.92	0.16
Plumtree	6893	100-YR	1578.00	370.68	379.96		380.01	0.000409	2.82	1213.32	257.11	0.18
Plumtree	6893	7-30-2016	1757.00	370.68	380.28		380.33	0.000421	2.94	1295.97	262.05	0.18
Plumtree	6766	1-YR	204.00	369.76	373.74		373.86	0.002973	3.10	104.68	103.18	0.38
Plumtree	6766	2-YR	321.00	369.76	376.94		376.95	0.000097	1.06	630.36	226.55	0.08
Plumtree	6766	10-YR	719.00	369.76	378.64		378.66	0.000131	1.48	1062.96	285.23	0.10
Plumtree	6766	50-YR	1263.00	369.76	379.55		379.58	0.000233	2.14	1343.84	333.10	0.14
Plumtree	6766	100-YR	1578.00	369.76	379.93		379.97	0.000291	2.47	1474.17	350.00	0.15
Plumtree	6766	7-30-2016	1757.00	369.76	380.25		380.29	0.000297	2.56	1587.13	358.55	0.15
Plumtree	6663	1-YR	204.00	369.26	373.55		373.65	0.001425	2.76	111.00	93.79	0.28
Plumtree	6663	2-YR	321.00	369.26	376.93		376.94	0.000077	1.05	711.60	267.73	0.07
Plumtree	6663	10-YR	719.00	369.26	378.63		378.64	0.000100	1.40	1228.46	329.60	0.09
Plumtree	6663	50-YR	1263.00	369.26	379.53		379.55	0.000170	1.95	1533.45	346.77	0.11
Plumtree	6663	100-YR	1578.00	369.26	379.91		379.94	0.000213	2.24	1665.69	354.87	0.13
Plumtree	6663	7-30-2016	1757.00	369.26	380.23		380.26	0.000218	2.32	1779.21	358.22	0.13
Plumtree	6568	1-YR	209.00	368.65	373.37		373.50	0.001738	3.26	108.67	88.02	0.29
Plumtree	6568	2-YR	334.00	368.65	376.92		376.93	0.000089	1.14	703.22	235.13	0.07
Plumtree	6568	10-YR	772.00	368.65	378.62		378.63	0.000135	1.62	1144.01	281.83	0.09
Plumtree	6568	50-YR	1391.00	368.65	379.51		379.53	0.000254	2.36	1403.70	303.26	0.13
Plumtree	6568	100-YR	1736.00	368.65	379.87		379.91	0.000325	2.73	1517.89	315.53	0.15
Plumtree	6568	7-30-2016	2002.00	368.65	380.19		380.23	0.000368	2.96	1617.71	325.83	0.16
Plumtree	6454	1-YR	209.00	368.30	373.20		373.31	0.001465	2.82	92.88	60.63	0.29
Plumtree	6454	2-YR	334.00	368.30	376.91		376.92	0.000068	1.04	669.21	196.74	0.07
Plumtree	6454	10-YR	772.00	368.30	378.60		378.62	0.000118	1.58	1024.54	237.15	0.10
Plumtree	6454	50-YR	1391.00	368.30	379.46		379.50	0.000237	2.39	1243.83	268.53	0.14
Plumtree	6454	100-YR	1736.00	368.30	379.82		379.87	0.000308	2.80	1341.87	282.85	0.16
Plumtree	6454	7-30-2016	2002.00	368.30	380.12		380.19	0.000358	3.08	1429.12	297.48	0.17
Plumtree	6350	1-YR	209.00	366.97	373.12	370.05	373.19	0.000797	2.17	96.85	29.92	0.21
Plumtree	6350	2-YR	334.00	366.97	376.89	370.82	376.91	0.000126	1.40	351.28	116.48	0.09
Plumtree	6350	10-YR	772.00	366.97	378.53	372.46	378.60	0.000250	2.27	606.81	223.78	0.14
Plumtree	6350	50-YR	1391.00	366.97	379.33	374.07	379.46	0.000519	3.47	776.56	258.31	0.20
Plumtree	6350	100-YR	1736.00	366.97	379.64	374.85	379.82	0.000680	4.06	850.82	270.96	0.23
Plumtree	6350	7-30-2016	2002.00	366.97	379.92	375.41	380.12	0.000772	4.40	919.57	278.78	0.24
Plumtree	6296	1-YR	209.00	367.41	373.02	370.57	373.13	0.001217	2.97	93.14	32.95	0.25
Plumtree	6296	2-YR	334.00	367.41	376.86	371.29	376.90	0.000232	1.97	276.14	105.87	0.12
Plumtree	6296	10-YR	772.00	367.41	378.48	373.00	378.57	0.000508	3.29	529.86	160.37	0.18
Plumtree	6296	50-YR	1391.00	367.41	379.18	374.71	379.41	0.001144	5.16	660.58	227.56	0.28
Plumtree	6296	100-YR	1736.00	367.41	379.46	375.85	379.75	0.001497	6.01	724.21	242.28	0.32
Plumtree	6296	7-30-2016	2002.00	367.41	379.71	376.25	380.05	0.001710	6.52	787.73	260.69	0.35
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	209.00	366.39	371.05	368.06	371.11	0.000478	1.92	110.52	30.77	0.17
Plumtree	6197	2-YR	334.00	366.39	371.94	368.60	372.04	0.000612	2.48	138.99	33.29	0.20
Plumtree	6197	10-YR	772.00	366.39	373.86	370.01	374.10	0.001035	4.04	207.93	38.73	0.27
Plumtree	6197	50-YR	1391.00	366.39	375.30	371.43	375.83	0.001722	5.93	275.03	61.69	0.37
Plumtree	6197	100-YR	1736.00	366.39	375.92	372.13	376.60	0.002045	6.78	318.14	77.96	0.40
Plumtree	6197	7-30-2016	2002.00	366.39	376.34	372.64	377.14	0.002289	7.40	354.81	102.83	0.43
Plumtree	6122	1-YR	209.00	366.62	369.71	369.68	370.72	0.023394	8.05	25.96	12.69	0.99
Plumtree	6122	2-YR	334.00	366.62	370.85	370.60	371.69	0.014909	7.38	47.95	31.37	0.84
Plumtree	6122	10-YR	772.00	366.62	372.25	372.25	373.59	0.014182	9.75	101.86	45.52	0.88
Plumtree	6122	50-YR	1391.00	366.62	373.71	373.71	375.25	0.011977	11.12	185.68	77.96	0.85
Plumtree	6122	100-YR	1736.00	366.62	374.24	374.24	375.97	0.012288	12.00	219.27	86.02	0.88
Plumtree	6122	7-30-2016	2002.00	366.62	374.61	374.61	376.49	0.012534	12.63	243.03	89.74	0.90
Plumtree	6028	1-YR	209.00	365.53	369.78	368.84	369.92	0.002497	3.31	95.96	72.11	0.36
Plumtree	6028	2-YR	334.00	365.53	371.15	369.37	371.23	0.000970	2.74	217.86	106.64	0.24
Plumtree	6028	10-YR	772.00	365.53	372.84	370.39	372.95	0.001020	3.57	442.85	163.17	0.27
Plumtree	6028	50-YR	1391.00	365.53	373.92	371.34	374.08	0.001339	4.59	621.61	210.69	0.31
Plumtree	6028	100-YR	1736.00	365.53	374.42	371.79	374.61	0.001451	5.02	711.14	222.54	0.33
Plumtree	6028	7-30-2016	2002.00	365.53	374.76	372.05	374.98	0.001527	5.31	773.86	228.96	0.34
Plumtree	5926	1-YR	209.00	365.38	369.18	368.48	369.52	0.006099	5.21	57.66	36.13	0.54
Plumtree	5926	2-YR	334.00	365.38	370.93	369.08	371.09	0.001843	3.94	152.54	111.33	0.32
Plumtree	5926	10-YR	772.00	365.38	372.59	370.49	372.80	0.002003	5.05	301.05	157.60	0.36
Plumtree	5926	50-YR	1391.00	365.38	373.46	371.84	373.85	0.003371	7.14	389.92	166.44	0.47
Plumtree	5926	100-YR	1736.00	365.38	373.87	372.25	374.35	0.003986	8.06	433.95	170.56	0.52
Plumtree	5926	7-30-2016	2002.00	365.38	374.13	372.56	374.69	0.004448	8.71	463.73	172.55	0.55

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5824	1-YR	209.00	365.08	368.67		368.92	0.005100	3.99	52.34	27.16	0.51
Plumtree	5824	2-YR	334.00	365.08	370.83		370.94	0.000940	2.73	149.94	86.05	0.24
Plumtree	5824	10-YR	772.00	365.08	372.49		372.64	0.001010	3.59	372.15	161.41	0.27
Plumtree	5824	50-YR	1391.00	365.08	373.31		373.59	0.001619	4.98	509.25	170.04	0.35
Plumtree	5824	100-YR	1736.00	365.08	373.71		374.04	0.001867	5.57	577.20	174.17	0.38
Plumtree	5824	7-30-2016	2002.00	365.08	373.96		374.34	0.002066	6.01	622.21	176.90	0.40
Plumtree	5745	1-YR	209.00	363.03	368.61	366.10	368.71	0.001136	2.54	83.40	30.63	0.25
Plumtree	5745	2-YR	334.00	363.03	370.81	366.79	370.88	0.000450	2.19	182.19	82.87	0.17
Plumtree	5745	10-YR	772.00	363.03	372.40	368.46	372.57	0.000807	3.51	300.33	104.69	0.24
Plumtree	5745	50-YR	1391.00	363.03	373.03	370.09	373.44	0.001810	5.58	353.74	122.18	0.36
Plumtree	5745	100-YR	1736.00	363.03	373.27	370.82	373.84	0.002465	6.66	375.23	141.48	0.43
Plumtree	5745	7-30-2016	2002.00	363.03	373.37	371.32	374.10	0.003097	7.53	384.73	144.10	0.48
Plumtree	5711	1-YR	209.00	362.51	368.60	365.31	368.67	0.000654	2.14	102.37	36.70	0.19
Plumtree	5711	2-YR	334.00	362.51	370.81	366.07	370.86	0.000304	1.95	222.39	72.95	0.14
Plumtree	5711	10-YR	772.00	362.51	372.40	367.80	372.54	0.000621	3.27	372.40	142.63	0.21
Plumtree	5711	50-YR	1391.00	362.51	373.03	369.54	373.36	0.001381	5.16	473.57	175.23	0.32
Plumtree	5711	100-YR	1736.00	362.51	373.28	370.33	373.73	0.001853	6.09	518.47	181.80	0.37
Plumtree	5711	7-30-2016	2002.00	362.51	373.40	370.79	373.96	0.002273	6.82	540.80	184.32	0.41
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	209.00	361.81	366.73	364.14	366.80	0.000832	2.19	95.48	30.34	0.22
Plumtree	5614	2-YR	334.00	361.81	367.96	364.74	368.05	0.000724	2.44	150.46	56.18	0.21
Plumtree	5614	10-YR	772.00	361.81	371.92	366.22	371.98	0.000235	2.15	635.33	198.32	0.13
Plumtree	5614	50-YR	1391.00	361.81	372.82	367.83	372.93	0.000459	3.23	824.99	229.91	0.19
Plumtree	5614	100-YR	1736.00	361.81	373.22	368.51	373.36	0.000567	3.69	918.78	238.67	0.21
Plumtree	5614	7-30-2016	2002.00	361.81	373.37	368.95	373.55	0.000685	4.11	956.75	249.06	0.24
Plumtree	5560	1-YR	209.00	362.08	366.63		366.74	0.001389	2.66	78.61	26.15	0.27
Plumtree	5560	2-YR	334.00	362.08	367.86		367.99	0.001135	2.90	128.84	70.84	0.26
Plumtree	5560	10-YR	772.00	362.08	371.92		371.96	0.000212	2.00	853.82	300.53	0.12
Plumtree	5560	50-YR	1391.00	362.08	372.82		372.89	0.000360	2.81	1133.70	327.42	0.17
Plumtree	5560	100-YR	1736.00	362.08	373.22		373.30	0.000432	3.16	1267.89	341.16	0.18
Plumtree	5560	7-30-2016	2002.00	362.08	373.38		373.48	0.000518	3.50	1322.54	344.48	0.20
Plumtree	5510	1-YR	209.00	362.16	366.24	365.15	366.59	0.005688	4.73	44.17	17.61	0.53
Plumtree	5510	2-YR	334.00	362.16	367.51	365.92	367.87	0.004359	4.85	68.91	22.07	0.48
Plumtree	5510	10-YR	772.00	362.16	371.85	367.79	371.94	0.000537	2.98	524.31	238.12	0.19
Plumtree	5510	50-YR	1391.00	362.16	372.68	369.75	372.85	0.000943	4.24	686.95	253.31	0.26
Plumtree	5510	100-YR	1736.00	362.16	373.05	370.70	373.26	0.001144	4.81	762.11	258.51	0.29
Plumtree	5510	7-30-2016	2002.00	362.16	373.17	370.96	373.42	0.001410	5.39	786.16	260.28	0.32
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	209.00	361.52	366.16	364.20	366.35	0.002414	3.47	60.24	19.99	0.35
Plumtree	5474	2-YR	334.00	361.52	367.42	364.96	367.65	0.002234	3.80	87.81	23.95	0.35
Plumtree	5474	10-YR	772.00	361.52	371.79	366.82	371.87	0.000403	2.70	562.99	191.40	0.17
Plumtree	5474	50-YR	1391.00	361.52	372.57	368.93	372.73	0.000775	3.98	718.96	205.77	0.24
Plumtree	5474	100-YR	1736.00	361.52	372.91	369.78	373.11	0.000975	4.57	789.02	209.82	0.27
Plumtree	5474	7-30-2016	2002.00	361.52	373.16	370.28	373.39	0.001115	4.98	841.68	212.81	0.29
Plumtree	5419	1-YR	209.00	361.46	365.95	364.24	366.18	0.003099	3.87	53.96	17.98	0.39
Plumtree	5419	2-YR	334.00	361.46	367.21	365.00	367.49	0.002816	4.26	78.87	28.92	0.39
Plumtree	5419	10-YR	772.00	361.46	371.77	366.90	371.85	0.000406	2.74	565.25	211.36	0.17
Plumtree	5419	50-YR	1391.00	361.46	372.53	369.36	372.68	0.000806	4.09	699.83	223.72	0.24
Plumtree	5419	100-YR	1736.00	361.46	372.85	369.91	373.05	0.001028	4.73	759.59	227.41	0.27
Plumtree	5419	7-30-2016	2002.00	361.46	373.09	370.30	373.32	0.001187	5.16	804.53	230.10	0.29
Plumtree	5323	1-YR	209.00	361.32	365.60		365.85	0.003801	4.06	52.05	26.83	0.43
Plumtree	5323	2-YR	334.00	361.32	367.07		367.24	0.001834	3.59	132.18	71.70	0.32
Plumtree	5323	10-YR	772.00	361.32	371.77		371.81	0.000232	2.14	710.20	159.09	0.13
Plumtree	5323	50-YR	1391.00	361.32	372.51		372.60	0.000507	3.34	832.58	170.83	0.19
Plumtree	5323	100-YR	1736.00	361.32	372.83		372.95	0.000674	3.94	887.03	175.96	0.22
Plumtree	5323	7-30-2016	2002.00	361.32	373.06		373.21	0.000801	4.36	928.11	179.67	0.24
Plumtree	5209	1-YR	209.00	361.10	364.78	363.87	365.24	0.007524	5.42	38.54	14.92	0.59
Plumtree	5209	2-YR	334.00	361.10	366.87	364.69	367.04	0.001668	3.73	149.54	84.38	0.31
Plumtree	5209	10-YR	772.00	361.10	371.75	366.77	371.78	0.000187	2.03	812.16	183.02	0.12
Plumtree	5209	50-YR	1391.00	361.10	372.47	367.88	372.54	0.000420	3.19	948.93	201.90	0.18
Plumtree	5209	100-YR	1736.00	361.10	372.77	368.36	372.87	0.000572	3.79	1010.01	211.19	0.21
Plumtree	5209	7-30-2016	2002.00	361.10	372.99	368.67	373.11	0.000689	4.22	1056.64	217.95	0.23
Plumtree	5107	1-YR	209.00	359.92	363.88	363.13	364.38	0.009476	5.66	36.93	16.25	0.66
Plumtree	5107	2-YR	334.00	359.92	366.72	364.00	366.88	0.001496	3.32	115.28	44.31	0.29
Plumtree	5107	10-YR	772.00	359.92	371.68	365.89	371.75	0.000299	2.49	525.40	256.85	0.15

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5107	50-YR	1391.00	359.92	372.31	367.56	372.48	0.000682	3.93	645.34	292.99	0.23
Plumtree	5107	100-YR	1736.00	359.92	372.55	368.16	372.78	0.000931	4.67	697.55	306.91	0.26
Plumtree	5107	7-30-2016	2002.00	359.92	372.72	368.59	373.01	0.001131	5.21	736.98	321.86	0.29
Plumtree	5040	1-YR	209.00	359.23	363.54	362.44	363.86	0.005300	4.53	46.12	19.03	0.51
Plumtree	5040	2-YR	334.00	359.23	366.68	363.18	366.79	0.000875	2.73	123.35	30.29	0.23
Plumtree	5040	10-YR	772.00	359.23	371.67	364.95	371.73	0.000224	2.28	672.26	264.67	0.13
Plumtree	5040	50-YR	1391.00	359.23	372.30	366.55	372.43	0.000485	3.51	847.02	291.35	0.20
Plumtree	5040	100-YR	1736.00	359.23	372.53	367.27	372.72	0.000660	4.16	918.00	310.29	0.23
Plumtree	5040	7-30-2016	2002.00	359.23	372.70	367.79	372.93	0.000787	4.59	971.85	316.40	0.25
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	209.00	359.04	362.56	361.42	362.82	0.004248	4.10	51.00	21.34	0.47
Plumtree	4932	2-YR	334.00	359.04	364.15	362.06	364.37	0.002174	3.75	89.46	39.35	0.35
Plumtree	4932	10-YR	772.00	359.04	371.50	363.70	371.56	0.000169	2.22	650.21	200.18	0.12
Plumtree	4932	50-YR	1391.00	359.04	372.20	365.22	372.34	0.000393	3.53	803.08	237.36	0.18
Plumtree	4932	100-YR	1736.00	359.04	372.44	365.94	372.64	0.000538	4.19	860.77	241.56	0.21
Plumtree	4932	7-30-2016	2002.00	359.04	372.64	366.45	372.88	0.000643	4.63	909.55	244.99	0.24
Plumtree	4845	1-YR	209.00	357.81	362.39	360.24	362.53	0.001763	3.10	67.40	21.15	0.31
Plumtree	4845	2-YR	334.00	357.81	364.05	360.93	364.20	0.001246	3.15	110.35	42.52	0.27
Plumtree	4845	10-YR	772.00	357.81	371.50	362.69	371.53	0.000089	1.60	771.36	165.60	0.08
Plumtree	4845	50-YR	1391.00	357.81	372.21	364.94	372.28	0.000222	2.62	874.47	180.75	0.13
Plumtree	4845	100-YR	1736.00	357.81	372.45	365.55	372.55	0.000317	3.17	912.37	186.76	0.16
Plumtree	4845	7-30-2016	2002.00	357.81	372.65	365.93	372.78	0.000391	3.56	944.29	191.71	0.18
Plumtree	4745	1-YR	209.00	357.45	362.24		362.36	0.001602	2.70	77.55	28.83	0.29
Plumtree	4745	2-YR	334.00	357.45	364.01		364.09	0.000680	2.32	193.05	127.98	0.20
Plumtree	4745	10-YR	772.00	357.45	371.51		371.52	0.000020	0.79	2034.08	316.76	0.04
Plumtree	4745	50-YR	1391.00	357.45	372.24		372.25	0.000048	1.29	2269.48	330.11	0.06
Plumtree	4745	100-YR	1736.00	357.45	372.50		372.52	0.000069	1.56	2355.05	336.59	0.08
Plumtree	4745	7-30-2016	2002.00	357.45	372.71		372.73	0.000085	1.75	2426.82	341.94	0.09
Plumtree	4636	1-YR	209.00	357.61	362.13		362.22	0.000886	2.37	88.34	26.04	0.22
Plumtree	4636	2-YR	334.00	357.61	363.97		364.02	0.000362	1.99	306.98	190.27	0.15
Plumtree	4636	10-YR	772.00	357.61	371.51		371.52	0.000013	0.67	2720.78	503.38	0.03
Plumtree	4636	50-YR	1391.00	357.61	372.24		372.25	0.000031	1.08	3045.60	525.26	0.05
Plumtree	4636	100-YR	1736.00	357.61	372.50		372.51	0.000043	1.29	3162.32	532.78	0.06
Plumtree	4636	7-30-2016	2002.00	357.61	372.71		372.72	0.000053	1.45	3259.42	538.98	0.07
Plumtree	4550	1-YR	209.00	357.24	362.06	359.44	362.14	0.000925	2.28	91.66	32.00	0.23
Plumtree	4550	2-YR	334.00	357.24	363.92	360.09	363.99	0.000458	2.18	170.06	205.45	0.17
Plumtree	4550	10-YR	772.00	357.24	371.51	361.66	371.52	0.000010	0.61	2986.15	479.74	0.03
Plumtree	4550	50-YR	1391.00	357.24	372.24	363.21	372.25	0.000025	0.98	3344.55	511.94	0.05
Plumtree	4550	100-YR	1736.00	357.24	372.50	363.83	372.50	0.000035	1.18	3474.82	542.35	0.06
Plumtree	4550	7-30-2016	2002.00	357.24	372.71	364.29	372.72	0.000043	1.32	3583.68	596.53	0.06
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	209.00	351.69	359.43	354.77	359.47	0.000250	1.52	137.65	27.67	0.12
Plumtree	4344	2-YR	334.00	351.69	360.24	355.38	360.31	0.000415	2.08	160.48	28.92	0.16
Plumtree	4344	10-YR	772.00	351.69	361.83	357.02	362.04	0.000978	3.69	223.03	58.33	0.25
Plumtree	4344	50-YR	1391.00	351.69	363.09	358.67	363.51	0.001659	5.37	336.56	117.87	0.33
Plumtree	4344	100-YR	1736.00	351.69	363.67	359.42	364.18	0.001893	6.00	409.49	131.69	0.36
Plumtree	4344	7-30-2016	2002.00	351.69	364.29	359.97	364.80	0.001820	6.16	494.88	144.73	0.35
Plumtree	4289	1-YR	209.00	352.78	359.42		359.45	0.000258	1.45	144.48	33.55	0.12
Plumtree	4289	2-YR	334.00	352.78	360.22		360.28	0.000409	1.94	172.55	36.52	0.16
Plumtree	4289	10-YR	772.00	352.78	361.80		361.96	0.000859	3.27	264.37	115.93	0.24
Plumtree	4289	50-YR	1391.00	352.78	363.09		363.36	0.001215	4.43	448.17	164.09	0.29
Plumtree	4289	100-YR	1736.00	352.78	363.69		364.00	0.001300	4.83	550.43	175.91	0.30
Plumtree	4289	7-30-2016	2002.00	352.78	364.32		364.62	0.001197	4.88	664.57	190.18	0.30
Plumtree	4185	1-YR	194.00	354.77	359.13		359.37	0.004168	3.91	49.58	21.83	0.46
Plumtree	4185	2-YR	295.00	354.77	359.85		360.16	0.004244	4.45	66.28	24.22	0.47
Plumtree	4185	10-YR	741.00	354.77	361.23	360.72	361.75	0.005360	6.20	186.39	134.81	0.56
Plumtree	4185	50-YR	1395.00	354.77	362.85		363.17	0.002844	5.73	503.98	237.18	0.43
Plumtree	4185	100-YR	1765.00	354.77	363.53		363.81	0.002386	5.67	673.35	266.30	0.40
Plumtree	4185	7-30-2016	2157.00	354.77	364.19		364.44	0.002000	5.56	859.48	290.08	0.38
Plumtree	4033	1-YR	194.00	355.05	358.59		358.80	0.003219	3.69	52.60	20.78	0.41
Plumtree	4033	2-YR	295.00	355.05	359.34		359.59	0.003173	4.14	90.76	99.22	0.42
Plumtree	4033	10-YR	741.00	355.05	360.95		361.16	0.002173	4.51	323.97	176.80	0.37
Plumtree	4033	50-YR	1395.00	355.05	362.63		362.82	0.001606	4.76	696.38	290.81	0.33
Plumtree	4033	100-YR	1765.00	355.05	363.35		363.51	0.001302	4.61	913.17	308.43	0.31
Plumtree	4033	7-30-2016	2157.00	355.05	364.05		364.19	0.001106	4.52	1133.44	324.67	0.29

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	3930	1-YR	194.00	354.49	357.91	357.18	358.31	0.007228	5.04	38.76	19.95	0.60
Plumtree	3930	2-YR	295.00	354.49	358.60	357.79	359.10	0.006973	5.72	54.90	27.15	0.61
Plumtree	3930	10-YR	741.00	354.49	360.72	359.88	360.93	0.002285	4.79	348.14	200.88	0.38
Plumtree	3930	50-YR	1395.00	354.49	362.53	360.71	362.66	0.001189	4.27	749.79	240.24	0.29
Plumtree	3930	100-YR	1765.00	354.49	363.26	361.01	363.38	0.001071	4.34	929.34	254.37	0.28
Plumtree	3930	7-30-2016	2157.00	354.49	363.96	361.30	364.07	0.000969	4.39	1110.03	267.00	0.27
Plumtree	3816	1-YR	194.00	353.49	357.44	356.09	357.69	0.003718	4.05	52.55	31.80	0.43
Plumtree	3816	2-YR	295.00	353.49	358.23	356.72	358.51	0.003242	4.44	89.59	64.56	0.42
Plumtree	3816	10-YR	741.00	353.49	360.54	358.81	360.71	0.001501	4.25	366.80	160.40	0.31
Plumtree	3816	50-YR	1395.00	353.49	362.39	360.02	362.53	0.001056	4.29	699.73	212.12	0.27
Plumtree	3816	100-YR	1765.00	353.49	363.12	360.43	363.26	0.001010	4.46	835.16	226.46	0.27
Plumtree	3816	7-30-2016	2157.00	353.49	363.81	360.80	363.96	0.000979	4.63	965.21	233.53	0.27
Plumtree	3688	1-YR	194.00	352.86	357.03	355.33	357.27	0.002913	3.86	52.30	26.75	0.38
Plumtree	3688	2-YR	295.00	352.86	357.83	355.99	358.12	0.002868	4.45	85.57	56.92	0.39
Plumtree	3688	10-YR	741.00	352.86	360.30	358.41	360.51	0.001602	4.59	328.72	135.19	0.32
Plumtree	3688	50-YR	1395.00	352.86	362.18	359.76	362.37	0.001310	4.92	627.32	181.85	0.30
Plumtree	3688	100-YR	1765.00	352.86	362.92	360.27	363.11	0.001260	5.11	759.68	191.03	0.30
Plumtree	3688	7-30-2016	2157.00	352.86	363.62	360.71	363.82	0.001224	5.29	889.88	200.22	0.30
Plumtree	3550	1-YR	194.00	352.85	356.59	355.13	356.81	0.003779	3.72	52.73	26.24	0.43
Plumtree	3550	2-YR	295.00	352.85	357.47	355.87	357.71	0.002925	4.00	81.45	42.83	0.40
Plumtree	3550	10-YR	741.00	352.85	360.06	357.67	360.29	0.001523	4.32	288.27	117.95	0.32
Plumtree	3550	50-YR	1395.00	352.85	361.95	359.30	362.19	0.001318	4.86	524.35	155.83	0.31
Plumtree	3550	100-YR	1765.00	352.85	362.65	360.04	362.92	0.001369	5.25	620.56	168.72	0.32
Plumtree	3550	7-30-2016	2157.00	352.85	363.33	360.47	363.62	0.001417	5.63	716.34	186.19	0.33
Plumtree	3428	1-YR	194.00	351.86	356.15	354.43	356.39	0.003057	3.95	51.24	21.82	0.39
Plumtree	3428	2-YR	295.00	351.86	357.02	355.11	357.33	0.003184	4.55	73.72	29.36	0.41
Plumtree	3428	10-YR	741.00	351.86	359.66	357.34	360.04	0.002392	5.55	202.10	70.72	0.38
Plumtree	3428	50-YR	1395.00	351.86	361.38	359.36	361.93	0.002813	7.04	333.45	102.15	0.43
Plumtree	3428	100-YR	1765.00	351.86	361.97	360.02	362.64	0.003221	7.90	387.22	112.97	0.47
Plumtree	3428	7-30-2016	2157.00	351.86	362.57	360.65	363.32	0.003486	8.58	445.59	122.48	0.49
Plumtree	3296	1-YR	194.00	351.72	355.75		355.98	0.003120	3.85	50.42	16.51	0.39
Plumtree	3296	2-YR	295.00	351.72	356.54		356.86	0.003903	4.55	64.77	19.62	0.44
Plumtree	3296	10-YR	741.00	351.72	359.17		359.66	0.003511	5.58	138.74	42.94	0.45
Plumtree	3296	50-YR	1395.00	351.72	360.61		361.44	0.004479	7.54	246.54	105.36	0.54
Plumtree	3296	100-YR	1765.00	351.72	360.92	359.75	362.03	0.005803	8.86	280.44	117.06	0.62
Plumtree	3296	7-30-2016	2157.00	351.72	361.20	360.77	362.62	0.007125	10.11	315.47	128.11	0.69
Plumtree	3179	1-YR	194.00	350.39	355.46	353.81	355.60	0.002853	3.05	63.53	28.81	0.36
Plumtree	3179	2-YR	295.00	350.39	356.22	354.39	356.38	0.003535	3.18	92.78	49.06	0.41
Plumtree	3179	10-YR	741.00	350.39	359.25	356.25	359.37	0.000821	2.86	320.16	124.48	0.23
Plumtree	3179	50-YR	1395.00	350.39	360.86	357.30	361.04	0.000939	3.70	509.99	159.31	0.25
Plumtree	3179	100-YR	1765.00	350.39	361.26	357.85	361.51	0.001177	4.31	560.69	164.61	0.29
Plumtree	3179	7-30-2016	2157.00	350.39	361.66	358.38	361.97	0.001402	4.88	611.69	169.81	0.32
Plumtree	3077	1-YR	194.00	350.72	355.09		355.27	0.003712	3.37	59.60	65.72	0.42
Plumtree	3077	2-YR	295.00	350.72	355.99		356.11	0.001865	3.00	146.99	120.83	0.31
Plumtree	3077	10-YR	741.00	350.72	359.26		359.30	0.000301	2.01	691.71	191.49	0.14
Plumtree	3077	50-YR	1395.00	350.72	360.88		360.94	0.000393	2.68	1024.49	230.37	0.17
Plumtree	3077	100-YR	1765.00	350.72	361.30		361.38	0.000499	3.13	1123.79	241.30	0.19
Plumtree	3077	7-30-2016	2157.00	350.72	361.72		361.82	0.000597	3.54	1226.76	251.83	0.21
Plumtree	2978	1-YR	194.00	350.53	354.72	352.93	354.91	0.003428	3.56	54.56	22.85	0.41
Plumtree	2978	2-YR	295.00	350.53	355.66	353.66	355.88	0.002916	3.71	80.45	32.70	0.39
Plumtree	2978	10-YR	741.00	350.53	359.07	355.64	359.24	0.000935	3.52	292.37	89.36	0.25
Plumtree	2978	50-YR	1395.00	350.53	360.58	357.37	360.86	0.001268	4.75	479.28	152.96	0.30
Plumtree	2978	100-YR	1765.00	350.53	360.90	357.99	361.27	0.001683	5.62	529.08	162.80	0.35
Plumtree	2978	7-30-2016	2157.00	350.53	361.21	358.59	361.68	0.002088	6.42	579.74	164.06	0.39
Plumtree	2917	1-YR	194.00	350.36	354.47	352.82	354.70	0.003637	3.82	50.85	19.74	0.42
Plumtree	2917	2-YR	295.00	350.36	355.42	353.56	355.67	0.003963	4.02	73.47	29.70	0.45
Plumtree	2917	10-YR	741.00	350.36	359.01	355.69	359.18	0.000949	3.48	276.73	176.96	0.25
Plumtree	2917	50-YR	1395.00	350.36	360.58	357.13	360.76	0.000952	4.08	685.37	268.01	0.26
Plumtree	2917	100-YR	1765.00	350.36	360.91	357.92	361.14	0.001198	4.71	776.16	285.43	0.30
Plumtree	2917	7-30-2016	2157.00	350.36	361.24	358.60	361.52	0.001413	5.26	873.48	302.99	0.33
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	194.00	350.08	354.23	353.52	354.48	0.007196	4.05	48.48	35.30	0.57
Plumtree	2827	2-YR	295.00	350.08	354.88	354.06	355.15	0.005011	4.22	74.03	58.20	0.51
Plumtree	2827	10-YR	741.00	350.08	356.04	355.31	356.68	0.006890	6.60	127.69	123.18	0.64
Plumtree	2827	50-YR	1395.00	350.08	357.25	356.57	357.76	0.004757	6.74	366.06	167.47	0.56
Plumtree	2827	100-YR	1765.00	350.08	357.71	356.93	358.27	0.004799	7.23	447.05	180.62	0.57
Plumtree	2827	7-30-2016	2157.00	350.08	358.17	357.31	358.75	0.004711	7.59	532.77	191.93	0.57

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	2759	1-YR	194.00	349.32	354.01		354.20	0.002303	3.53	60.63	38.10	0.32
Plumtree	2759	2-YR	295.00	349.32	354.65		354.90	0.002644	4.21	105.51	102.66	0.36
Plumtree	2759	10-YR	741.00	349.32	355.89		356.20	0.003356	5.61	292.40	183.88	0.42
Plumtree	2759	50-YR	1395.00	349.32	357.12		357.39	0.002978	6.04	552.04	234.40	0.41
Plumtree	2759	100-YR	1765.00	349.32	357.60		357.88	0.002992	6.34	669.71	251.48	0.41
Plumtree	2759	7-30-2016	2157.00	349.32	358.08		358.35	0.002928	6.54	793.97	267.31	0.41
Plumtree	2589	1-YR	194.00	349.71	353.61		353.74	0.002925	3.59	99.38	67.53	0.36
Plumtree	2589	2-YR	295.00	349.71	354.29		354.42	0.002643	3.83	157.33	107.81	0.35
Plumtree	2589	10-YR	741.00	349.71	355.38		355.57	0.003679	5.37	303.05	153.99	0.43
Plumtree	2589	50-YR	1395.00	349.71	356.49		356.77	0.004617	6.91	508.37	230.38	0.50
Plumtree	2589	100-YR	1765.00	349.71	357.03		357.28	0.004134	6.92	635.35	247.37	0.48
Plumtree	2589	7-30-2016	2157.00	349.71	357.55		357.79	0.003720	6.92	769.08	263.57	0.46
Plumtree	2485	1-YR	194.00	349.20	352.27	352.17	353.06	0.016590	7.27	30.07	22.59	0.85
Plumtree	2485	2-YR	295.00	349.20	352.96	352.80	353.81	0.013429	7.80	51.13	38.34	0.80
Plumtree	2485	10-YR	741.00	349.20	354.61		355.05	0.006343	7.21	240.23	152.00	0.59
Plumtree	2485	50-YR	1395.00	349.20	355.97		356.29	0.004374	7.11	476.91	195.79	0.51
Plumtree	2485	100-YR	1765.00	349.20	356.57		356.86	0.003799	7.06	596.21	203.74	0.49
Plumtree	2485	7-30-2016	2157.00	349.20	357.13		357.41	0.003453	7.11	712.00	210.83	0.47
Plumtree	2331	1-YR	194.00	348.10	351.56		351.81	0.003863	4.04	48.42	21.42	0.45
Plumtree	2331	2-YR	295.00	348.10	352.38		352.69	0.003579	4.54	73.39	64.53	0.45
Plumtree	2331	10-YR	741.00	348.10	353.98		354.35	0.003255	5.66	239.48	125.68	0.45
Plumtree	2331	50-YR	1395.00	348.10	355.28		355.71	0.003258	6.65	418.02	148.91	0.47
Plumtree	2331	100-YR	1765.00	348.10	355.84		356.30	0.003329	7.12	504.14	159.72	0.49
Plumtree	2331	7-30-2016	2157.00	348.10	356.39		356.87	0.003306	7.48	594.77	169.96	0.49
Plumtree	2153	1-YR	194.00	346.39	351.13		351.30	0.002037	3.41	61.97	21.90	0.30
Plumtree	2153	2-YR	295.00	346.39	351.90		352.15	0.002475	4.11	100.30	73.87	0.33
Plumtree	2153	10-YR	741.00	346.39	353.46		353.77	0.003077	5.44	257.98	122.71	0.38
Plumtree	2153	50-YR	1395.00	346.39	354.74		355.09	0.003391	6.47	429.96	142.84	0.42
Plumtree	2153	100-YR	1765.00	346.39	355.28		355.67	0.003548	6.93	509.05	149.50	0.43
Plumtree	2153	7-30-2016	2157.00	346.39	355.83		356.23	0.003575	7.27	593.34	156.45	0.44
Plumtree	1994	1-YR	194.00	346.45	350.69		350.92	0.002877	3.81	53.72	27.63	0.37
Plumtree	1994	2-YR	295.00	346.45	351.33		351.66	0.003627	4.72	79.90	81.53	0.42
Plumtree	1994	10-YR	741.00	346.45	352.86		353.23	0.003655	5.90	246.07	133.39	0.45
Plumtree	1994	50-YR	1395.00	346.45	354.14		354.53	0.003654	6.79	442.60	171.19	0.46
Plumtree	1994	100-YR	1765.00	346.45	354.72		355.11	0.003450	6.97	544.64	176.56	0.45
Plumtree	1994	7-30-2016	2157.00	346.45	355.30		355.68	0.003318	7.19	649.26	188.61	0.45
Plumtree	1888	1-YR	194.00	345.73	350.34	348.84	350.59	0.003215	4.17	62.39	49.34	0.40
Plumtree	1888	2-YR	295.00	345.73	351.00	349.69	351.29	0.003216	4.71	102.75	73.28	0.42
Plumtree	1888	10-YR	741.00	345.73	352.55	351.73	352.85	0.003116	5.77	278.83	135.25	0.43
Plumtree	1888	50-YR	1395.00	345.73	353.80	352.63	354.15	0.003278	6.79	464.37	160.47	0.46
Plumtree	1888	100-YR	1765.00	345.73	354.38	353.02	354.74	0.003247	7.14	560.70	170.01	0.46
Plumtree	1888	7-30-2016	2157.00	345.73	354.96	353.34	355.33	0.003190	7.44	661.28	180.95	0.47
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	194.00	346.61	350.25		350.35	0.001595	2.87	108.32	72.27	0.29
Plumtree	1830	2-YR	295.00	346.61	350.92		351.02	0.001553	3.13	163.67	98.15	0.30
Plumtree	1830	10-YR	741.00	346.61	352.47		352.60	0.001499	3.92	375.28	152.68	0.31
Plumtree	1830	50-YR	1395.00	346.61	353.67		353.86	0.001791	4.96	562.31	157.05	0.35
Plumtree	1830	100-YR	1765.00	346.61	354.21		354.42	0.001949	5.47	646.65	160.33	0.37
Plumtree	1830	7-30-2016	2157.00	346.61	354.74		354.99	0.002076	5.94	733.31	165.72	0.39
Plumtree	1641	1-YR	194.00	345.19	349.67		349.90	0.003214	4.03	60.67	31.21	0.39
Plumtree	1641	2-YR	295.00	345.19	350.10		350.47	0.004626	5.24	79.12	65.80	0.48
Plumtree	1641	10-YR	741.00	345.19	351.34		351.94	0.006536	7.53	195.70	116.71	0.60
Plumtree	1641	50-YR	1395.00	345.19	352.60		353.18	0.005962	8.36	365.80	148.16	0.59
Plumtree	1641	100-YR	1765.00	345.19	353.18		353.74	0.005567	8.58	455.21	157.83	0.58
Plumtree	1641	7-30-2016	2157.00	345.19	353.80		354.33	0.004984	8.60	556.44	167.82	0.56
Plumtree	1463	1-YR	194.00	343.35	349.50		349.57	0.000925	2.19	108.95	98.09	0.22
Plumtree	1463	2-YR	295.00	343.35	349.89		350.00	0.001284	2.79	151.37	117.70	0.26
Plumtree	1463	10-YR	741.00	343.35	350.98		351.20	0.002198	4.35	296.10	147.91	0.35
Plumtree	1463	50-YR	1395.00	343.35	352.13		352.42	0.002596	5.46	484.84	181.84	0.40
Plumtree	1463	100-YR	1765.00	343.35	352.72		353.03	0.002525	5.74	596.80	195.20	0.40
Plumtree	1463	7-30-2016	2157.00	343.35	353.39		353.69	0.002250	5.80	732.26	206.47	0.38
Plumtree	1291	1-YR	408.00	344.26	349.04		349.21	0.003520	4.08	193.90	220.05	0.41
Plumtree	1291	2-YR	581.00	344.26	349.38		349.56	0.003912	4.59	270.83	239.14	0.44
Plumtree	1291	10-YR	1316.00	344.26	350.50		350.68	0.003558	5.29	588.35	314.30	0.44
Plumtree	1291	50-YR	2351.00	344.26	351.76		351.92	0.002747	5.47	1032.24	396.89	0.40
Plumtree	1291	100-YR	2995.00	344.26	352.42		352.57	0.002276	5.35	1304.94	413.55	0.37

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	1291	7-30-2016	3782.00	344.26	353.15		353.29	0.001931	5.29	1608.39	422.07	0.35
Plumtree	1124	1-YR	408.00	343.58	348.35		348.57	0.004100	4.55	207.91	243.41	0.46
Plumtree	1124	2-YR	581.00	343.58	348.81		348.96	0.003188	4.30	323.04	261.49	0.41
Plumtree	1124	10-YR	1316.00	343.58	350.07		350.19	0.002297	4.40	663.42	281.73	0.36
Plumtree	1124	50-YR	2351.00	343.58	351.41		351.53	0.001865	4.71	1061.23	311.21	0.34
Plumtree	1124	100-YR	2995.00	343.58	352.10		352.23	0.001742	4.91	1282.29	325.49	0.34
Plumtree	1124	7-30-2016	3782.00	343.58	352.85		352.99	0.001658	5.14	1529.32	337.57	0.33
Plumtree	994	1-YR	408.00	342.85	347.96		348.08	0.003020	3.47	217.30	183.00	0.39
Plumtree	994	2-YR	581.00	342.85	348.47		348.58	0.002459	3.40	320.58	206.46	0.36
Plumtree	994	10-YR	1316.00	342.85	349.75		349.89	0.002182	4.09	602.67	235.38	0.36
Plumtree	994	50-YR	2351.00	342.85	351.11		351.28	0.001954	4.70	947.57	271.54	0.36
Plumtree	994	100-YR	2995.00	342.85	351.81		351.99	0.001883	5.01	1142.33	288.19	0.36
Plumtree	994	7-30-2016	3782.00	342.85	352.55		352.75	0.001825	5.33	1363.37	303.86	0.36
Plumtree	911	1-YR	408.00	342.92	347.65		347.82	0.003134	4.12	214.38	193.54	0.40
Plumtree	911	2-YR	581.00	342.92	348.27		348.39	0.002179	3.76	340.96	213.59	0.34
Plumtree	911	10-YR	1316.00	342.92	349.59		349.71	0.002009	4.41	638.16	239.09	0.35
Plumtree	911	50-YR	2351.00	342.92	350.96		351.11	0.001899	5.04	992.45	273.53	0.35
Plumtree	911	100-YR	2995.00	342.92	351.66		351.83	0.001852	5.33	1190.22	288.71	0.35
Plumtree	911	7-30-2016	3782.00	342.92	352.42		352.60	0.001816	5.65	1413.08	303.31	0.36
Plumtree	762	1-YR	408.00	342.54	347.00		347.27	0.004547	4.67	123.45	66.72	0.49
Plumtree	762	2-YR	581.00	342.54	347.52		347.89	0.005295	5.60	187.99	161.19	0.55
Plumtree	762	10-YR	1316.00	342.54	349.12		349.36	0.002899	5.41	528.88	242.04	0.43
Plumtree	762	50-YR	2351.00	342.54	350.58		350.81	0.002265	5.70	912.56	281.55	0.40
Plumtree	762	100-YR	2995.00	342.54	351.31		351.54	0.002109	5.91	1124.41	300.48	0.39
Plumtree	762	7-30-2016	3782.00	342.54	352.09		352.32	0.001979	6.14	1363.28	314.67	0.39
Plumtree	658	1-YR	408.00	340.20	346.92		347.04	0.000944	2.81	191.04	174.69	0.24
Plumtree	658	2-YR	581.00	340.20	347.48		347.62	0.001039	3.21	302.33	225.88	0.26
Plumtree	658	10-YR	1316.00	340.20	349.02		349.16	0.001028	3.84	730.33	301.02	0.27
Plumtree	658	50-YR	2351.00	340.20	350.49		350.64	0.000974	4.29	1193.92	328.76	0.27
Plumtree	658	100-YR	2995.00	340.20	351.22		351.38	0.000975	4.56	1438.89	345.31	0.27
Plumtree	658	7-30-2016	3782.00	340.20	351.99		352.16	0.000985	4.86	1712.84	363.75	0.28
Plumtree	526	1-YR	408.00	341.63	346.78		346.90	0.001213	2.99	267.08	264.39	0.26
Plumtree	526	2-YR	581.00	341.63	347.38		347.47	0.000981	2.94	428.29	278.77	0.24
Plumtree	526	10-YR	1316.00	341.63	348.94		349.02	0.000822	3.28	891.18	311.73	0.23
Plumtree	526	50-YR	2351.00	341.63	350.41		350.50	0.000804	3.74	1371.74	340.24	0.24
Plumtree	526	100-YR	2995.00	341.63	351.14		351.24	0.000812	3.99	1623.66	352.63	0.24
Plumtree	526	7-30-2016	3782.00	341.63	351.91		352.02	0.000828	4.27	1900.65	365.72	0.25
Plumtree	380	1-YR	408.00	341.92	346.39		346.63	0.002737	4.07	136.62	138.09	0.39
Plumtree	380	2-YR	581.00	341.92	347.04	345.26	347.25	0.002220	4.07	255.24	192.08	0.36
Plumtree	380	10-YR	1316.00	341.92	348.66		348.84	0.001693	4.47	590.20	219.66	0.33
Plumtree	380	50-YR	2351.00	341.92	350.13		350.33	0.001622	5.11	923.92	236.20	0.34
Plumtree	380	100-YR	2995.00	341.92	350.84		351.06	0.001632	5.46	1094.45	241.67	0.35
Plumtree	380	7-30-2016	3782.00	341.92	351.59		351.84	0.001669	5.88	1277.89	247.14	0.36
Plumtree	146	1-YR	408.00	340.73	343.98	343.98	345.17	0.019900	8.74	46.71	19.97	1.01
Plumtree	146	2-YR	581.00	340.73	344.79	344.79	346.05	0.015185	9.06	69.34	43.36	0.92
Plumtree	146	10-YR	1316.00	340.73	346.75	346.75	347.96	0.009277	9.88	226.83	111.86	0.78
Plumtree	146	50-YR	2351.00	340.73	348.05	348.05	349.45	0.009370	11.57	391.46	141.74	0.81
Plumtree	146	100-YR	2995.00	340.73	348.63	348.63	350.16	0.009716	12.50	477.06	153.62	0.84
Plumtree	146	7-30-2016	3782.00	340.73	349.23	349.23	350.91	0.010101	13.47	572.07	164.30	0.87
Plumtree	63	1-YR	408.00	340.00	343.55	342.21	343.79	0.003500	3.88	105.20	43.59	0.44
Plumtree	63	2-YR	581.00	340.00	344.18	342.75	344.47	0.003507	4.34	134.24	50.01	0.45
Plumtree	63	10-YR	1316.00	340.00	345.91	344.22	346.45	0.003506	5.95	247.63	84.16	0.49
Plumtree	63	50-YR	2351.00	340.00	347.54	345.72	348.29	0.003501	7.28	427.06	127.03	0.52
Plumtree	63	100-YR	2995.00	340.00	348.33	346.61	349.17	0.003500	7.89	532.16	139.56	0.53
Plumtree	63	7-30-2016	3782.00	340.00	349.16	347.39	350.11	0.003503	8.50	652.88	150.66	0.54

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	10286	1-YR	396.90	396.81	0.09	2.35	0.01	2.21	100.81	119.97	150.01	0.48
Plumtree	10286	2-YR	397.10	396.98	0.12	2.33	0.01	4.42	135.53	167.05	154.15	0.59
Plumtree	10286	10-YR	397.76	397.61	0.15	2.52	0.03	19.19	248.06	328.76	169.55	0.71
Plumtree	10286	50-YR	398.27	398.01	0.26	2.49	0.01	43.78	402.92	548.31	179.33	1.14
Plumtree	10286	100-YR	398.46	398.12	0.34	2.39	0.00	57.95	481.79	660.25	180.10	1.46
Plumtree	10286	7-30-2016	398.58	398.20	0.38	2.30	0.02	68.34	532.05	732.61	180.66	1.64
Plumtree	10044	1-YR	394.55	394.38	0.18	2.60	0.01		152.30	70.70	160.05	0.73
Plumtree	10044	2-YR	394.76	394.57	0.19	2.43	0.01		195.94	111.06	181.74	0.80
Plumtree	10044	10-YR	395.21	394.81	0.41	0.61	0.10	0.00	352.99	243.01	200.40	1.68
Plumtree	10044	50-YR	395.77	395.39	0.38	0.37	0.10	0.61	514.78	479.61	234.35	1.57
Plumtree	10044	100-YR	396.07	395.74	0.34	0.37	0.08	1.81	583.55	614.64	255.67	1.37
Plumtree	10044	7-30-2016	396.26	395.95	0.32	0.37	0.07	2.89	627.52	702.59	268.46	1.29
Plumtree	9814	1-YR	391.94	391.65	0.29	0.64	0.02		223.00		43.53	0.79
Plumtree	9814	2-YR	392.32	392.01	0.31	0.55	0.01	0.00	307.00		52.13	0.83
Plumtree	9814	10-YR	394.04	393.97	0.08	0.04	0.01	25.02	446.62	124.36	272.22	0.20
Plumtree	9814	50-YR	395.30	395.24	0.06	0.03	0.00	75.79	606.58	312.63	304.39	0.16
Plumtree	9814	100-YR	395.62	395.55	0.07	0.03	0.00	98.45	706.39	395.16	315.10	0.19
Plumtree	9814	7-30-2016	395.82	395.75	0.07	0.03	0.00	113.34	765.72	453.95	317.79	0.20
Plumtree	9762	1-YR	391.29	390.84	0.45	0.16	0.09		223.00		30.27	1.18
Plumtree	9762	2-YR	391.76	391.35	0.41	0.15	0.07		303.99	3.01	69.10	1.05
Plumtree	9762	10-YR	394.00	393.94	0.05	0.02	0.01	13.36	401.79	180.85	228.01	0.14
Plumtree	9762	50-YR	395.27	395.21	0.06	0.02	0.01	47.85	598.78	348.37	286.89	0.16
Plumtree	9762	100-YR	395.59	395.52	0.07	0.02	0.01	63.60	697.60	438.80	322.86	0.19
Plumtree	9762	7-30-2016	395.79	395.71	0.08	0.02	0.01	76.36	777.04	479.60	331.68	0.22
Plumtree	9732	1-YR	391.03	390.89	0.15				223.00		34.50	0.34
Plumtree	9732	2-YR	391.54	391.35	0.19				307.00		37.47	0.41
Plumtree	9732	10-YR	393.96	393.80	0.16			3.48	589.52	2.99	166.87	0.28
Plumtree	9732	50-YR	395.24	395.11	0.14			35.62	777.35	182.03	223.95	0.28
Plumtree	9732	100-YR	395.56	395.40	0.16			49.77	900.87	249.35	235.24	0.33
Plumtree	9732	7-30-2016	395.76	395.59	0.17			60.62	974.97	297.41	241.96	0.37
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	389.52	389.31	0.21	0.36	0.02	0.20	222.44	0.37	35.83	0.49
Plumtree	9589	2-YR	390.20	389.99	0.21	0.26	0.02	1.69	303.05	2.26	43.20	0.46
Plumtree	9589	10-YR	391.43	391.04	0.39	0.26	0.09	6.73	579.96	9.31	63.32	0.76
Plumtree	9589	50-YR	392.59	392.07	0.52	0.25	0.15	71.72	891.33	31.95	135.97	1.01
Plumtree	9589	100-YR	393.12	392.60	0.52	0.23	0.14	109.22	1018.77	72.02	245.13	1.03
Plumtree	9589	7-30-2016	393.38	392.89	0.49	0.22	0.12	135.67	1074.75	122.59	267.37	1.01
Plumtree	9499	1-YR	389.15	388.97	0.18	0.44	0.01		186.11	17.89	50.97	0.45
Plumtree	9499	2-YR	389.92	389.75	0.17	0.44	0.04	0.93	271.86	48.21	124.78	0.44
Plumtree	9499	10-YR	391.08	390.88	0.20	0.31	0.01	83.22	476.71	159.07	158.77	0.56
Plumtree	9499	50-YR	392.20	391.97	0.23	0.26	0.00	241.62	702.09	319.29	171.09	0.65
Plumtree	9499	100-YR	392.74	392.51	0.24	0.25	0.00	342.65	822.44	412.91	175.97	0.70
Plumtree	9499	7-30-2016	393.03	392.79	0.25	0.25	0.00	401.05	889.30	466.65	178.49	0.72
Plumtree	9398	1-YR	388.70	388.37	0.32	0.34	0.03		204.00		15.87	0.70
Plumtree	9398	2-YR	389.45	388.92	0.53	0.52	0.04	3.60	316.02	1.38	97.70	1.12
Plumtree	9398	10-YR	390.76	390.45	0.31	0.53	0.06	157.50	444.27	117.23	167.13	0.89
Plumtree	9398	50-YR	391.93	391.67	0.26	0.48	0.09	396.08	581.21	285.71	182.79	0.89
Plumtree	9398	100-YR	392.49	392.22	0.27	0.48	0.10	541.61	663.78	372.61	192.69	0.94
Plumtree	9398	7-30-2016	392.78	392.51	0.27	0.48	0.11	624.90	706.22	425.88	196.97	0.96
Plumtree	9301	1-YR	388.33	388.11	0.22	0.49	0.02	6.54	197.46		32.60	0.46
Plumtree	9301	2-YR	388.89	388.50	0.39	0.69	0.01	18.16	300.68	2.16	69.83	0.83
Plumtree	9301	10-YR	390.17	389.23	0.94	0.82	0.18	67.49	595.00	56.51	91.28	2.11
Plumtree	9301	50-YR	391.36	390.17	1.19	0.82	0.25	159.72	881.60	221.69	100.36	2.94
Plumtree	9301	100-YR	391.91	390.59	1.32	0.82	0.28	218.07	1030.05	329.88	104.50	3.34
Plumtree	9301	7-30-2016	392.19	390.79	1.40	0.83	0.30	251.64	1114.14	391.22	106.44	3.61
Plumtree	9196	1-YR	387.81	387.40	0.42	0.89	0.09	21.05	181.15	1.80	107.80	1.13
Plumtree	9196	2-YR	388.20	387.74	0.46	0.95	0.09	70.58	241.26	9.16	121.59	1.38
Plumtree	9196	10-YR	389.17	388.82	0.34	0.95	0.03	283.70	363.76	71.53	143.82	1.26
Plumtree	9196	50-YR	390.16	389.79	0.37	1.02	0.01	567.90	521.03	174.06	154.81	1.43
Plumtree	9196	100-YR	390.64	390.24	0.39	1.05	0.00	735.39	607.63	234.98	159.38	1.54
Plumtree	9196	7-30-2016	390.89	390.48	0.41	1.07	0.00	831.04	655.76	270.20	161.92	1.59
Plumtree	8987	1-YR	386.67	386.54	0.13	0.98	0.03	16.01	152.73	35.26	115.30	0.37
Plumtree	8987	2-YR	387.15	387.00	0.15	1.05	0.03	36.74	203.26	81.00	121.03	0.47
Plumtree	8987	10-YR	388.19	387.95	0.23	1.10	0.01	116.82	356.06	246.12	132.81	0.80
Plumtree	8987	50-YR	389.13	388.79	0.34	1.03	0.03	243.69	538.75	480.56	141.71	1.22
Plumtree	8987	100-YR	389.58	389.19	0.39	0.98	0.05	323.10	636.32	618.58	145.45	1.43
Plumtree	8987	7-30-2016	389.82	389.40	0.42	0.95	0.06	369.48	689.99	697.53	147.40	1.54
Plumtree	8753	1-YR	385.66	385.24	0.42	1.15	0.07	44.58	157.65	1.76	79.52	1.22

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	8753	2-YR	386.06	385.62	0.45	1.05	0.08	109.65	203.90	7.45	87.32	1.46
Plumtree	8753	10-YR	387.08	386.73	0.35	0.85	0.04	388.16	295.62	35.22	174.86	1.42
Plumtree	8753	50-YR	388.07	387.83	0.24	0.72	0.00	838.10	358.54	66.36	231.04	1.17
Plumtree	8753	100-YR	388.55	388.33	0.22	0.67	0.01	1114.25	384.34	79.40	245.93	1.08
Plumtree	8753	7-30-2016	388.80	388.59	0.21	0.64	0.01	1259.31	397.65	100.04	251.24	1.04
Plumtree	8579	1-YR	384.40	384.21	0.19	0.49	0.03	52.18	145.55	6.26	90.48	0.60
Plumtree	8579	2-YR	384.94	384.75	0.19	0.51	0.02	108.00	190.09	22.91	101.78	0.62
Plumtree	8579	10-YR	386.19	385.97	0.22	0.57	0.01	294.81	326.95	97.24	121.09	0.80
Plumtree	8579	50-YR	387.34	387.05	0.29	0.67	0.00	554.02	500.11	208.87	143.41	1.08
Plumtree	8579	100-YR	387.87	387.55	0.33	0.71	0.00	703.84	588.35	285.81	151.07	1.20
Plumtree	8579	7-30-2016	388.15	387.81	0.34	0.72	0.00	791.63	635.54	329.83	154.43	1.26
Plumtree	8374	1-YR	383.88	383.79	0.09	0.45	0.04	54.74	149.26		87.23	0.24
Plumtree	8374	2-YR	384.40	384.29	0.11	0.48	0.03	112.10	208.90		94.20	0.33
Plumtree	8374	10-YR	385.60	385.42	0.19	0.58	0.03	329.51	388.54	0.96	111.54	0.57
Plumtree	8374	50-YR	386.67	386.39	0.29	0.67	0.03	646.21	607.80	9.00	123.87	0.88
Plumtree	8374	100-YR	387.17	386.83	0.34	0.71	0.03	834.08	727.45	16.47	130.00	1.05
Plumtree	8374	7-30-2016	387.42	387.05	0.37	0.74	0.03	941.50	793.82	21.68	133.64	1.14
Plumtree	8229	1-YR	383.38	382.85	0.53	1.17	0.04	31.07	165.38	7.55	65.24	1.44
Plumtree	8229	2-YR	383.89	383.45	0.44	1.22	0.02	87.03	206.90	27.07	86.73	1.37
Plumtree	8229	10-YR	385.00	384.50	0.50	1.29	0.02	267.02	335.99	115.98	116.52	1.84
Plumtree	8229	50-YR	385.97	385.40	0.57	1.39	0.03	519.16	473.34	270.50	136.34	2.30
Plumtree	8229	100-YR	386.43	385.82	0.61	1.44	0.03	668.78	542.25	366.97	142.15	2.51
Plumtree	8229	7-30-2016	386.65	386.02	0.64	1.46	0.03	753.29	582.19	421.52	144.93	2.67
Plumtree	8094	1-YR	382.12	381.72	0.40	0.90	0.09	12.66	189.37	1.97	63.21	0.98
Plumtree	8094	2-YR	382.66	382.06	0.59	1.08	0.14	38.77	271.28	10.95	93.32	1.51
Plumtree	8094	10-YR	383.69	382.97	0.72	1.25	0.16	165.12	445.07	108.81	125.63	2.22
Plumtree	8094	50-YR	384.56	383.69	0.87	1.39	0.19	351.85	630.88	280.28	145.63	3.00
Plumtree	8094	100-YR	384.96	384.01	0.95	1.44	0.20	461.02	727.35	389.63	153.05	3.42
Plumtree	8094	7-30-2016	385.16	384.19	0.97	1.45	0.20	527.26	774.79	454.95	157.07	3.56
Plumtree	7954	1-YR	381.13	381.03	0.10	1.20	0.01	84.35	76.38	43.27	155.83	0.58
Plumtree	7954	2-YR	381.43	381.31	0.12	1.25	0.01	135.00	100.37	85.63	160.64	0.72
Plumtree	7954	10-YR	382.18	382.00	0.18	1.33	0.01	301.75	173.10	244.15	176.84	1.12
Plumtree	7954	50-YR	382.91	382.67	0.24	1.31	0.01	547.71	255.58	459.71	187.43	1.49
Plumtree	7954	100-YR	383.28	383.00	0.27	1.30	0.01	692.79	299.98	585.23	192.59	1.66
Plumtree	7954	7-30-2016	383.47	383.18	0.29	1.29	0.01	776.06	324.38	656.56	195.28	1.75
Plumtree	7800	1-YR	379.92	379.84	0.08	1.26	0.01	47.75	51.02	105.23	173.24	0.64
Plumtree	7800	2-YR	380.17	380.07	0.10	1.20	0.02	79.11	73.26	168.63	178.65	0.79
Plumtree	7800	10-YR	380.85	380.69	0.16	1.06	0.03	194.39	142.57	382.04	188.61	1.12
Plumtree	7800	50-YR	381.59	381.38	0.22	0.96	0.05	361.14	231.58	670.28	199.61	1.39
Plumtree	7800	100-YR	381.96	381.72	0.24	0.95	0.05	461.17	281.49	835.35	205.15	1.52
Plumtree	7800	7-30-2016	382.17	381.92	0.26	0.91	0.06	519.29	309.22	928.49	208.28	1.57
Plumtree	7548	1-YR	378.65	378.60	0.05	0.91	0.00	45.78	61.92	96.30	273.00	0.33
Plumtree	7548	2-YR	378.95	378.91	0.05	0.87	0.00	103.55	74.97	142.48	279.96	0.35
Plumtree	7548	10-YR	379.76	379.71	0.05	0.62	0.00	320.89	112.14	285.98	299.67	0.41
Plumtree	7548	50-YR	380.59	380.52	0.06	0.50	0.00	629.11	156.13	477.76	313.76	0.46
Plumtree	7548	100-YR	380.96	380.89	0.07	0.45	0.00	808.31	181.16	588.53	318.65	0.51
Plumtree	7548	7-30-2016	381.20	381.13	0.07	0.40	0.01	913.35	193.44	650.21	321.83	0.51
Plumtree	7367	1-YR	377.74	377.68	0.06	0.61	0.01	0.59		203.41	116.77	
Plumtree	7367	2-YR	378.08	378.00	0.08	0.64	0.01	8.22		312.78	149.06	
Plumtree	7367	10-YR	379.14	379.07	0.07	0.25	0.01	105.67	4.95	608.38	253.88	0.15
Plumtree	7367	50-YR	380.09	380.03	0.06	0.23	0.00	302.44	30.36	930.20	402.02	0.26
Plumtree	7367	100-YR	380.51	380.45	0.06	0.22	0.00	434.96	45.12	1097.92	409.55	0.28
Plumtree	7367	7-30-2016	380.80	380.75	0.05	0.19	0.00	517.13	54.38	1185.49	414.83	0.27
Plumtree	7216	1-YR	377.12	377.08	0.04	0.83	0.02	57.16	127.66	19.18	193.43	0.15
Plumtree	7216	2-YR	377.43	377.38	0.05	0.40	0.00	92.38	190.91	37.71	210.41	0.20
Plumtree	7216	10-YR	378.88	378.84	0.04	0.15	0.00	224.60	357.76	136.64	271.23	0.14
Plumtree	7216	50-YR	379.86	379.80	0.06	0.17	0.00	410.24	582.65	270.11	301.03	0.20
Plumtree	7216	100-YR	380.29	380.22	0.07	0.18	0.00	524.71	706.65	346.63	311.71	0.23
Plumtree	7216	7-30-2016	380.60	380.53	0.07	0.17	0.00	595.16	770.12	391.73	318.37	0.23
Plumtree	7030	1-YR	376.26	376.00	0.26	1.12	0.02	112.49	83.91	7.60	152.85	1.47
Plumtree	7030	2-YR	377.03	376.99	0.04	0.06	0.01	224.51	66.12	30.37	193.58	0.31
Plumtree	7030	10-YR	378.73	378.70	0.03	0.05	0.00	506.48	93.22	119.30	224.24	0.19
Plumtree	7030	50-YR	379.69	379.64	0.05	0.07	0.00	889.30	144.04	229.65	236.79	0.29
Plumtree	7030	100-YR	380.10	380.04	0.06	0.09	0.00	1127.48	175.42	275.10	251.48	0.36
Plumtree	7030	7-30-2016	380.43	380.36	0.06	0.09	0.00	1250.41	190.66	315.93	260.26	0.37
Plumtree	6893	1-YR	374.35	374.17	0.19	0.47	0.02	47.72	153.74	2.53	108.17	0.57
Plumtree	6893	2-YR	376.97	376.95	0.01	0.02	0.00	169.02	119.86	32.12	195.09	0.05
Plumtree	6893	10-YR	378.68	378.66	0.02	0.02	0.00	410.51	218.10	90.39	232.44	0.07
Plumtree	6893	50-YR	379.61	379.58	0.04	0.03	0.00	740.52	351.86	170.62	249.92	0.14

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	6893	100-YR	380.01	379.96	0.05	0.04	0.00	933.38	425.93	218.69	257.11	0.19
Plumtree	6893	7-30-2016	380.33	380.28	0.05	0.04	0.00	1047.56	461.90	247.53	262.05	0.20
Plumtree	6766	1-YR	373.86	373.74	0.12	0.21	0.00	44.89	158.05	1.05	103.18	0.35
Plumtree	6766	2-YR	376.95	376.94	0.01	0.01	0.00	150.48	139.55	30.97	226.55	0.03
Plumtree	6766	10-YR	378.66	378.64	0.01	0.01	0.00	356.32	259.10	103.58	285.23	0.05
Plumtree	6766	50-YR	379.58	379.55	0.03	0.02	0.00	639.26	424.62	199.12	333.10	0.11
Plumtree	6766	100-YR	379.97	379.93	0.04	0.03	0.00	802.38	512.96	262.66	350.00	0.14
Plumtree	6766	7-30-2016	380.29	380.25	0.04	0.03	0.00	896.53	552.37	308.11	358.55	0.15
Plumtree	6663	1-YR	373.65	373.55	0.10	0.15	0.00	26.20	177.77	0.04	93.79	0.25
Plumtree	6663	2-YR	376.94	376.93	0.01	0.01	0.00	144.49	141.02	35.49	267.73	0.03
Plumtree	6663	10-YR	378.64	378.63	0.01	0.01	0.00	358.30	236.95	123.75	329.60	0.05
Plumtree	6663	50-YR	379.55	379.53	0.02	0.02	0.00	642.35	367.25	253.41	346.77	0.09
Plumtree	6663	100-YR	379.94	379.91	0.03	0.02	0.00	806.47	439.22	332.31	354.87	0.11
Plumtree	6663	7-30-2016	380.26	380.23	0.03	0.03	0.00	905.96	470.13	380.91	358.22	0.12
Plumtree	6568	1-YR	373.50	373.37	0.13	0.18	0.01	38.14	167.21	3.66	88.02	0.33
Plumtree	6568	2-YR	376.93	376.92	0.01	0.01	0.00	155.98	113.45	64.56	235.13	0.03
Plumtree	6568	10-YR	378.63	378.62	0.01	0.01	0.00	399.44	197.29	175.27	281.83	0.06
Plumtree	6568	50-YR	379.53	379.51	0.03	0.03	0.00	744.16	315.88	330.96	303.26	0.13
Plumtree	6568	100-YR	379.91	379.87	0.04	0.04	0.00	933.59	379.52	422.89	315.53	0.17
Plumtree	6568	7-30-2016	380.23	380.19	0.04	0.04	0.00	1077.81	424.42	499.77	325.83	0.19
Plumtree	6454	1-YR	373.31	373.20	0.12	0.11	0.01	6.07	195.99	6.94	60.63	0.26
Plumtree	6454	2-YR	376.92	376.91	0.01	0.01	0.00	58.31	160.20	115.49	196.74	0.03
Plumtree	6454	10-YR	378.62	378.60	0.02	0.02	0.00	145.97	304.98	321.05	237.15	0.06
Plumtree	6454	50-YR	379.50	379.46	0.04	0.04	0.01	277.77	508.63	604.59	268.53	0.13
Plumtree	6454	100-YR	379.87	379.82	0.05	0.05	0.01	353.81	617.10	765.09	282.85	0.17
Plumtree	6454	7-30-2016	380.19	380.12	0.06	0.05	0.01	405.51	699.89	896.61	297.48	0.20
Plumtree	6350	1-YR	373.19	373.12	0.07	0.05	0.00		208.91	0.09	29.92	0.15
Plumtree	6350	2-YR	376.91	376.89	0.03	0.01	0.00	34.13	288.68	11.18	116.48	0.05
Plumtree	6350	10-YR	378.60	378.53	0.06	0.02	0.00	144.15	577.46	50.40	223.78	0.12
Plumtree	6350	50-YR	379.46	379.33	0.13	0.04	0.01	308.90	961.76	120.34	258.31	0.27
Plumtree	6350	100-YR	379.82	379.64	0.18	0.05	0.01	411.06	1161.09	163.86	270.96	0.36
Plumtree	6350	7-30-2016	380.12	379.92	0.20	0.06	0.01	504.52	1295.85	201.64	278.78	0.42
Plumtree	6296	1-YR	373.13	373.02	0.12			36.39	171.66	0.95	32.95	0.26
Plumtree	6296	2-YR	376.90	376.86	0.04			100.21	213.69	20.09	105.87	0.09
Plumtree	6296	10-YR	378.57	378.48	0.10			287.44	426.36	58.20	160.37	0.25
Plumtree	6296	50-YR	379.41	379.18	0.23			591.02	718.34	81.65	227.56	0.60
Plumtree	6296	100-YR	379.75	379.46	0.30			757.27	857.56	121.17	242.28	0.80
Plumtree	6296	7-30-2016	380.05	379.71	0.34			890.52	952.41	159.07	260.69	0.93
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	371.11	371.05	0.06	0.11	0.29	0.30	208.58	0.13	30.77	0.11
Plumtree	6197	2-YR	372.04	371.94	0.10	0.13	0.22	1.60	331.65	0.75	33.29	0.17
Plumtree	6197	10-YR	374.10	373.86	0.25	0.19	0.33	12.46	753.40	6.14	38.73	0.40
Plumtree	6197	50-YR	375.83	375.30	0.53	0.27	0.30	29.13	1343.07	18.80	61.69	0.81
Plumtree	6197	100-YR	376.60	375.92	0.68	0.31	0.31	50.03	1652.33	33.64	77.96	1.04
Plumtree	6197	7-30-2016	377.14	376.34	0.80	0.34	0.32	64.02	1889.14	48.84	102.83	1.21
Plumtree	6122	1-YR	370.72	369.71	1.01	0.54	0.26		209.00		12.69	2.46
Plumtree	6122	2-YR	371.69	370.85	0.84	0.23	0.23	0.54	331.17	2.29	31.37	1.93
Plumtree	6122	10-YR	373.59	372.25	1.33	0.24	0.37	25.08	691.11	55.81	45.52	2.90
Plumtree	6122	50-YR	375.25	373.71	1.54	0.29	0.41	138.43	1087.85	164.72	77.96	3.38
Plumtree	6122	100-YR	375.97	374.24	1.73	0.31	0.46	216.18	1293.53	226.29	86.02	3.82
Plumtree	6122	7-30-2016	376.49	374.61	1.87	0.32	0.50	278.81	1447.28	275.92	89.74	4.14
Plumtree	6028	1-YR	369.92	369.78	0.14	0.38	0.02	39.35	167.45	2.19	72.11	0.37
Plumtree	6028	2-YR	371.23	371.15	0.08	0.13	0.01	105.78	212.90	15.32	106.64	0.22
Plumtree	6028	10-YR	372.95	372.84	0.11	0.14	0.01	303.84	396.52	71.64	163.17	0.33
Plumtree	6028	50-YR	374.08	373.92	0.17	0.20	0.02	625.34	608.04	157.62	210.69	0.52
Plumtree	6028	100-YR	374.61	374.42	0.19	0.23	0.03	809.15	714.56	212.30	222.54	0.61
Plumtree	6028	7-30-2016	374.98	374.76	0.21	0.25	0.03	948.15	792.15	261.70	228.96	0.67
Plumtree	5926	1-YR	369.52	369.18	0.34	0.57	0.03	46.97	160.62	1.41	36.13	0.92
Plumtree	5926	2-YR	371.09	370.93	0.16	0.13	0.01	106.85	196.17	30.99	111.33	0.45
Plumtree	5926	10-YR	372.80	372.59	0.21	0.14	0.02	242.82	342.12	187.06	157.60	0.66
Plumtree	5926	50-YR	373.85	373.46	0.39	0.23	0.04	424.41	551.55	415.05	166.44	1.27
Plumtree	5926	100-YR	374.35	373.87	0.49	0.27	0.05	521.71	657.81	556.48	170.56	1.59
Plumtree	5926	7-30-2016	374.69	374.13	0.56	0.30	0.06	594.51	736.31	671.18	172.55	1.83
Plumtree	5824	1-YR	368.92	368.67	0.25	0.17	0.04		209.00		27.16	0.59
Plumtree	5824	2-YR	370.94	370.83	0.11	0.05	0.01	7.63	317.84	8.53	86.05	0.22
Plumtree	5824	10-YR	372.64	372.49	0.16	0.07	0.00	78.43	597.57	96.01	161.41	0.33
Plumtree	5824	50-YR	373.59	373.31	0.27	0.14	0.01	186.68	954.94	249.38	170.04	0.61
Plumtree	5824	100-YR	374.04	373.71	0.33	0.17	0.02	254.30	1134.21	347.49	174.17	0.75

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5824	7-30-2016	374.34	373.96	0.37	0.20	0.04	307.51	1269.76	424.74	176.90	0.87
Plumtree	5745	1-YR	368.71	368.61	0.10	0.03	0.01		208.73	0.27	30.63	0.20
Plumtree	5745	2-YR	370.88	370.81	0.07	0.01	0.00	4.75	313.27	15.97	82.87	0.13
Plumtree	5745	10-YR	372.57	372.40	0.17	0.02	0.01	56.34	661.19	54.47	104.69	0.31
Plumtree	5745	50-YR	373.44	373.03	0.41	0.05	0.02	135.52	1149.76	105.73	122.18	0.75
Plumtree	5745	100-YR	373.84	373.27	0.58	0.07	0.04	185.18	1415.90	134.92	141.48	1.06
Plumtree	5745	7-30-2016	374.10	373.37	0.73	0.09	0.05	221.51	1623.51	156.97	144.10	1.34
Plumtree	5711	1-YR	368.67	368.60	0.07				207.11	1.89	36.70	0.14
Plumtree	5711	2-YR	370.86	370.81	0.05			4.30	302.08	27.62	72.95	0.10
Plumtree	5711	10-YR	372.54	372.40	0.14			34.80	645.30	91.90	142.63	0.26
Plumtree	5711	50-YR	373.36	373.03	0.33			91.78	1102.67	196.55	175.23	0.62
Plumtree	5711	100-YR	373.73	373.28	0.45			129.84	1344.07	262.09	181.80	0.86
Plumtree	5711	7-30-2016	373.96	373.40	0.56			157.93	1525.39	318.69	184.32	1.07
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	366.80	366.73	0.07	0.06	0.01		209.00		30.34	0.15
Plumtree	5614	2-YR	368.05	367.96	0.09	0.05	0.01	6.63	327.37		56.18	0.17
Plumtree	5614	10-YR	371.98	371.92	0.05	0.01	0.01	129.06	573.20	69.74	198.32	0.11
Plumtree	5614	50-YR	372.93	372.82	0.11	0.02	0.02	242.99	955.89	192.13	229.91	0.23
Plumtree	5614	100-YR	373.36	373.22	0.14	0.03	0.03	321.74	1143.04	271.22	238.67	0.30
Plumtree	5614	7-30-2016	373.55	373.37	0.18	0.03	0.04	383.86	1293.03	325.11	249.06	0.37
Plumtree	5560	1-YR	366.74	366.63	0.11	0.12	0.02		209.00		26.15	0.23
Plumtree	5560	2-YR	367.99	367.86	0.13	0.10	0.02	2.90	328.44	2.66	70.84	0.25
Plumtree	5560	10-YR	371.96	371.92	0.04	0.02	0.01	212.34	457.67	101.99	300.53	0.09
Plumtree	5560	50-YR	372.89	372.82	0.07	0.03	0.01	449.94	711.92	229.14	327.42	0.18
Plumtree	5560	100-YR	373.30	373.22	0.08	0.03	0.01	590.46	838.88	306.66	341.16	0.22
Plumtree	5560	7-30-2016	373.48	373.38	0.10	0.04	0.02	696.49	944.43	361.08	344.48	0.27
Plumtree	5510	1-YR	366.59	366.24	0.35	0.05	0.01		209.00		17.61	0.78
Plumtree	5510	2-YR	367.87	367.51	0.37	0.04	0.01		334.00	0.00	22.07	0.76
Plumtree	5510	10-YR	371.94	371.85	0.09	0.01	0.02	138.65	492.86	140.49	238.12	0.22
Plumtree	5510	50-YR	372.85	372.68	0.17	0.01	0.04	289.12	780.38	321.50	253.31	0.42
Plumtree	5510	100-YR	373.26	373.05	0.21	0.01	0.05	377.32	924.39	434.28	258.51	0.53
Plumtree	5510	7-30-2016	373.42	373.17	0.26			440.71	1049.72	511.57	260.28	0.67
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	366.35	366.16	0.19	0.15	0.01		209.00		19.99	0.39
Plumtree	5474	2-YR	367.65	367.42	0.22	0.14	0.02	0.00	334.00		23.95	0.44
Plumtree	5474	10-YR	371.87	371.79	0.08	0.02	0.00	165.31	520.77	85.92	191.40	0.17
Plumtree	5474	50-YR	372.73	372.57	0.16	0.04	0.00	338.85	842.74	209.40	205.77	0.36
Plumtree	5474	100-YR	373.11	372.91	0.20	0.05	0.00	439.65	1006.46	289.89	209.82	0.48
Plumtree	5474	7-30-2016	373.39	373.16	0.23	0.06	0.00	519.68	1125.44	356.88	212.81	0.56
Plumtree	5419	1-YR	366.18	365.95	0.23	0.33	0.00		209.00		17.98	0.50
Plumtree	5419	2-YR	367.49	367.21	0.28	0.21	0.03	0.06	333.93	0.00	28.92	0.56
Plumtree	5419	10-YR	371.85	371.77	0.08	0.03	0.01	170.54	473.67	127.78	211.36	0.18
Plumtree	5419	50-YR	372.68	372.53	0.15	0.06	0.02	348.52	770.90	271.58	223.72	0.38
Plumtree	5419	100-YR	373.05	372.85	0.20	0.08	0.02	452.07	923.02	360.92	227.41	0.51
Plumtree	5419	7-30-2016	373.32	373.09	0.23	0.09	0.03	534.46	1033.88	433.66	230.10	0.60
Plumtree	5323	1-YR	365.85	365.60	0.26	0.59	0.02	0.13	208.87		26.83	0.56
Plumtree	5323	2-YR	367.24	367.07	0.17	0.20	0.00	44.16	288.52	1.32	71.70	0.39
Plumtree	5323	10-YR	371.81	371.77	0.04	0.02	0.00	304.99	372.29	94.72	159.09	0.11
Plumtree	5323	50-YR	372.60	372.51	0.09	0.05	0.01	572.08	631.26	187.66	170.83	0.25
Plumtree	5323	100-YR	372.95	372.83	0.12	0.07	0.01	725.90	768.68	241.42	175.96	0.35
Plumtree	5323	7-30-2016	373.21	373.06	0.15	0.09	0.01	846.52	870.85	284.63	179.67	0.42
Plumtree	5209	1-YR	365.24	364.78	0.46	0.85	0.00		209.00		14.92	1.03
Plumtree	5209	2-YR	367.04	366.87	0.17	0.16	0.00	50.70	264.06	19.24	84.38	0.40
Plumtree	5209	10-YR	371.78	371.75	0.03	0.02	0.00	307.01	297.45	167.55	183.02	0.09
Plumtree	5209	50-YR	372.54	372.47	0.07	0.05	0.01	568.19	503.94	318.87	201.90	0.22
Plumtree	5209	100-YR	372.87	372.77	0.10	0.07	0.01	710.05	617.27	408.69	211.19	0.32
Plumtree	5209	7-30-2016	373.11	372.99	0.12	0.09	0.02	821.00	701.52	479.48	217.95	0.39
Plumtree	5107	1-YR	364.38	363.88	0.50	0.47	0.05		209.00		16.25	1.16
Plumtree	5107	2-YR	366.88	366.72	0.16	0.08	0.01		320.65	13.35	44.31	0.33
Plumtree	5107	10-YR	371.75	371.68	0.07	0.02	0.00	78.41	544.86	148.73	256.85	0.14
Plumtree	5107	50-YR	372.48	372.31	0.17	0.04	0.01	198.33	922.34	270.33	292.99	0.35
Plumtree	5107	100-YR	372.78	372.55	0.23	0.05	0.01	274.15	1123.05	338.80	306.91	0.49
Plumtree	5107	7-30-2016	373.01	372.72	0.29	0.06	0.02	334.93	1274.57	392.50	321.86	0.60
Plumtree	5040	1-YR	363.86	363.54	0.32				209.00		19.03	0.72
Plumtree	5040	2-YR	366.79	366.68	0.12			0.05	333.76	0.19	30.29	0.21
Plumtree	5040	10-YR	371.73	371.67	0.06			130.40	596.89	44.71	264.67	0.12
Plumtree	5040	50-YR	372.43	372.30	0.14			311.00	978.58	101.41	291.35	0.27

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5040	100-YR	372.72	372.53	0.19			412.53	1186.60	136.87	310.29	0.37
Plumtree	5040	7-30-2016	372.93	372.70	0.22			504.52	1332.06	165.42	316.40	0.45
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	362.82	362.56	0.26	0.23	0.06		209.00		21.34	0.58
Plumtree	4932	2-YR	364.37	364.15	0.22	0.14	0.03	0.23	333.76	0.01	39.35	0.43
Plumtree	4932	10-YR	371.56	371.50	0.06	0.01	0.02	124.26	611.29	36.45	200.18	0.10
Plumtree	4932	50-YR	372.34	372.20	0.15	0.03	0.04	259.69	1035.00	96.31	237.36	0.26
Plumtree	4932	100-YR	372.64	372.44	0.20	0.04	0.05	350.97	1253.24	131.79	241.56	0.36
Plumtree	4932	7-30-2016	372.88	372.64	0.24	0.04	0.05	429.40	1409.87	162.73	244.99	0.44
Plumtree	4845	1-YR	362.53	362.39	0.15	0.17	0.01		209.00		21.15	0.31
Plumtree	4845	2-YR	364.20	364.05	0.15	0.09	0.02	1.29	332.71		42.52	0.29
Plumtree	4845	10-YR	371.53	371.50	0.03	0.00	0.01	232.04	485.36	54.61	165.60	0.05
Plumtree	4845	50-YR	372.28	372.21	0.07	0.01	0.02	429.79	846.24	114.97	180.75	0.14
Plumtree	4845	100-YR	372.55	372.45	0.10	0.01	0.03	541.06	1044.30	150.63	186.76	0.21
Plumtree	4845	7-30-2016	372.78	372.65	0.13	0.02	0.03	627.67	1192.11	182.22	191.71	0.26
Plumtree	4745	1-YR	362.36	362.24	0.11	0.13	0.01		209.00		28.83	0.24
Plumtree	4745	2-YR	364.09	364.01	0.08	0.05	0.01	16.29	310.11	7.60	127.98	0.16
Plumtree	4745	10-YR	371.52	371.51	0.00	0.00	0.00	173.15	300.70	298.15	316.76	0.01
Plumtree	4745	50-YR	372.25	372.24	0.01	0.00	0.00	319.03	519.17	552.80	330.11	0.03
Plumtree	4745	100-YR	372.52	372.50	0.02	0.01	0.00	402.62	640.36	693.02	336.59	0.05
Plumtree	4745	7-30-2016	372.73	372.71	0.02	0.01	0.00	468.44	731.39	802.17	341.94	0.06
Plumtree	4636	1-YR	362.22	362.13	0.09	0.08	0.00	0.01	208.99		26.04	0.17
Plumtree	4636	2-YR	364.02	363.97	0.05	0.03	0.00	5.57	266.80	61.63	190.27	0.11
Plumtree	4636	10-YR	371.52	371.51	0.00	0.00	0.00	101.62	216.08	454.29	503.38	0.01
Plumtree	4636	50-YR	372.25	372.24	0.01	0.00	0.00	198.50	365.38	827.12	525.26	0.02
Plumtree	4636	100-YR	372.51	372.50	0.01	0.00	0.00	253.77	446.65	1035.58	532.78	0.03
Plumtree	4636	7-30-2016	372.72	372.71	0.01	0.00	0.00	298.13	506.66	1197.21	538.98	0.04
Plumtree	4550	1-YR	362.14	362.06	0.08				208.98	0.02	32.00	0.17
Plumtree	4550	2-YR	363.99	363.92	0.07			0.63	321.98	11.39	205.45	0.13
Plumtree	4550	10-YR	371.52	371.51	0.00			88.77	230.36	452.87	479.74	0.01
Plumtree	4550	50-YR	372.25	372.24	0.01			173.05	394.74	823.22	511.94	0.02
Plumtree	4550	100-YR	372.50	372.50	0.01			221.19	483.57	1031.25	542.35	0.03
Plumtree	4550	7-30-2016	372.72	372.71	0.01			260.02	549.40	1192.58	596.53	0.03
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	359.47	359.43	0.04	0.01	0.00		209.00		27.67	0.06
Plumtree	4344	2-YR	360.31	360.24	0.07	0.02	0.00		334.00		28.92	0.12
Plumtree	4344	10-YR	362.04	361.83	0.21	0.05	0.02	0.84	764.96	6.20	58.33	0.35
Plumtree	4344	50-YR	363.51	363.09	0.42	0.08	0.07	24.08	1315.05	51.86	117.87	0.69
Plumtree	4344	100-YR	364.18	363.67	0.51	0.08	0.10	51.17	1573.60	111.24	131.69	0.85
Plumtree	4344	7-30-2016	364.80	364.29	0.51	0.08	0.10	87.69	1727.13	187.17	144.73	0.87
Plumtree	4289	1-YR	359.45	359.42	0.03	0.07	0.02		209.00		33.55	0.06
Plumtree	4289	2-YR	360.28	360.22	0.06	0.09	0.02		334.00		36.52	0.11
Plumtree	4289	10-YR	361.96	361.80	0.16	0.18	0.04	2.29	760.65	9.06	115.93	0.28
Plumtree	4289	50-YR	363.36	363.09	0.28	0.19	0.00	62.16	1253.70	75.14	164.09	0.48
Plumtree	4289	100-YR	364.00	363.69	0.31	0.18	0.01	119.73	1479.88	136.39	175.91	0.56
Plumtree	4289	7-30-2016	364.62	364.32	0.30	0.16	0.02	189.72	1614.68	197.61	190.18	0.55
Plumtree	4185	1-YR	359.37	359.13	0.24	0.55	0.01		194.00		21.83	0.54
Plumtree	4185	2-YR	360.16	359.85	0.31	0.55	0.02		295.00		24.22	0.66
Plumtree	4185	10-YR	361.75	361.23	0.52	0.49	0.09	106.46	633.73	0.81	134.81	1.15
Plumtree	4185	50-YR	363.17	362.85	0.32	0.32	0.04	466.16	833.83	95.00	237.18	0.87
Plumtree	4185	100-YR	363.81	363.53	0.28	0.26	0.04	655.96	927.87	181.18	266.30	0.82
Plumtree	4185	7-30-2016	364.44	364.19	0.25	0.22	0.03	858.61	1009.48	288.92	290.08	0.76
Plumtree	4033	1-YR	358.80	358.59	0.21	0.48	0.02		194.00		20.78	0.47
Plumtree	4033	2-YR	359.59	359.34	0.26	0.47	0.02		284.33	10.67	99.22	0.55
Plumtree	4033	10-YR	361.16	360.95	0.21	0.23	0.00	16.61	475.19	249.20	176.80	0.57
Plumtree	4033	50-YR	362.82	362.63	0.19	0.14	0.02	124.49	683.08	587.43	290.81	0.57
Plumtree	4033	100-YR	363.51	363.35	0.15	0.12	0.01	188.14	736.81	840.06	308.43	0.52
Plumtree	4033	7-30-2016	364.19	364.05	0.14	0.11	0.01	256.49	794.37	1106.14	324.67	0.48
Plumtree	3930	1-YR	358.31	357.91	0.39	0.57	0.04	0.14	193.86		19.95	0.91
Plumtree	3930	2-YR	359.10	358.60	0.50	0.52	0.07	4.06	290.94		27.15	1.09
Plumtree	3930	10-YR	360.93	360.72	0.22	0.21	0.01	55.12	433.14	252.74	200.88	0.63
Plumtree	3930	50-YR	362.66	362.53	0.13	0.13	0.00	171.80	531.60	691.60	240.24	0.45
Plumtree	3930	100-YR	363.38	363.26	0.12	0.12	0.00	247.62	599.38	918.00	254.37	0.45
Plumtree	3930	7-30-2016	364.07	363.96	0.12	0.11	0.00	348.30	663.17	1145.53	267.00	0.45
Plumtree	3816	1-YR	357.69	357.44	0.25	0.42	0.01		190.57	3.43	31.80	0.55
Plumtree	3816	2-YR	358.51	358.23	0.28	0.39	0.00	1.67	271.09	22.24	64.56	0.62
Plumtree	3816	10-YR	360.71	360.54	0.17	0.20	0.00	62.32	432.52	246.16	160.40	0.48

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	3816	50-YR	362.53	362.39	0.14	0.15	0.01	190.02	577.09	627.89	212.12	0.44
Plumtree	3816	100-YR	363.26	363.12	0.14	0.14	0.01	270.23	657.03	837.75	226.46	0.46
Plumtree	3816	7-30-2016	363.96	363.81	0.15	0.14	0.01	356.97	739.24	1060.79	233.53	0.49
Plumtree	3688	1-YR	357.27	357.03	0.23	0.46	0.00	0.92	192.99	0.09	26.75	0.49
Plumtree	3688	2-YR	358.12	357.83	0.29	0.40	0.01	8.61	278.06	8.33	56.92	0.60
Plumtree	3688	10-YR	360.51	360.30	0.21	0.22	0.00	96.43	464.21	180.37	135.19	0.54
Plumtree	3688	50-YR	362.37	362.18	0.19	0.18	0.00	258.95	643.92	492.13	181.85	0.57
Plumtree	3688	100-YR	363.11	362.92	0.19	0.18	0.01	366.63	727.45	670.91	191.03	0.60
Plumtree	3688	7-30-2016	363.82	363.62	0.20	0.18	0.01	482.31	812.23	862.46	200.22	0.63
Plumtree	3550	1-YR	356.81	356.59	0.22	0.41	0.00	0.27	193.73		26.24	0.49
Plumtree	3550	2-YR	357.71	357.47	0.24	0.37	0.01	6.04	288.32	0.65	42.83	0.51
Plumtree	3550	10-YR	360.29	360.06	0.23	0.23	0.02	95.93	569.13	75.94	117.95	0.49
Plumtree	3550	50-YR	362.19	361.95	0.24	0.23	0.03	304.35	850.14	240.51	155.83	0.56
Plumtree	3550	100-YR	362.92	362.65	0.27	0.24	0.04	417.69	1004.61	342.70	168.72	0.64
Plumtree	3550	7-30-2016	363.62	363.33	0.29	0.26	0.05	532.42	1164.39	460.18	186.19	0.71
Plumtree	3428	1-YR	356.39	356.15	0.24	0.41	0.00	1.47	192.53		21.82	0.51
Plumtree	3428	2-YR	357.33	357.02	0.31	0.47	0.00	11.44	283.56		29.36	0.64
Plumtree	3428	10-YR	360.04	359.66	0.39	0.38	0.01	124.66	583.93	32.41	70.72	0.80
Plumtree	3428	50-YR	361.93	361.38	0.55	0.46	0.03	311.58	938.31	145.11	102.15	1.19
Plumtree	3428	100-YR	362.64	361.97	0.66	0.56	0.04	412.08	1127.89	225.03	112.97	1.46
Plumtree	3428	7-30-2016	363.32	362.57	0.76	0.64	0.07	517.83	1308.86	330.31	122.48	1.68
Plumtree	3296	1-YR	355.98	355.75	0.23	0.35	0.03		194.00		16.51	0.49
Plumtree	3296	2-YR	356.86	356.54	0.32	0.43	0.05		295.00		19.62	0.67
Plumtree	3296	10-YR	359.66	359.17	0.48	0.17	0.11	2.01	736.12	2.87	42.94	0.89
Plumtree	3296	50-YR	361.44	360.61	0.82	0.21	0.19	19.56	1298.84	76.60	105.36	1.48
Plumtree	3296	100-YR	362.03	360.92	1.11	0.26	0.26	30.02	1602.86	132.12	117.06	2.01
Plumtree	3296	7-30-2016	362.62	361.20	1.41	0.31	0.33	42.85	1909.43	204.72	128.11	2.57
Plumtree	3179	1-YR	355.60	355.46	0.14	0.33	0.00		194.00		28.81	0.34
Plumtree	3179	2-YR	356.38	356.22	0.16	0.26	0.01	0.00	295.00		49.06	0.38
Plumtree	3179	10-YR	359.37	359.25	0.12	0.05	0.03	18.49	688.59	33.92	124.48	0.23
Plumtree	3179	50-YR	361.04	360.86	0.18	0.06	0.04	59.39	1177.18	158.44	159.31	0.34
Plumtree	3179	100-YR	361.51	361.26	0.24	0.07	0.05	83.49	1457.88	223.63	164.61	0.46
Plumtree	3179	7-30-2016	361.97	361.66	0.31	0.09	0.06	112.14	1746.71	298.15	169.81	0.58
Plumtree	3077	1-YR	355.27	355.09	0.18	0.35	0.00	0.41	193.59		65.72	0.42
Plumtree	3077	2-YR	356.11	355.99	0.12	0.23	0.01	37.10	251.63	6.27	120.83	0.30
Plumtree	3077	10-YR	359.30	359.26	0.04	0.05	0.01	250.92	362.19	127.89	191.49	0.10
Plumtree	3077	50-YR	360.94	360.88	0.06	0.06	0.02	494.61	612.70	287.69	230.37	0.17
Plumtree	3077	100-YR	361.38	361.30	0.08	0.08	0.03	637.60	753.92	373.48	241.30	0.23
Plumtree	3077	7-30-2016	361.82	361.72	0.10	0.10	0.04	793.92	896.41	466.67	251.83	0.29
Plumtree	2978	1-YR	354.91	354.72	0.20	0.21	0.00		194.00		22.85	0.45
Plumtree	2978	2-YR	355.88	355.66	0.21	0.21	0.00		294.65	0.35	32.70	0.46
Plumtree	2978	10-YR	359.24	359.07	0.17	0.06	0.00	35.78	627.06	78.16	89.36	0.32
Plumtree	2978	50-YR	360.86	360.58	0.27	0.07	0.03	145.67	1054.02	195.31	152.96	0.54
Plumtree	2978	100-YR	361.27	360.90	0.37	0.09	0.04	211.10	1298.16	255.74	162.80	0.74
Plumtree	2978	7-30-2016	361.68	361.21	0.47	0.10	0.06	295.16	1540.82	321.02	164.06	0.96
Plumtree	2917	1-YR	354.70	354.47	0.23				194.00		19.74	0.50
Plumtree	2917	2-YR	355.67	355.42	0.25			0.00	295.00		29.70	0.56
Plumtree	2917	10-YR	359.18	359.01	0.17			47.58	653.77	39.65	176.96	0.31
Plumtree	2917	50-YR	360.76	360.58	0.18			312.65	970.43	111.92	268.01	0.40
Plumtree	2917	100-YR	361.14	360.91	0.24			448.57	1169.34	147.09	285.43	0.52
Plumtree	2917	7-30-2016	361.52	361.24	0.28			609.44	1361.55	186.01	302.99	0.65
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	354.48	354.23	0.25	0.25	0.03	0.27	193.73		35.30	0.65
Plumtree	2827	2-YR	355.15	354.88	0.27	0.24	0.01	4.90	289.37	0.73	58.20	0.64
Plumtree	2827	10-YR	356.68	356.04	0.64	0.31	0.16	27.61	696.35	17.04	123.18	1.35
Plumtree	2827	50-YR	357.76	357.25	0.51	0.25	0.12	359.53	970.41	65.06	167.47	1.27
Plumtree	2827	100-YR	358.27	357.71	0.55	0.25	0.14	513.02	1147.52	104.46	180.62	1.41
Plumtree	2827	7-30-2016	358.75	358.17	0.58	0.24	0.15	689.72	1316.63	150.65	191.93	1.51
Plumtree	2759	1-YR	354.20	354.01	0.19	0.44	0.02	3.00	190.89	0.11	38.10	0.40
Plumtree	2759	2-YR	354.90	354.65	0.25	0.45	0.04	20.74	267.81	6.45	102.66	0.54
Plumtree	2759	10-YR	356.20	355.89	0.31	0.59	0.03	175.08	459.67	106.25	183.88	0.88
Plumtree	2759	50-YR	357.39	357.12	0.27	0.62	0.00	453.73	603.97	337.30	234.40	0.96
Plumtree	2759	100-YR	357.88	357.60	0.28	0.59	0.01	614.78	679.23	471.00	251.48	1.03
Plumtree	2759	7-30-2016	358.35	358.08	0.27	0.56	0.01	788.54	747.32	621.14	267.31	1.07
Plumtree	2589	1-YR	353.74	353.61	0.13	0.61	0.07		112.49	81.51	67.53	0.44
Plumtree	2589	2-YR	354.42	354.29	0.13	0.53	0.07	0.88	146.53	147.60	107.81	0.47
Plumtree	2589	10-YR	355.57	355.38	0.20	0.50	0.02	40.39	264.85	435.76	153.99	0.84
Plumtree	2589	50-YR	356.77	356.49	0.28	0.47	0.00	178.14	420.08	796.77	230.38	1.31

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	2589	100-YR	357.28	357.03	0.25	0.42	0.00	261.33	458.65	1045.02	247.37	1.27
Plumtree	2589	7-30-2016	357.79	357.55	0.24	0.38	0.00	352.56	495.32	1309.12	263.57	1.24
Plumtree	2485	1-YR	353.06	352.27	0.80	1.09	0.16	6.08	187.92		22.59	1.94
Plumtree	2485	2-YR	353.81	352.96	0.85	0.96	0.16	28.25	263.54	3.21	38.34	2.05
Plumtree	2485	10-YR	355.05	354.61	0.44	0.68	0.02	207.96	378.91	154.14	152.00	1.51
Plumtree	2485	50-YR	356.29	355.97	0.32	0.58	0.01	464.35	483.94	446.71	195.79	1.34
Plumtree	2485	100-YR	356.86	356.57	0.29	0.55	0.02	615.25	528.59	621.16	203.74	1.28
Plumtree	2485	7-30-2016	357.41	357.13	0.28	0.52	0.02	774.13	577.37	805.50	210.83	1.27
Plumtree	2331	1-YR	351.81	351.56	0.25	0.49	0.02		193.80	0.20	21.42	0.56
Plumtree	2331	2-YR	352.69	352.38	0.31	0.52	0.02	1.47	289.48	4.04	64.53	0.65
Plumtree	2331	10-YR	354.35	353.98	0.37	0.56	0.02	147.73	541.51	51.77	125.68	0.89
Plumtree	2331	50-YR	355.71	355.28	0.42	0.59	0.02	430.34	807.42	157.24	148.91	1.13
Plumtree	2331	100-YR	356.30	355.84	0.46	0.61	0.02	592.92	943.96	228.11	159.72	1.26
Plumtree	2331	7-30-2016	356.87	356.39	0.48	0.61	0.02	777.07	1073.12	306.81	169.96	1.35
Plumtree	2153	1-YR	351.30	351.13	0.18	0.38	0.00	4.88	189.12		21.90	0.37
Plumtree	2153	2-YR	352.15	351.90	0.24	0.47	0.01	23.02	271.98		73.87	0.51
Plumtree	2153	10-YR	353.77	353.46	0.31	0.53	0.01	251.79	479.82	9.39	122.71	0.82
Plumtree	2153	50-YR	355.09	354.74	0.36	0.56	0.00	644.59	687.32	63.09	142.84	1.09
Plumtree	2153	100-YR	355.67	355.28	0.39	0.56	0.00	873.68	789.67	101.66	149.50	1.23
Plumtree	2153	7-30-2016	356.23	355.83	0.41	0.55	0.01	1121.77	885.20	150.03	156.45	1.32
Plumtree	1994	1-YR	350.92	350.69	0.22	0.32	0.00	1.34	192.66		27.63	0.48
Plumtree	1994	2-YR	351.66	351.33	0.33	0.36	0.01	10.53	284.30	0.17	81.53	0.69
Plumtree	1994	10-YR	353.23	352.86	0.37	0.36	0.02	197.57	494.04	49.40	133.39	0.97
Plumtree	1994	50-YR	354.53	354.14	0.39	0.37	0.01	499.27	702.12	193.62	171.19	1.20
Plumtree	1994	100-YR	355.11	354.72	0.38	0.36	0.01	681.49	784.28	299.23	176.56	1.23
Plumtree	1994	7-30-2016	355.68	355.30	0.38	0.35	0.00	882.09	872.17	402.74	188.61	1.28
Plumtree	1888	1-YR	350.59	350.34	0.25	0.06	0.01	8.36	179.81	5.83	49.34	0.56
Plumtree	1888	2-YR	351.29	351.00	0.29	0.06	0.01	31.39	243.68	19.93	73.28	0.67
Plumtree	1888	10-YR	352.85	352.55	0.31	0.06	0.01	187.40	415.36	138.25	135.25	0.90
Plumtree	1888	50-YR	354.15	353.80	0.35	0.06	0.02	432.89	599.77	362.34	160.47	1.17
Plumtree	1888	100-YR	354.74	354.38	0.36	0.07	0.03	578.55	685.11	501.34	170.01	1.26
Plumtree	1888	7-30-2016	355.33	354.96	0.37	0.07	0.04	742.13	770.00	644.86	180.95	1.33
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	350.35	350.25	0.10	0.41	0.04	50.19	143.81		72.27	0.27
Plumtree	1830	2-YR	351.02	350.92	0.11	0.47	0.08	102.00	192.94	0.06	98.15	0.30
Plumtree	1830	10-YR	352.60	352.47	0.13	0.52	0.14	326.73	351.04	63.23	152.68	0.42
Plumtree	1830	50-YR	353.86	353.67	0.19	0.56	0.12	627.90	551.27	215.83	157.05	0.63
Plumtree	1830	100-YR	354.42	354.21	0.22	0.58	0.10	792.89	660.11	312.00	160.33	0.74
Plumtree	1830	7-30-2016	354.99	354.74	0.25	0.58	0.08	961.38	773.57	422.05	165.72	0.85
Plumtree	1641	1-YR	349.90	349.67	0.23	0.28	0.05	19.94	174.05	0.01	31.21	0.53
Plumtree	1641	2-YR	350.47	350.10	0.37	0.39	0.08	37.56	255.59	1.84	65.80	0.86
Plumtree	1641	10-YR	351.94	351.34	0.60	0.62	0.12	140.57	489.06	111.36	116.71	1.62
Plumtree	1641	50-YR	353.18	352.60	0.58	0.67	0.08	311.85	680.45	402.70	148.16	1.85
Plumtree	1641	100-YR	353.74	353.18	0.56	0.64	0.08	413.25	763.30	588.45	157.83	1.89
Plumtree	1641	7-30-2016	354.33	353.80	0.52	0.57	0.07	528.34	835.19	793.48	167.82	1.85
Plumtree	1463	1-YR	349.57	349.50	0.07	0.36	0.01	3.92	187.01	3.07	98.09	0.16
Plumtree	1463	2-YR	350.00	349.89	0.11	0.43	0.01	18.80	266.47	9.73	117.70	0.24
Plumtree	1463	10-YR	351.20	350.98	0.22	0.51	0.01	135.65	539.98	65.37	147.91	0.54
Plumtree	1463	50-YR	352.42	352.13	0.30	0.46	0.04	367.52	844.27	183.21	181.84	0.79
Plumtree	1463	100-YR	353.03	352.72	0.31	0.41	0.05	522.58	977.65	264.78	195.20	0.85
Plumtree	1463	7-30-2016	353.69	353.39	0.29	0.35	0.05	696.93	1089.60	370.47	206.47	0.84
Plumtree	1291	1-YR	349.21	349.04	0.17	0.64	0.00	159.15	248.85		220.05	0.55
Plumtree	1291	2-YR	349.56	349.38	0.19	0.59	0.01	270.94	310.00	0.06	239.14	0.68
Plumtree	1291	10-YR	350.68	350.50	0.18	0.47	0.02	836.45	473.55	6.00	314.30	0.82
Plumtree	1291	50-YR	351.92	351.76	0.16	0.38	0.01	1693.97	625.93	31.10	396.89	0.81
Plumtree	1291	100-YR	352.57	352.42	0.15	0.33	0.00	2261.18	682.92	50.90	413.55	0.75
Plumtree	1291	7-30-2016	353.29	353.15	0.14	0.30	0.00	2952.81	751.07	78.11	422.07	0.70
Plumtree	1124	1-YR	348.57	348.35	0.21	0.46	0.03	144.59	263.41		243.41	0.68
Plumtree	1124	2-YR	348.96	348.81	0.15	0.37	0.01	295.12	285.88		261.49	0.58
Plumtree	1124	10-YR	350.19	350.07	0.12	0.30	0.00	911.34	403.64	1.01	281.73	0.56
Plumtree	1124	50-YR	351.53	351.41	0.13	0.25	0.00	1775.59	559.09	16.31	311.21	0.59
Plumtree	1124	100-YR	352.23	352.10	0.13	0.24	0.00	2307.64	650.29	37.07	325.49	0.61
Plumtree	1124	7-30-2016	352.99	352.85	0.14	0.23	0.01	2950.35	758.38	73.27	337.57	0.65
Plumtree	994	1-YR	348.08	347.96	0.13	0.25	0.00	143.78	264.22		183.00	0.42
Plumtree	994	2-YR	348.58	348.47	0.11	0.19	0.00	264.37	316.63		206.46	0.38
Plumtree	994	10-YR	349.89	349.75	0.13	0.17	0.00	752.10	562.30	1.59	235.38	0.49
Plumtree	994	50-YR	351.28	351.11	0.16	0.16	0.00	1461.15	868.79	21.07	271.54	0.59
Plumtree	994	100-YR	351.99	351.81	0.18	0.15	0.00	1903.41	1046.53	45.06	288.19	0.64

HEC-RAS Plan: EX River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	994	7-30-2016	352.75	352.55	0.20	0.15	0.01	2446.40	1251.88	83.72	303.86	0.70
Plumtree	911	1-YR	347.82	347.65	0.17	0.54	0.01	153.68	254.32		193.54	0.55
Plumtree	911	2-YR	348.39	348.27	0.12	0.47	0.03	303.96	277.04		213.59	0.43
Plumtree	911	10-YR	349.71	349.59	0.13	0.34	0.01	872.43	439.84	3.73	239.09	0.54
Plumtree	911	50-YR	351.11	350.96	0.15	0.30	0.01	1686.17	639.86	24.97	273.53	0.65
Plumtree	911	100-YR	351.83	351.66	0.17	0.28	0.01	2197.30	751.78	45.92	288.71	0.70
Plumtree	911	7-30-2016	352.60	352.42	0.18	0.27	0.01	2823.78	880.42	77.81	303.31	0.76
Plumtree	762	1-YR	347.27	347.00	0.27	0.19	0.05	97.32	310.68	0.00	66.72	0.72
Plumtree	762	2-YR	347.89	347.52	0.38	0.21	0.07	135.98	442.36	2.66	161.19	0.99
Plumtree	762	10-YR	349.36	349.12	0.24	0.17	0.03	572.33	636.09	107.59	242.04	0.80
Plumtree	762	50-YR	350.81	350.58	0.22	0.15	0.02	1162.24	872.19	316.56	281.55	0.82
Plumtree	762	100-YR	351.54	351.31	0.23	0.14	0.02	1530.64	1008.77	455.60	300.48	0.85
Plumtree	762	7-30-2016	352.32	352.09	0.23	0.14	0.02	1974.05	1162.00	645.95	314.67	0.88
Plumtree	658	1-YR	347.04	346.92	0.12	0.14	0.00	8.35	391.85	7.80	174.69	0.23
Plumtree	658	2-YR	347.62	347.48	0.14	0.13	0.02	37.17	504.57	39.26	225.88	0.28
Plumtree	658	10-YR	349.16	349.02	0.15	0.12	0.02	258.78	798.50	258.72	301.02	0.37
Plumtree	658	50-YR	350.64	350.49	0.15	0.12	0.02	629.26	1100.31	621.43	328.76	0.43
Plumtree	658	100-YR	351.38	351.22	0.16	0.12	0.02	868.73	1277.06	849.21	345.31	0.47
Plumtree	658	7-30-2016	352.16	351.99	0.17	0.12	0.02	1170.86	1483.12	1128.02	363.75	0.52
Plumtree	526	1-YR	346.90	346.78	0.11	0.25	0.01	20.73	324.30	62.97	264.39	0.27
Plumtree	526	2-YR	347.47	347.38	0.09	0.21	0.01	57.10	367.23	156.66	278.77	0.25
Plumtree	526	10-YR	349.02	348.94	0.08	0.17	0.01	218.63	547.46	549.91	311.73	0.28
Plumtree	526	50-YR	350.50	350.41	0.09	0.16	0.01	470.17	773.57	1107.26	340.24	0.34
Plumtree	526	100-YR	351.24	351.14	0.10	0.16	0.01	639.69	904.35	1450.96	352.63	0.37
Plumtree	526	7-30-2016	352.02	351.91	0.11	0.17	0.01	853.17	1058.28	1870.55	365.72	0.41
Plumtree	380	1-YR	346.63	346.39	0.24	1.36	0.09	26.53	380.03	1.45	138.09	0.52
Plumtree	380	2-YR	347.25	347.04	0.20	1.09	0.11	93.10	455.11	32.79	192.08	0.49
Plumtree	380	10-YR	348.84	348.66	0.18	0.78	0.10	381.40	704.73	229.86	219.66	0.53
Plumtree	380	50-YR	350.33	350.13	0.21	0.76	0.12	783.51	1017.30	550.19	236.20	0.64
Plumtree	380	100-YR	351.06	350.84	0.23	0.77	0.13	1030.93	1198.74	765.33	241.67	0.71
Plumtree	380	7-30-2016	351.84	351.59	0.25	0.79	0.14	1333.81	1414.34	1033.85	247.14	0.79
Plumtree	146	1-YR	345.17	343.98	1.19	0.58	0.29		408.00		19.97	2.67
Plumtree	146	2-YR	346.05	344.79	1.26	0.53	0.29	4.80	575.13	1.07	43.36	2.64
Plumtree	146	10-YR	347.96	346.75	1.21	0.45	0.20	224.58	1032.08	59.33	111.86	2.66
Plumtree	146	50-YR	349.45	348.05	1.40	0.45	0.20	658.33	1521.98	170.69	141.74	3.38
Plumtree	146	100-YR	350.16	348.63	1.53	0.46	0.21	960.28	1794.45	240.27	153.62	3.82
Plumtree	146	7-30-2016	350.91	349.23	1.68	0.46	0.22	1354.18	2102.54	325.28	164.30	4.32
Plumtree	63	1-YR	343.79	343.55	0.23				408.00		43.59	0.51
Plumtree	63	2-YR	344.47	344.18	0.29			0.04	580.94	0.02	50.01	0.61
Plumtree	63	10-YR	346.45	345.91	0.54			23.50	1281.72	10.78	84.16	0.97
Plumtree	63	50-YR	348.29	347.54	0.75			137.54	2127.33	86.14	127.03	1.32
Plumtree	63	100-YR	349.17	348.33	0.85			241.37	2594.26	159.37	139.56	1.49
Plumtree	63	7-30-2016	350.11	349.16	0.94			388.93	3129.63	263.45	150.66	1.66

Appendix H-2

Plumtree Branch: Option A Hydraulic Modeling

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017

Plumtree Plumtree

Legend

- WS 7-30-2016
- WS 100-YR
- WS 50-YR
- WS 10-YR
- WS 2-YR
- WS 1-YR
- Ground
- LOB
- ROB
- Right Levee

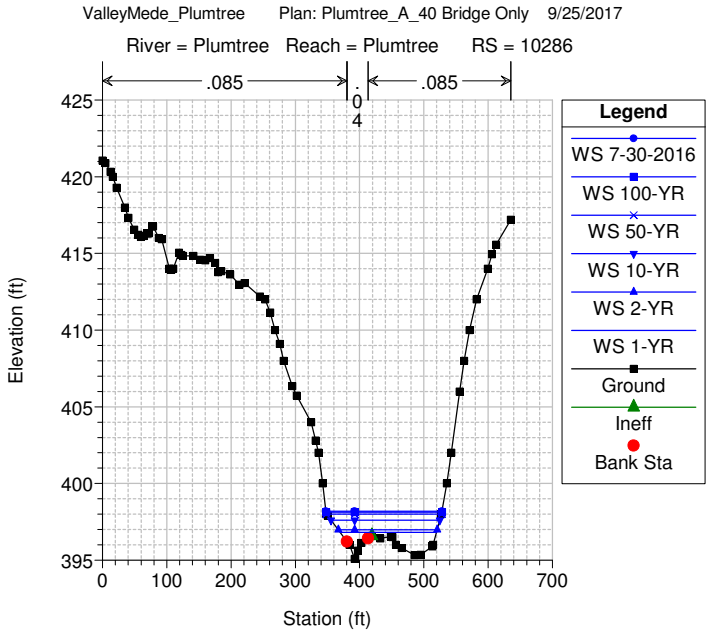
Elevation (ft)

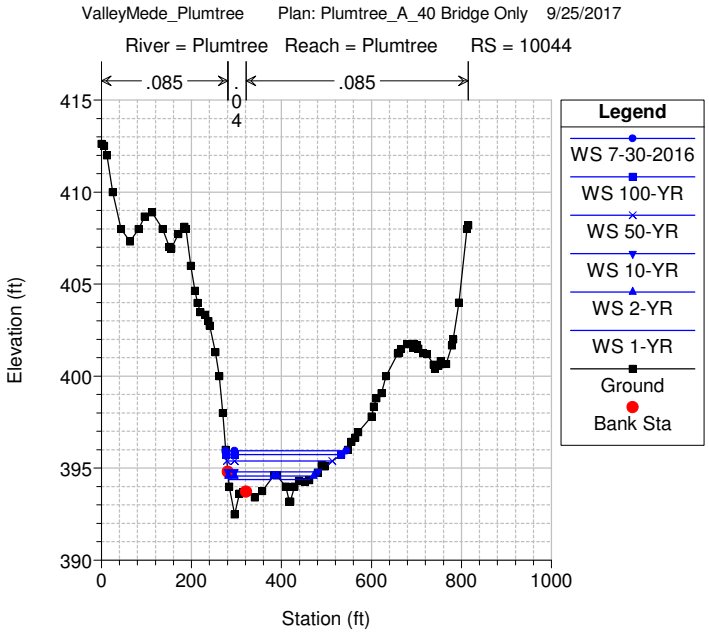
400
390
380
370
360
350
340

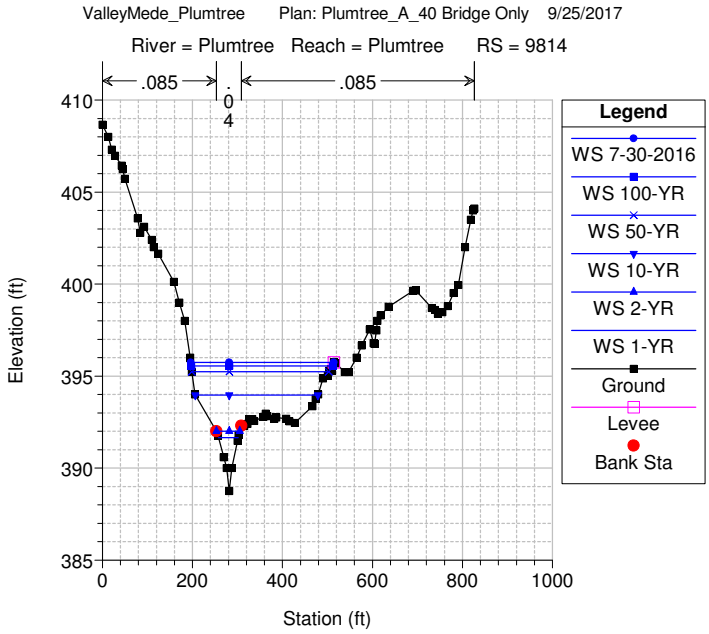
0
2000
4000
6000
8000
10000
12000

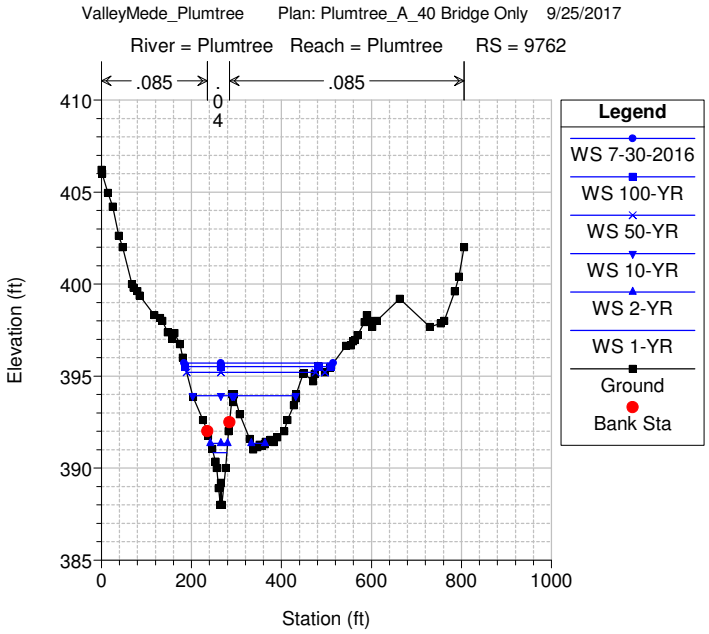
Main Channel Distance (ft)

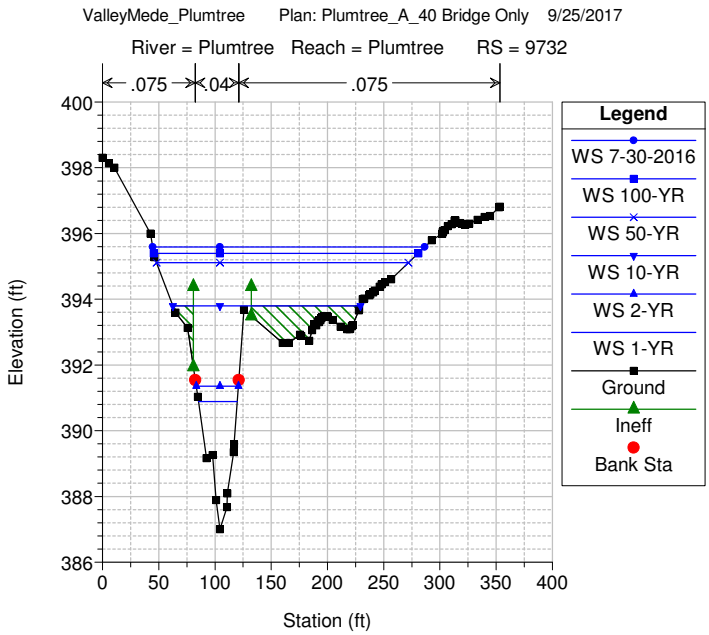
380 526 762 911 1124 1291 1463 1641 1830 1994 2153 2331 2485 2589 2759 2900 Frederick Rd 2978 3077 3179 3296 3428 3550 3688 3816 3930 4033 4185 4289 4400 US 40 4636 4745 4845 5000 Longview Dr 5107 5209 5323 5419 5560 5650 Brookmede Rd 5824 5926 6028 6122 6250 Hearthstone Rd 6350 6454 6568 6663 6766 6893 7030 7216 7367 7548 7800 7954 8094 8229 8374 8579 8753 8987 9196 9301 9398 9499 9650 Michaels Way 9814 10044 10286

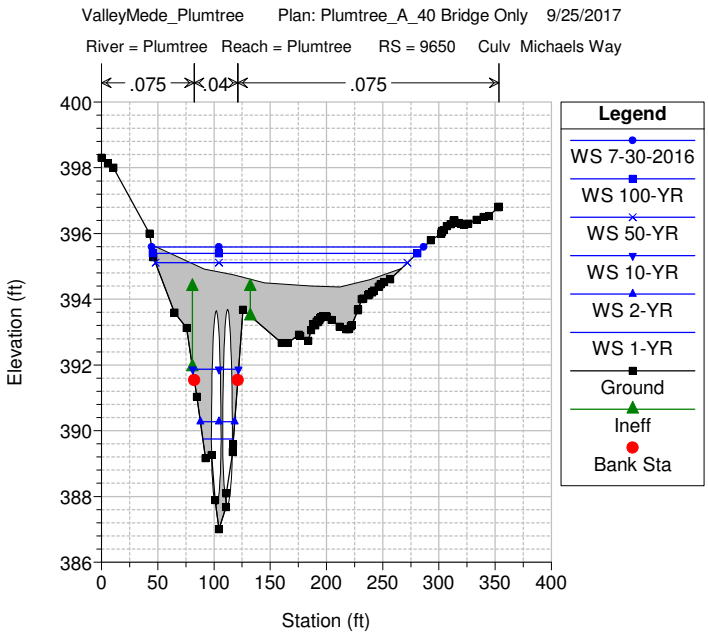

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 10286
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

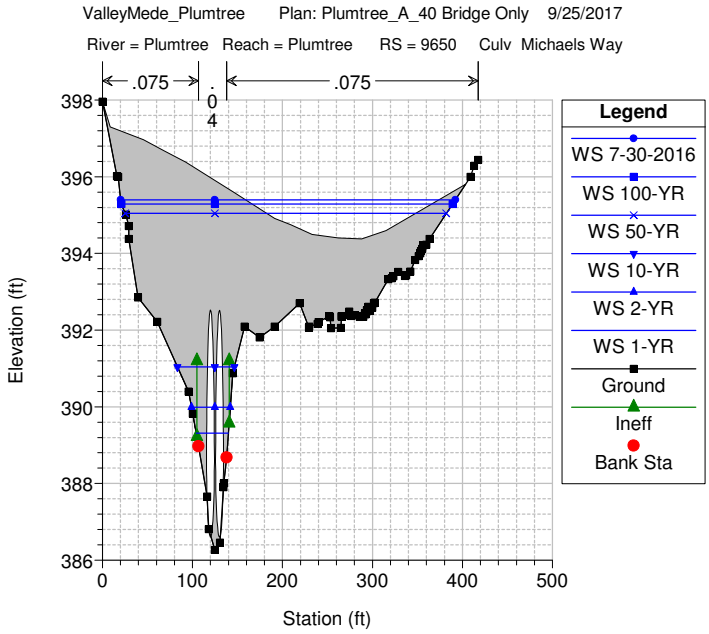

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 10044
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

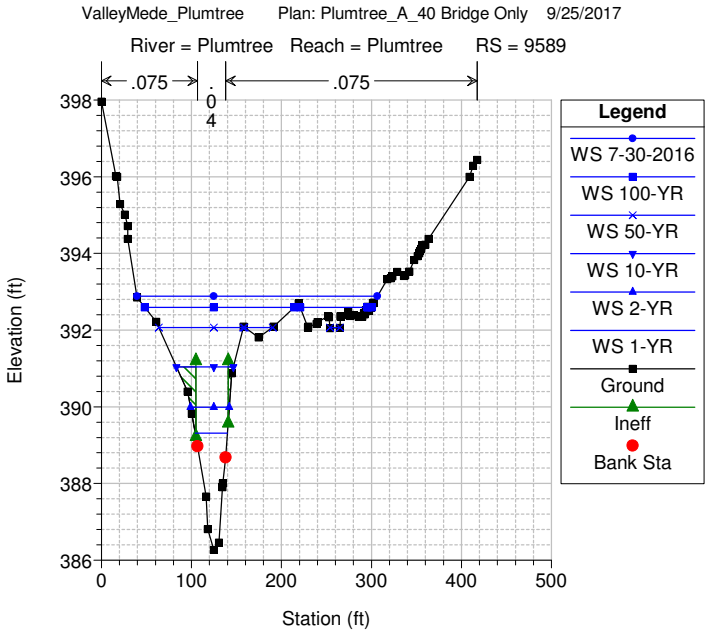

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 9814
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

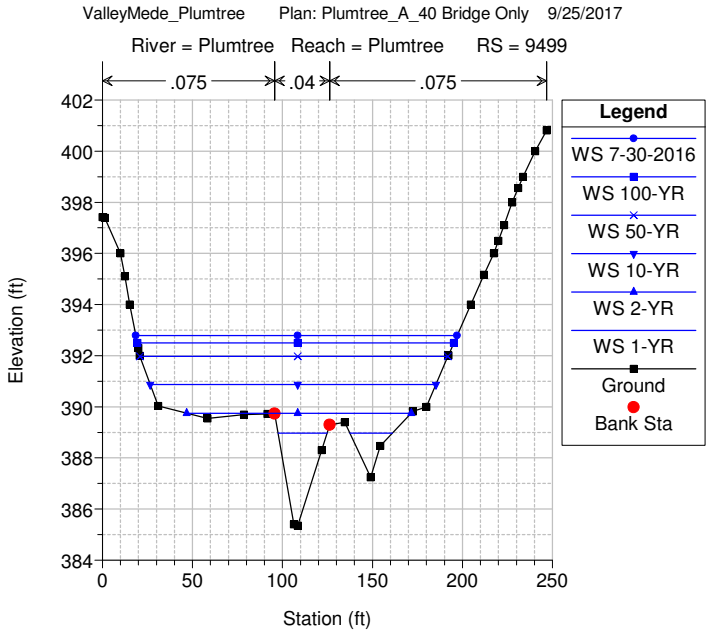

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 9762
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

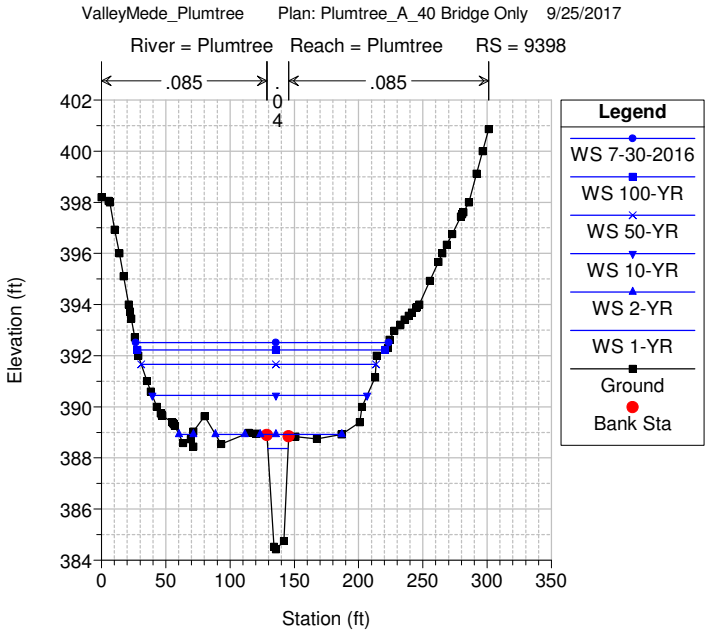

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 9732
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

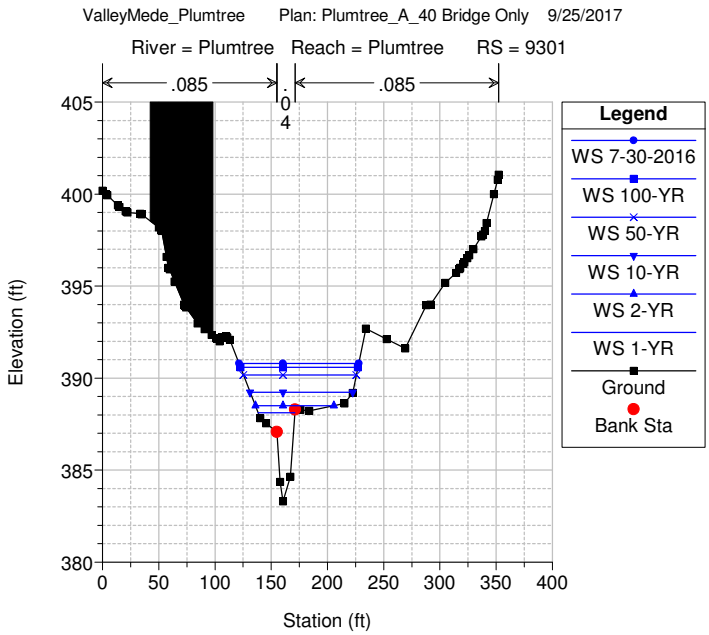

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

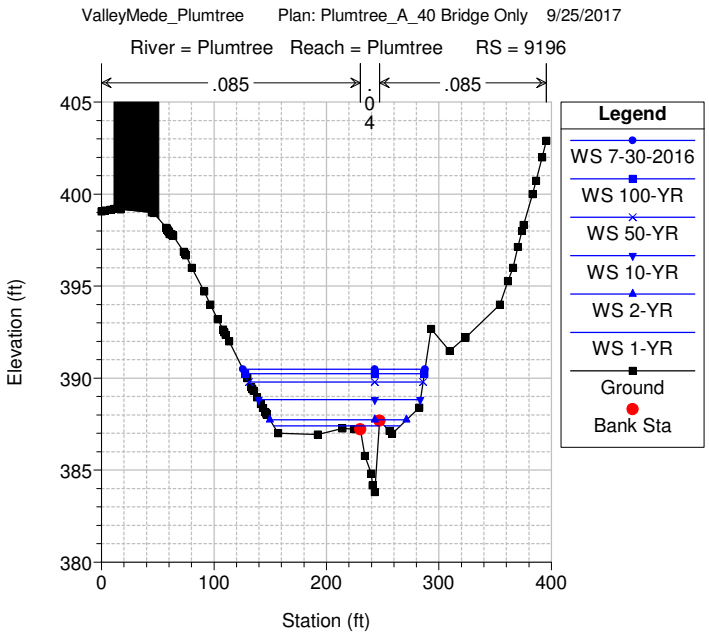

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

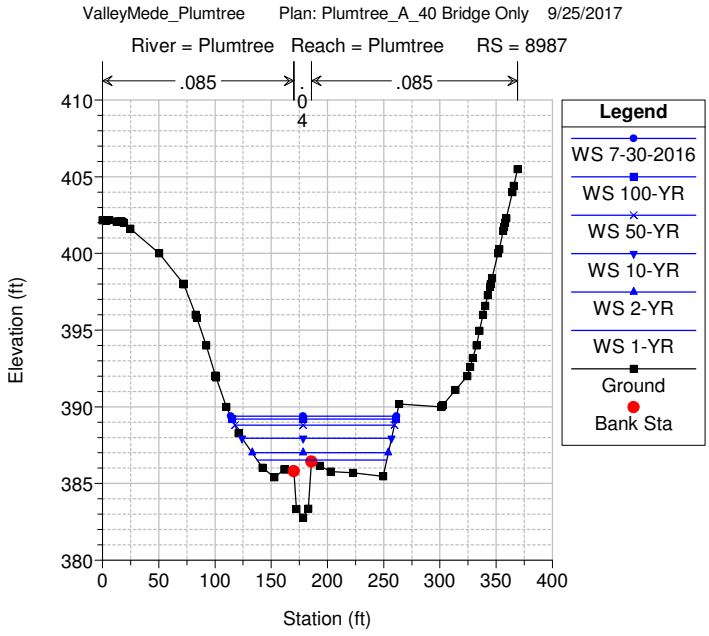

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 9589
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

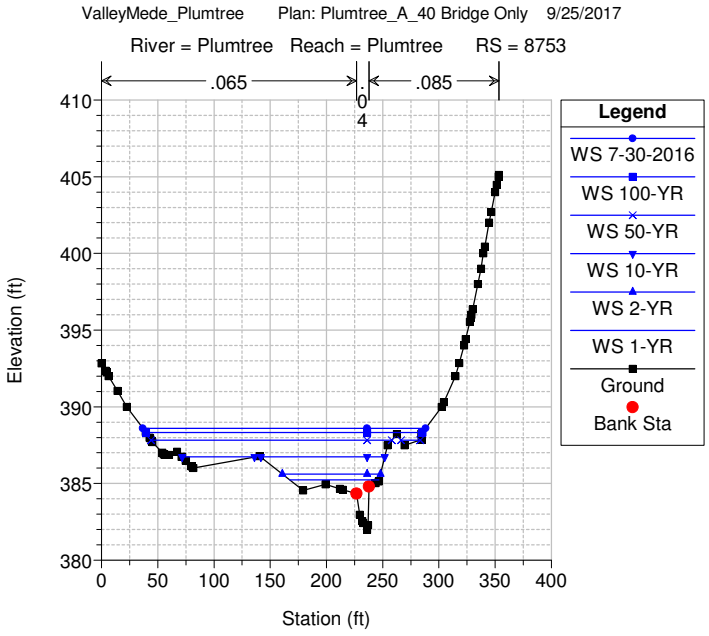

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 9499
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

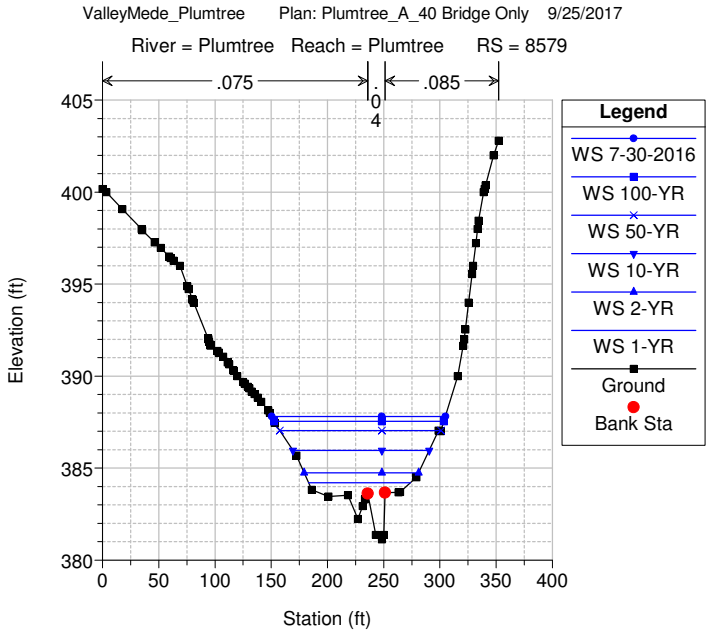

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 9398
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

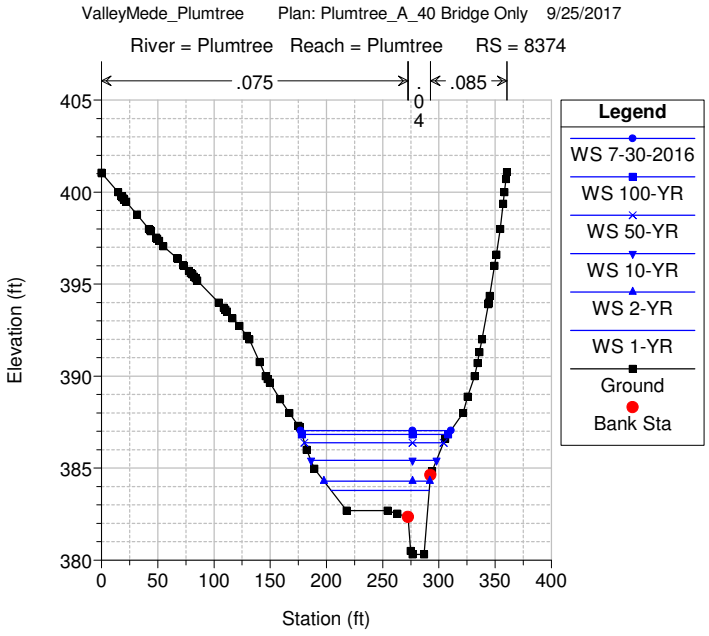

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 9301
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

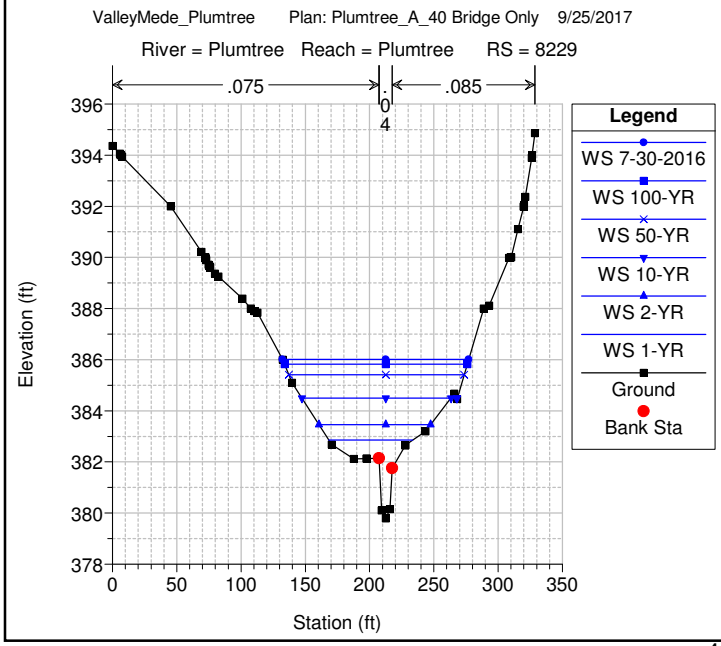

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 9196
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

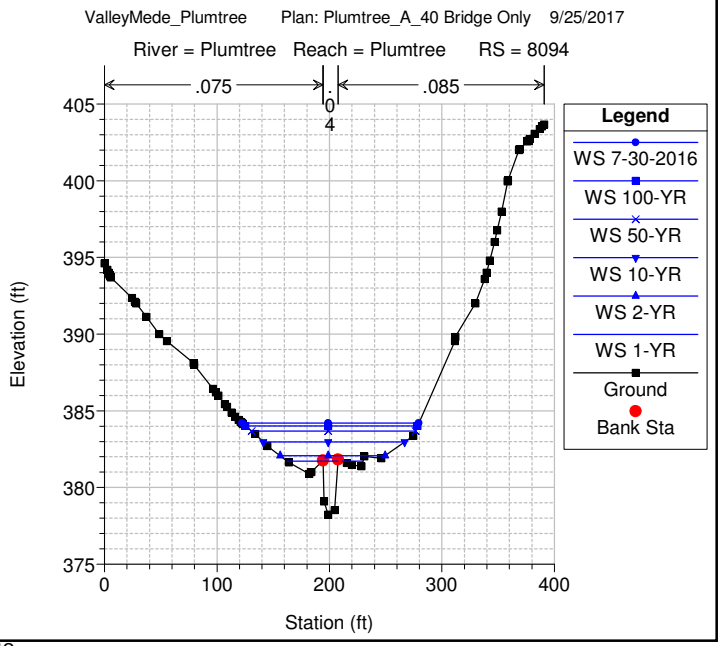

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 8987
.085
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

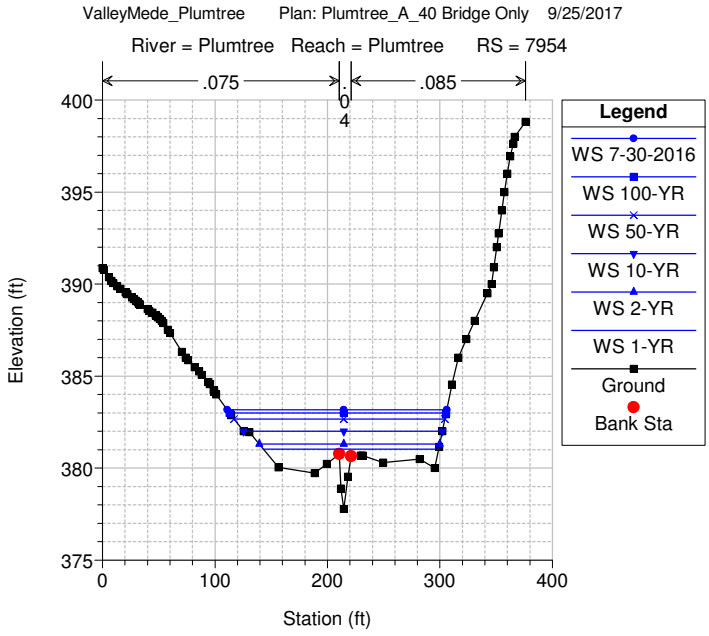

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 8753
.065
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

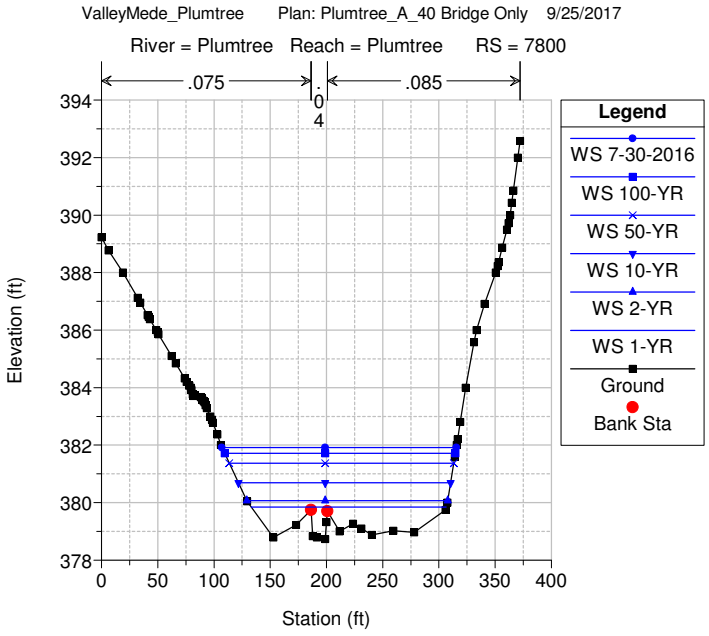

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 8579
.075
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

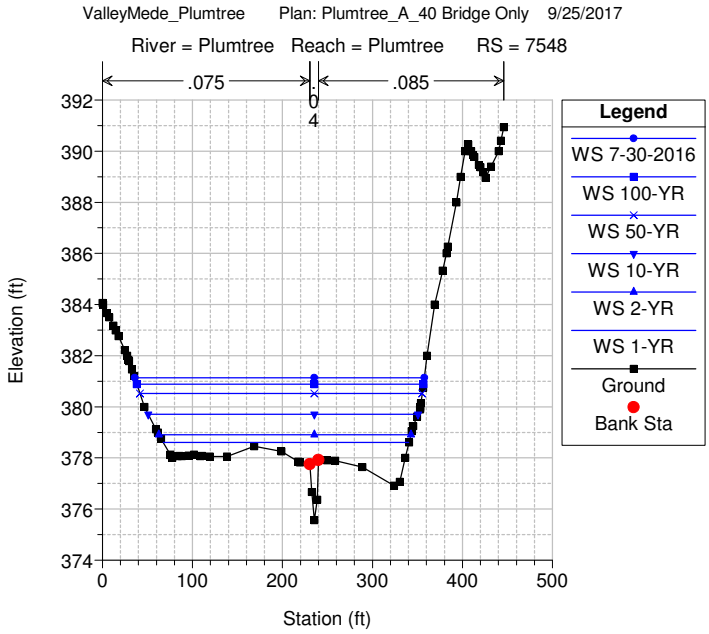

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 8374
.075
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

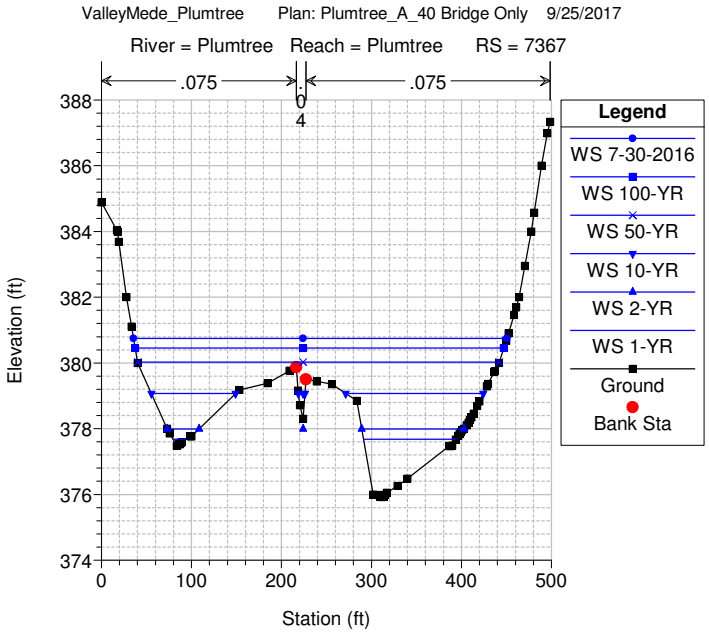

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 8229
.075
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

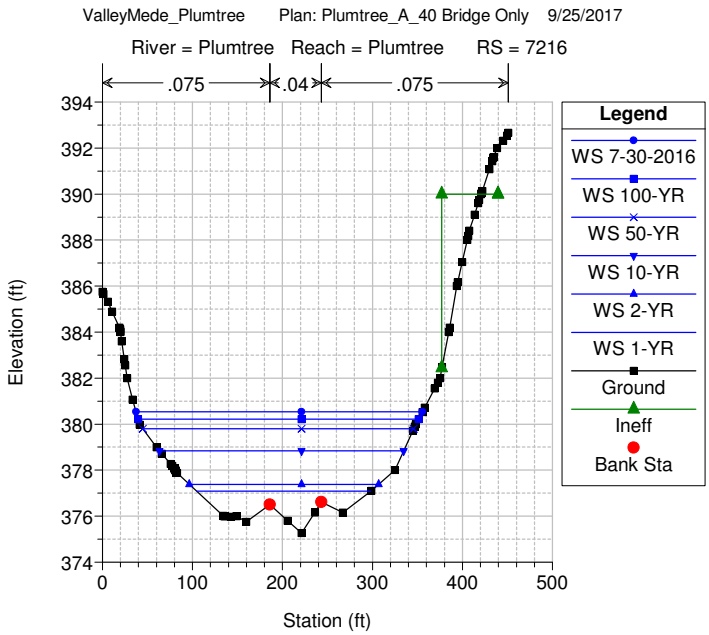

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 8094
.075
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

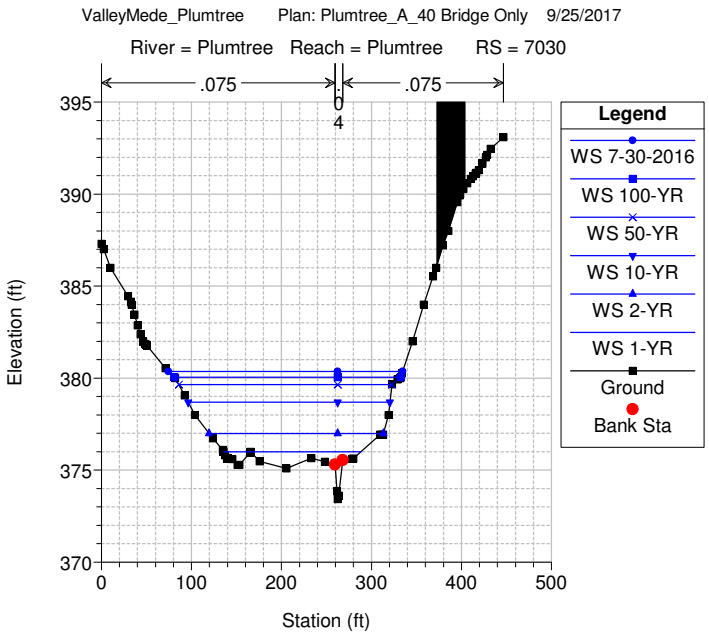

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 7954
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

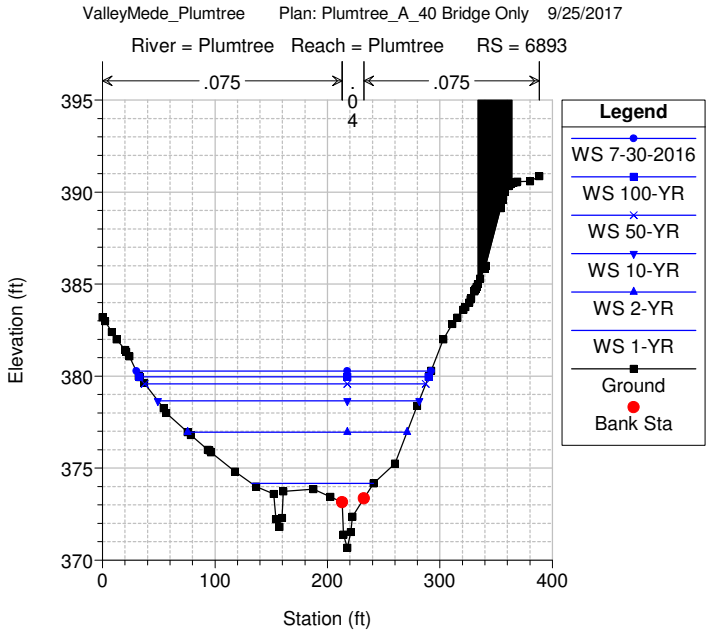

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 7800
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

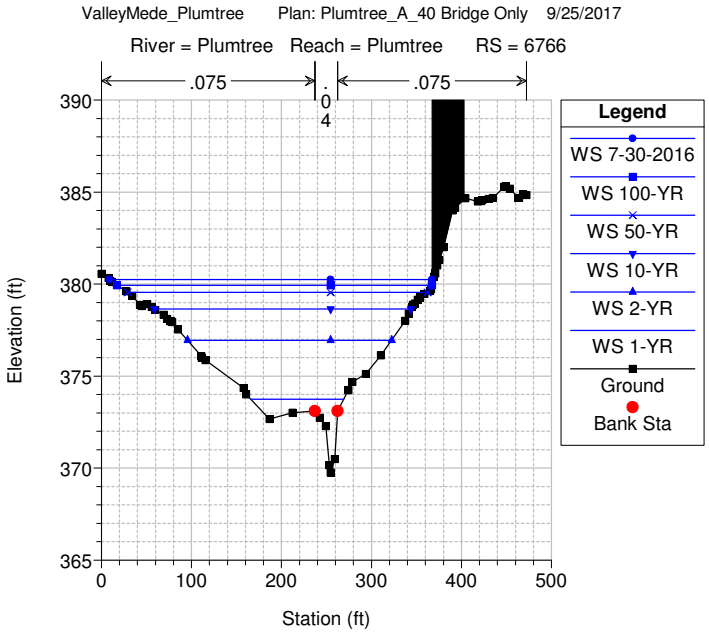

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 7548
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

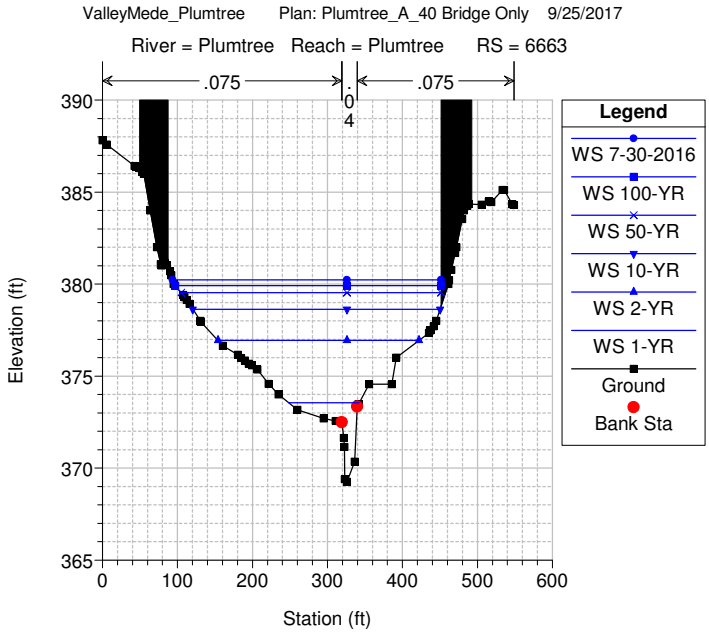

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 7367
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

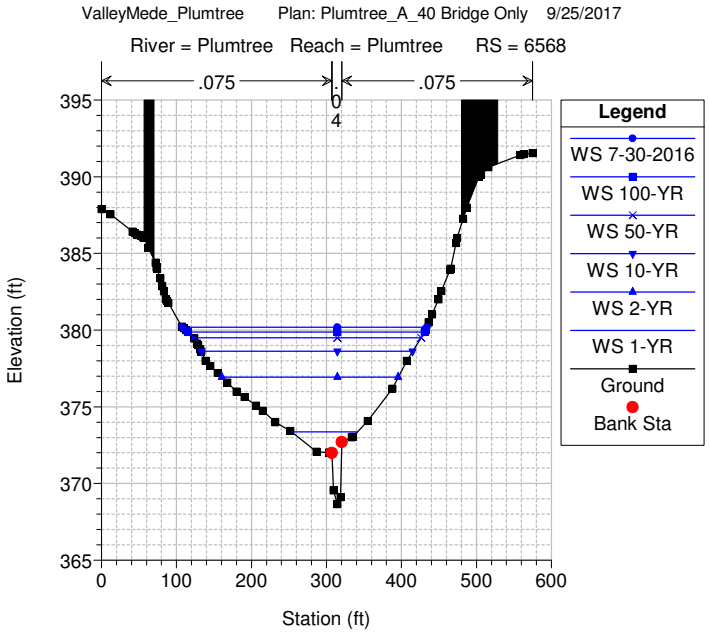

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 7216
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

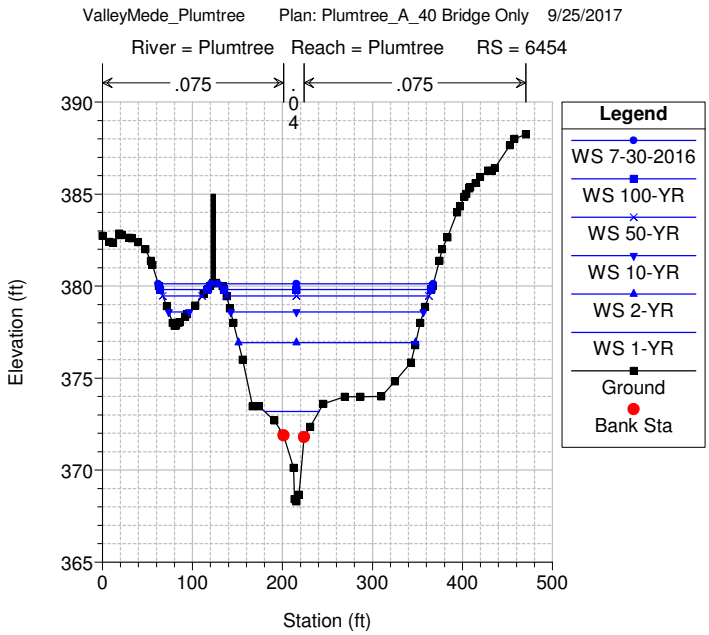

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 7030
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

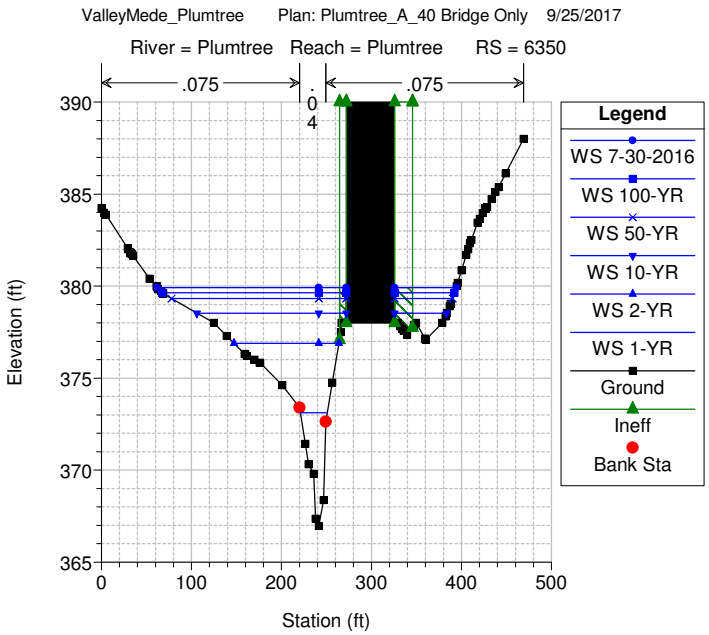

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6893
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

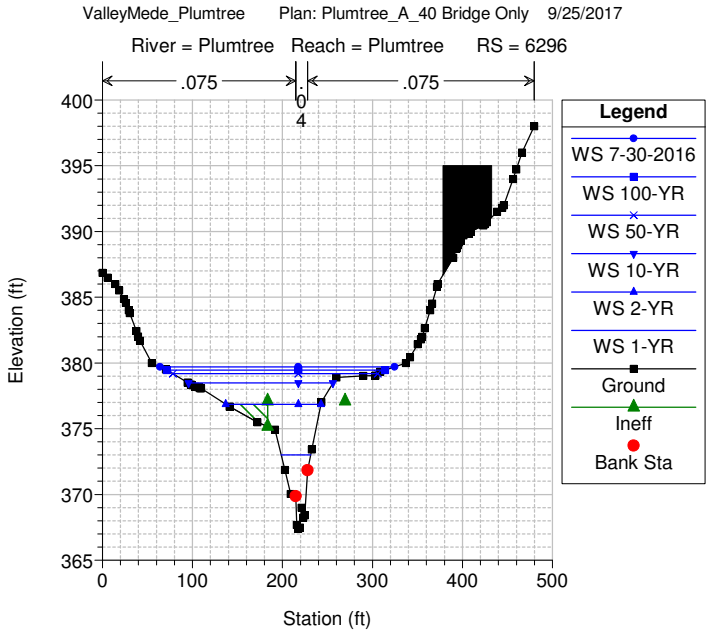

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6766
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

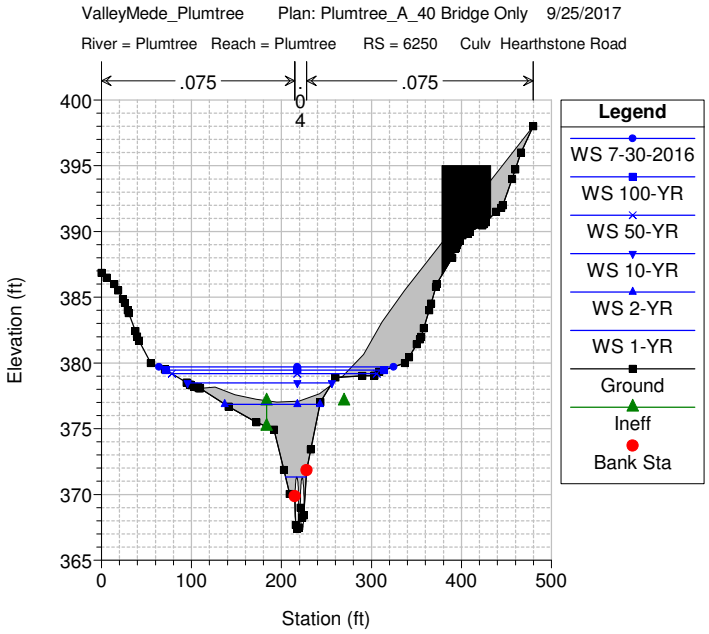

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6663
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

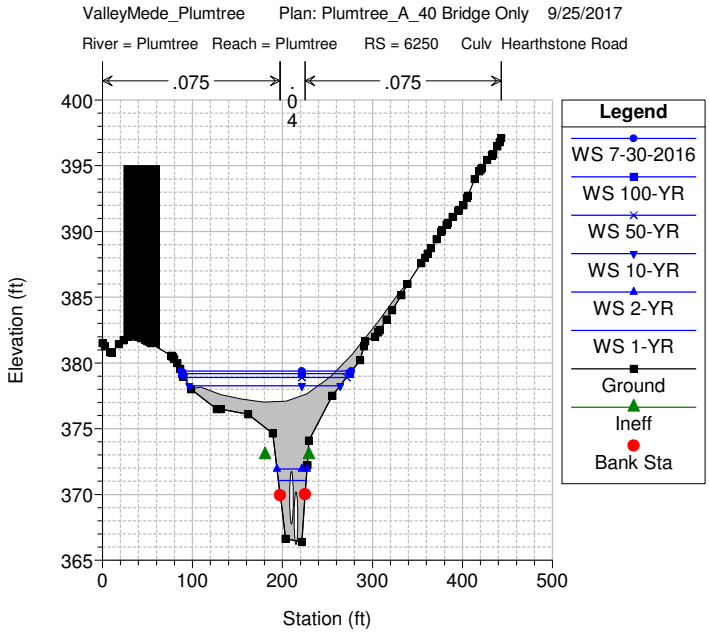

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6568
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

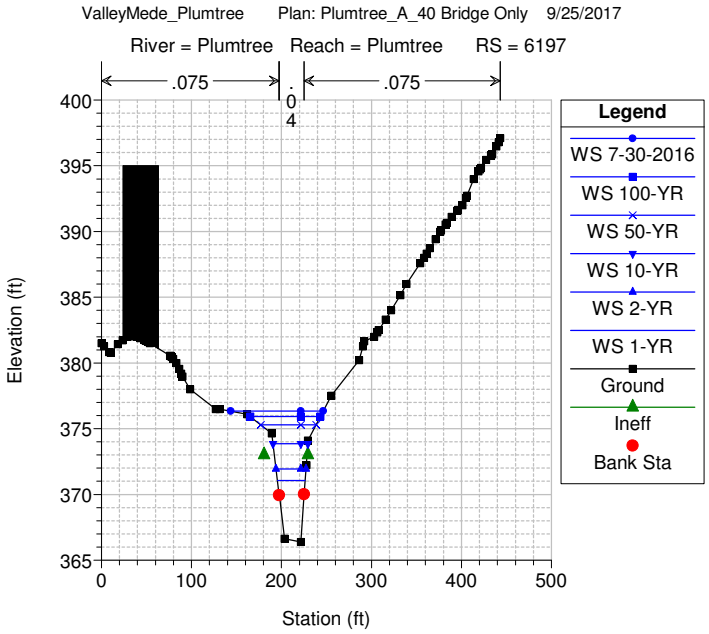

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6454
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

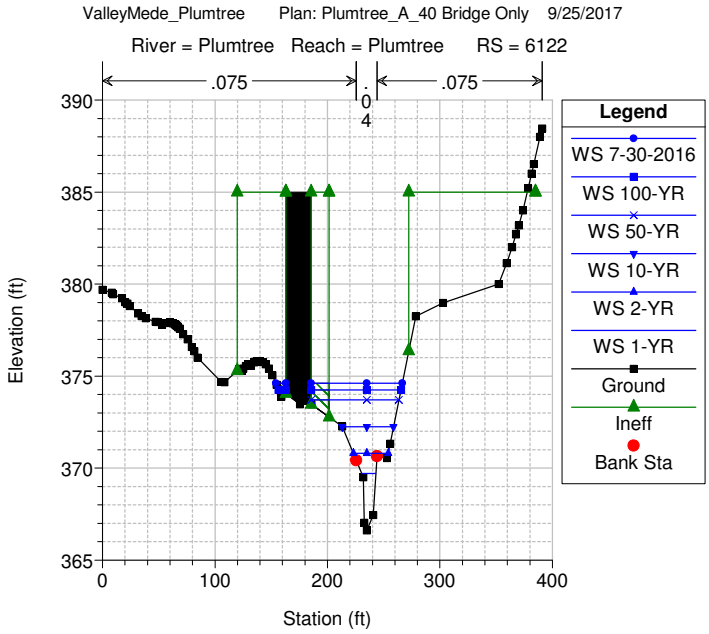

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6350
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

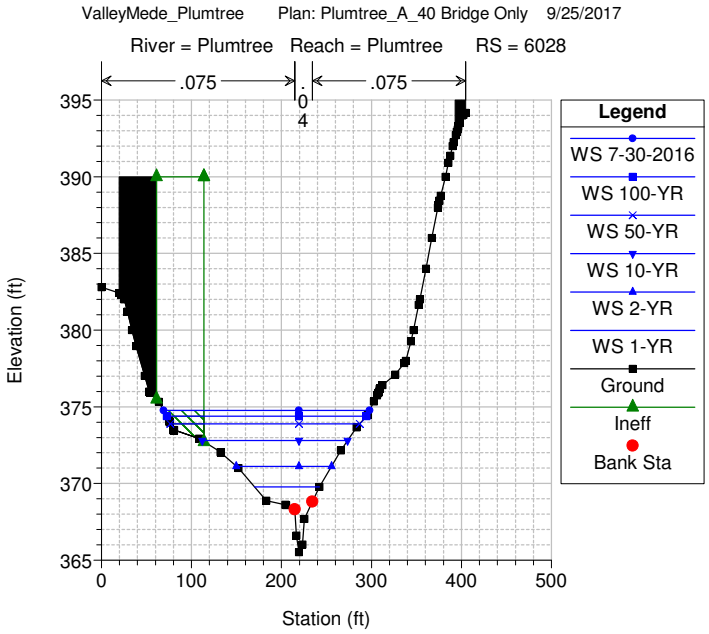

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6296
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

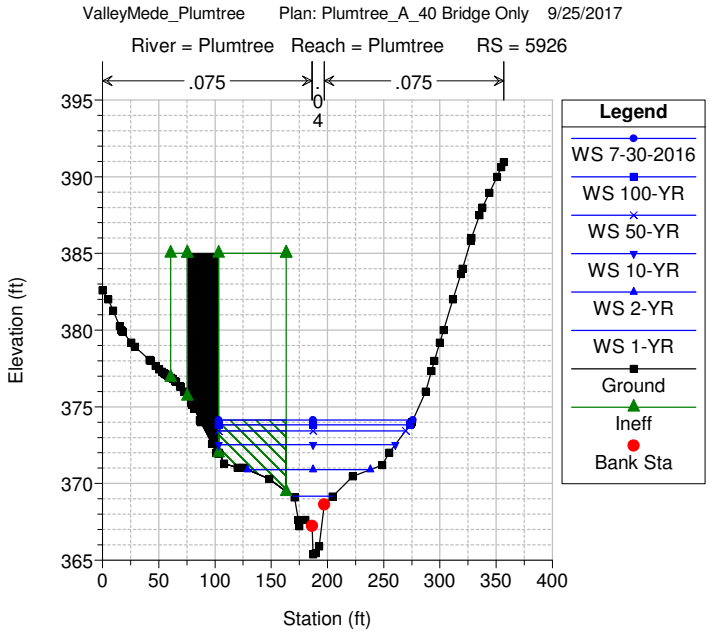

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

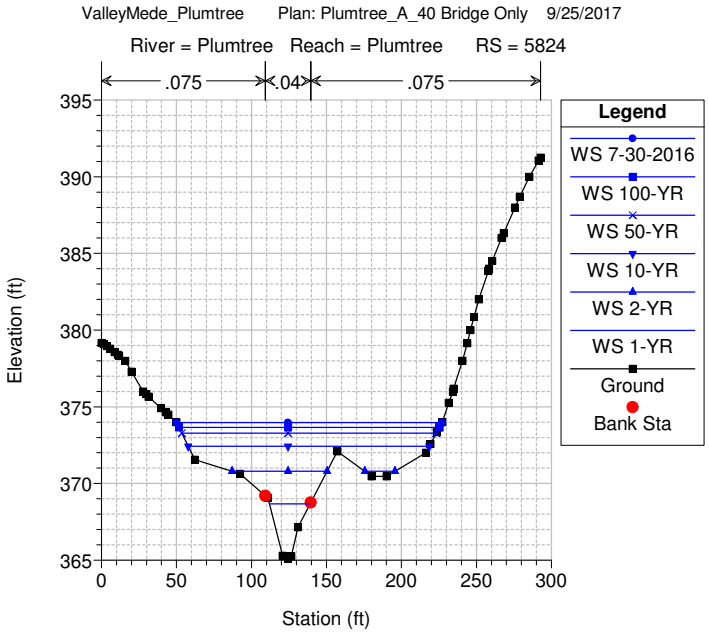

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

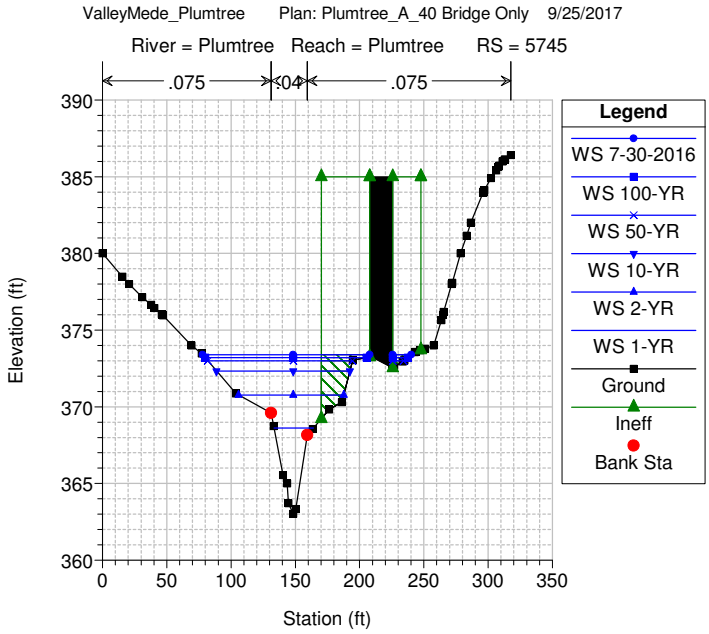

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6197
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

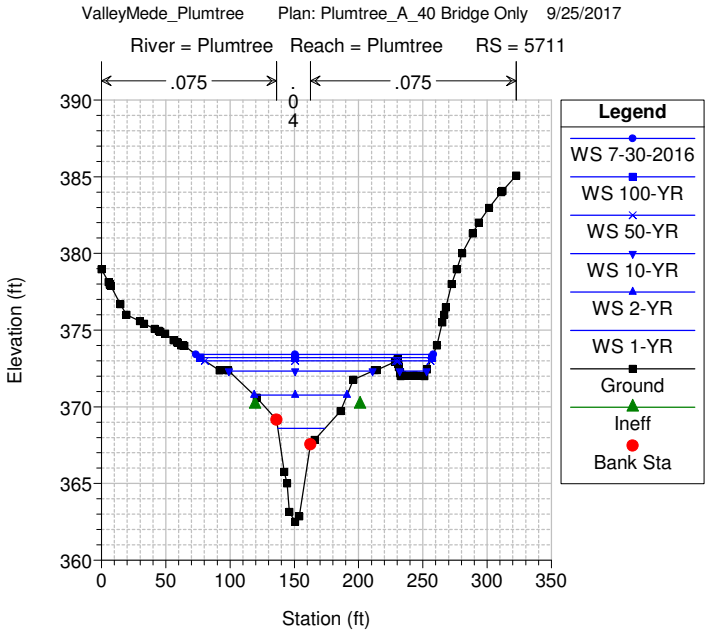

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6122
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

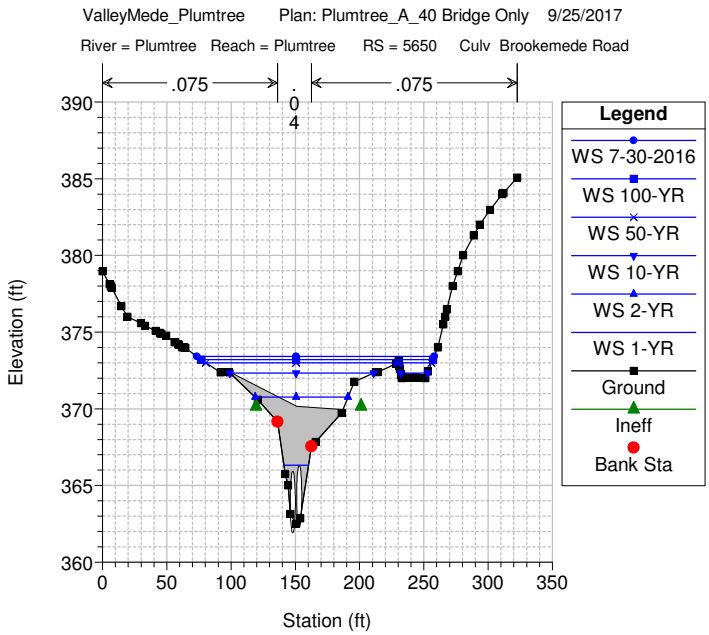

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 6028
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

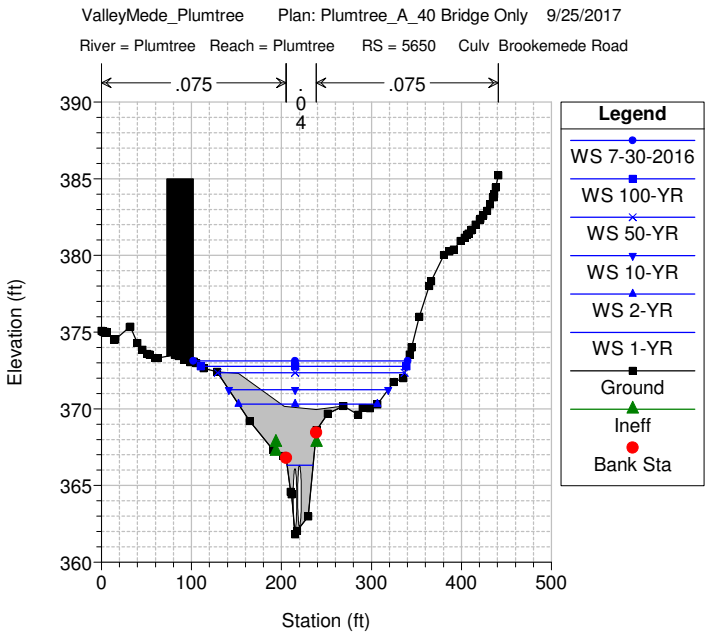

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5926
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

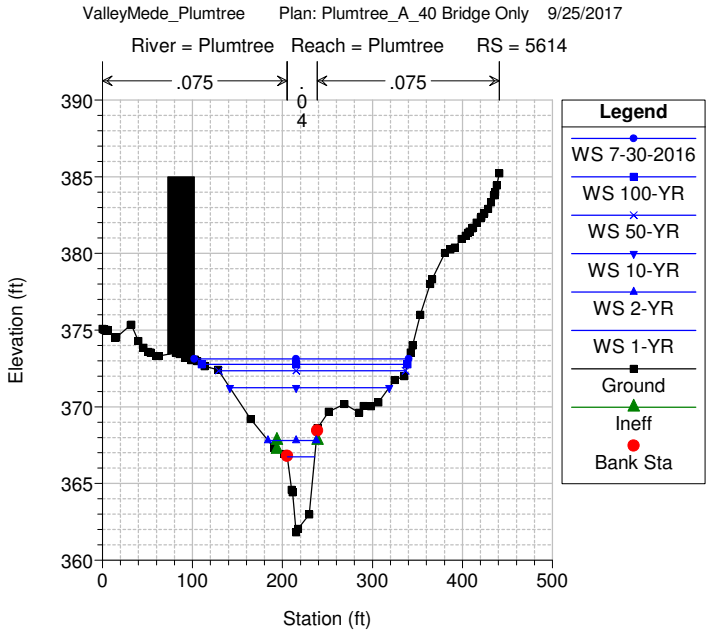

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5824
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

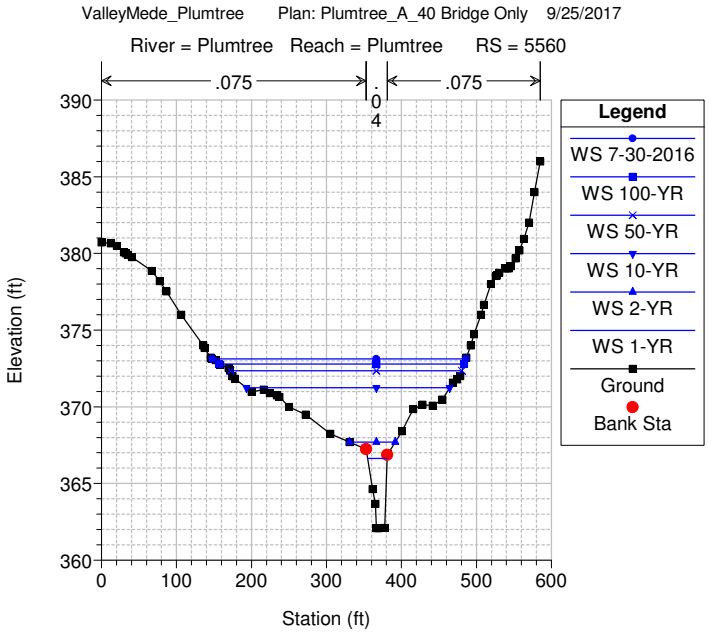

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5745
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

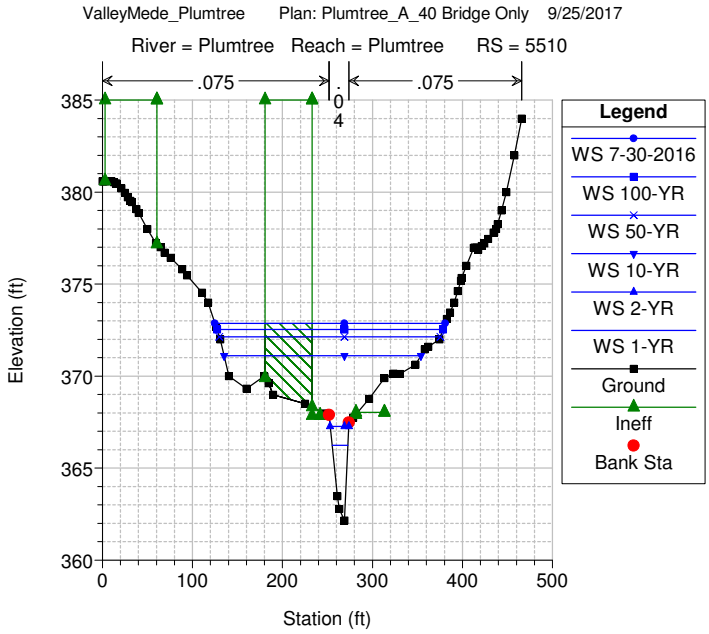

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5711
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

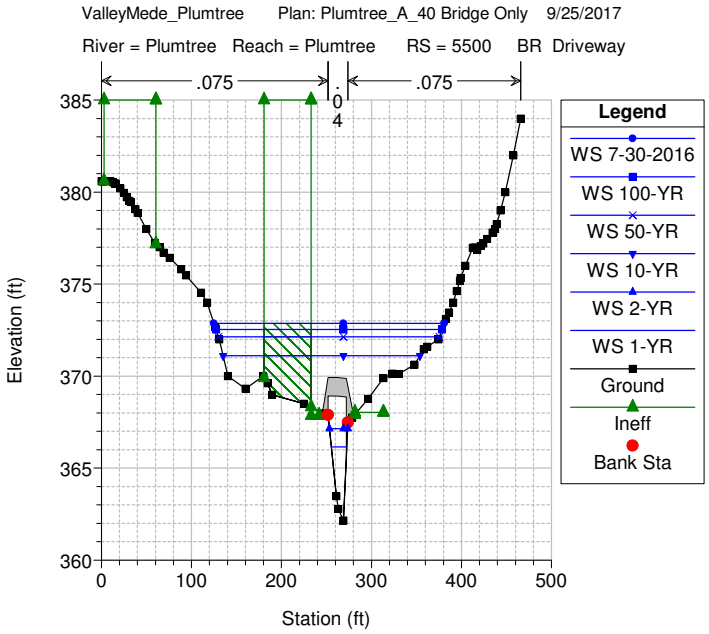

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

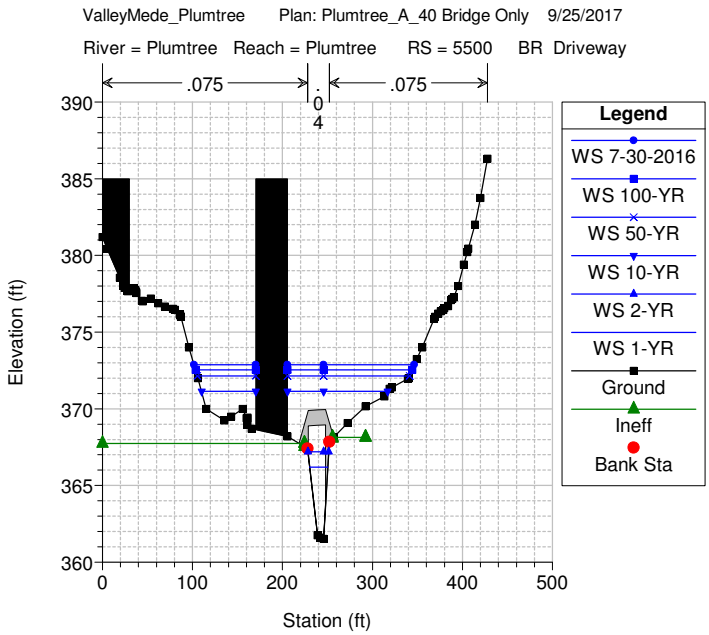

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

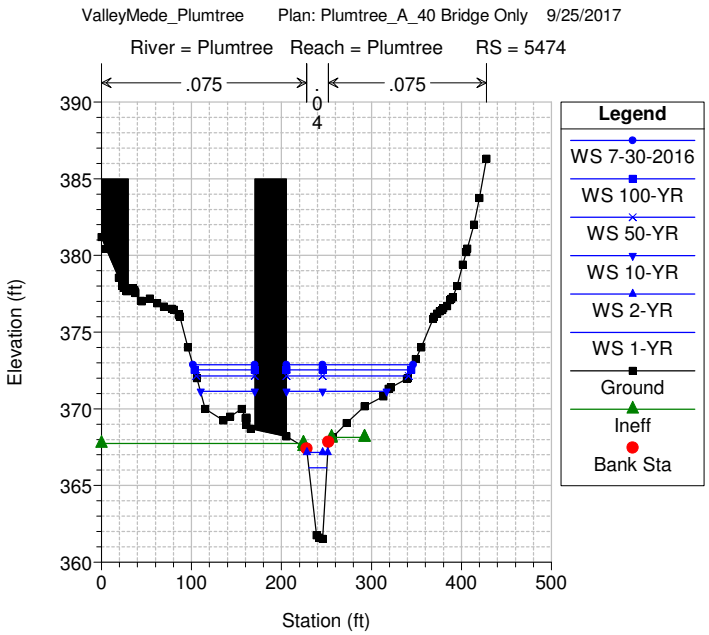

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5614
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

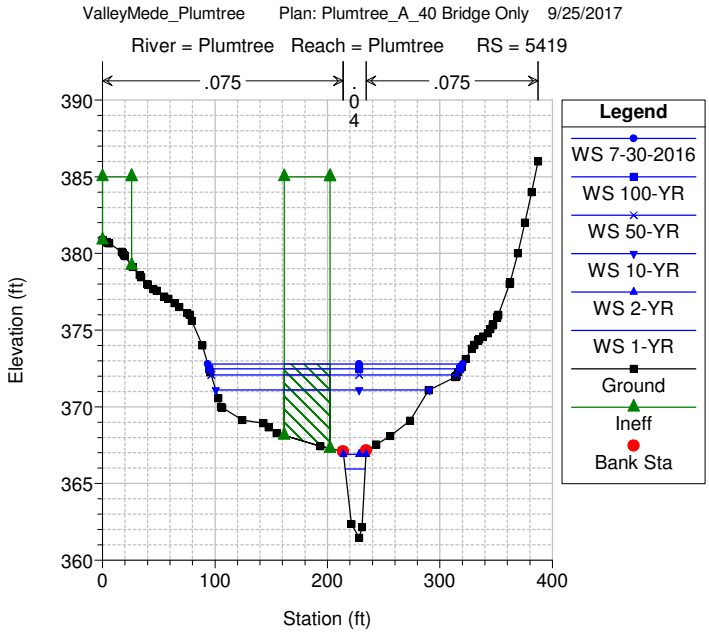

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5560
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

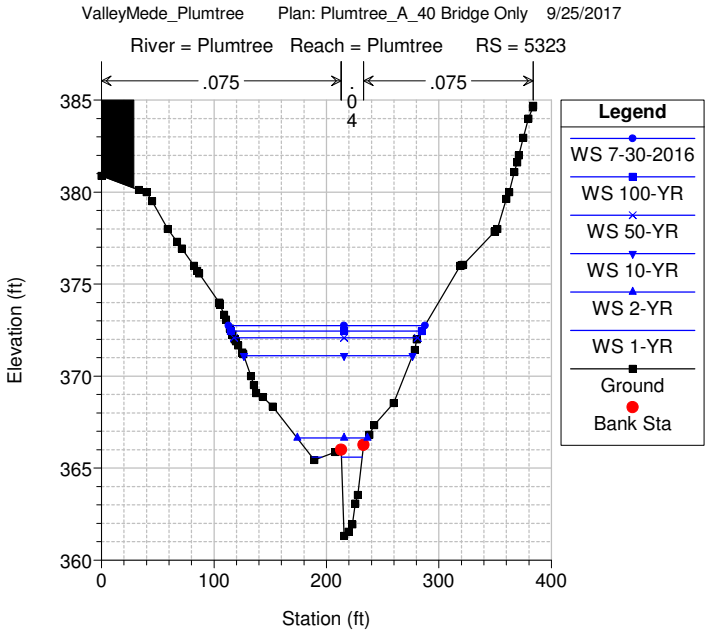

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5510
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

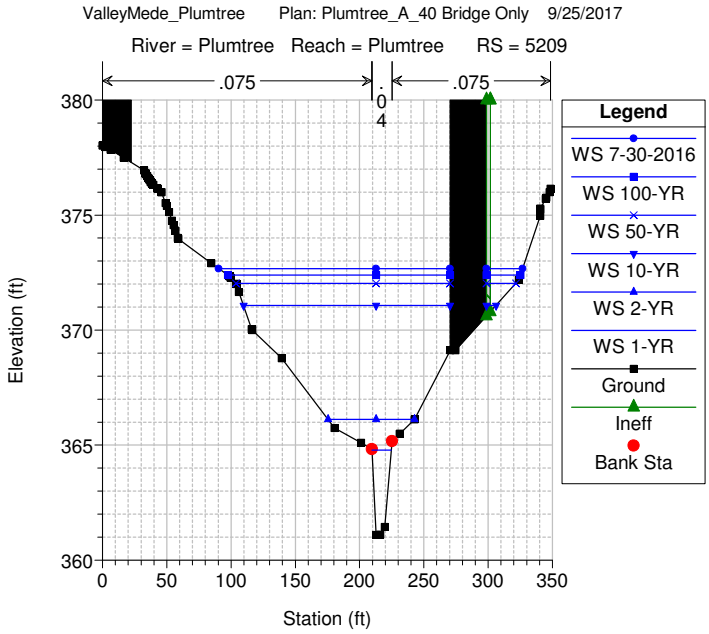

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

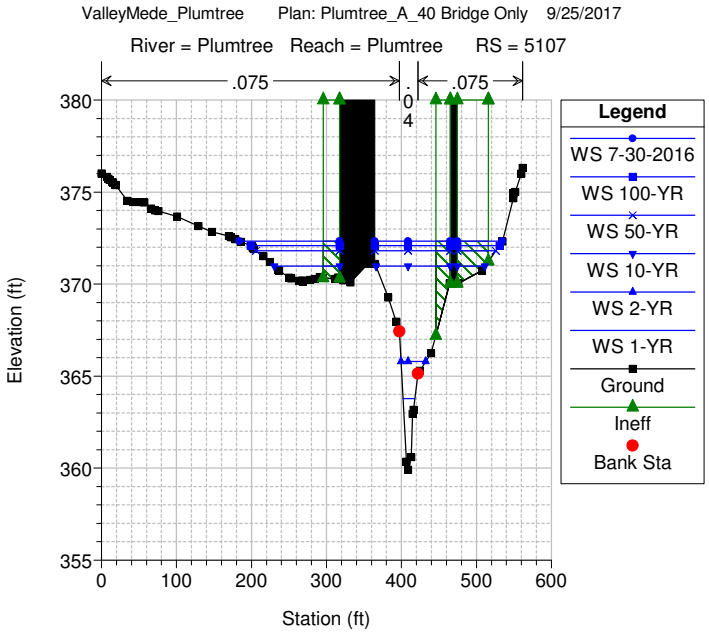

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

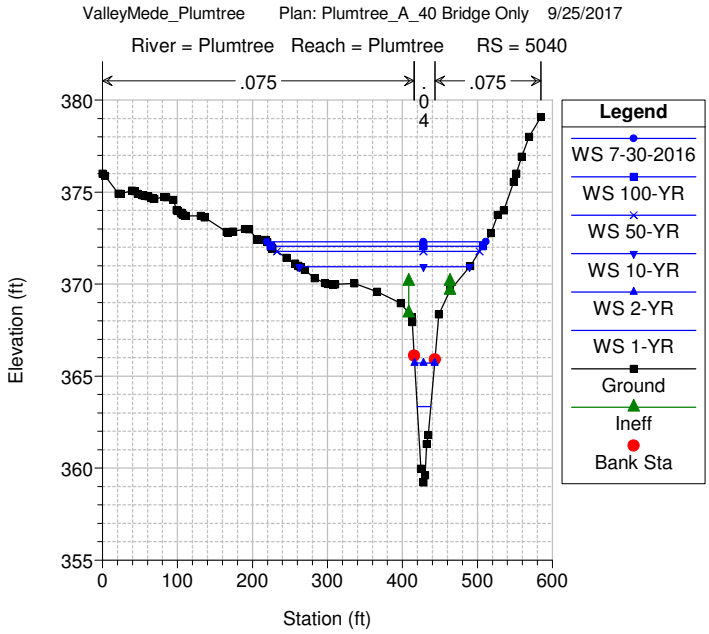

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5474
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

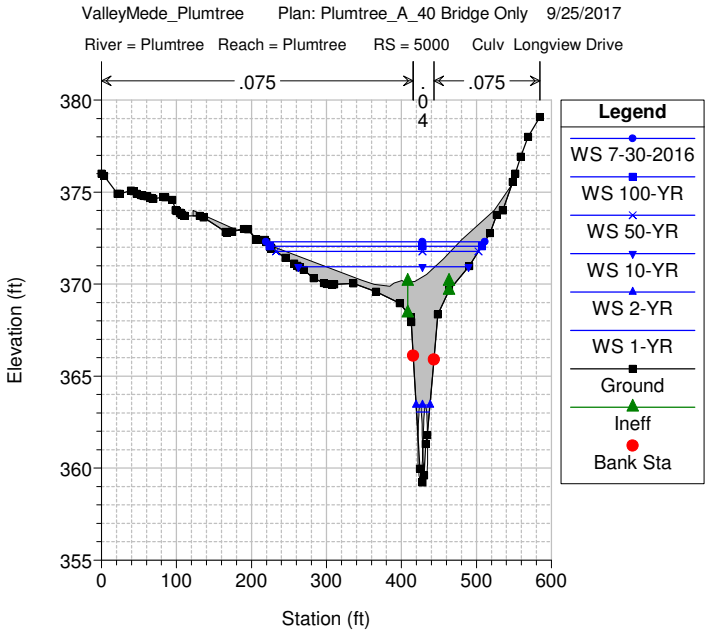

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5419
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

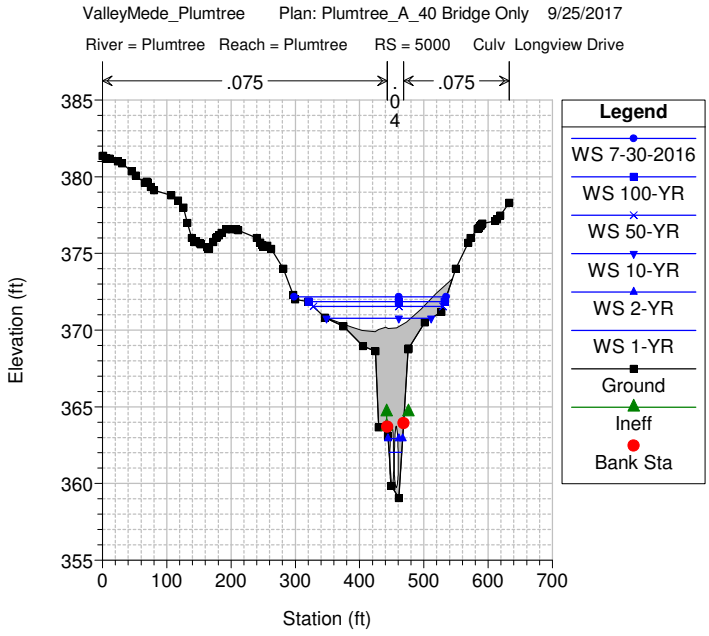

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5323
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

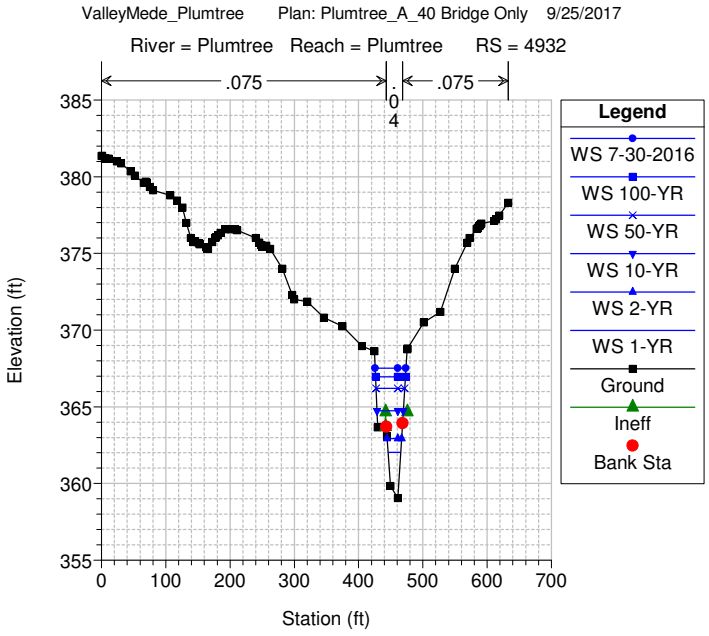

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5209
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

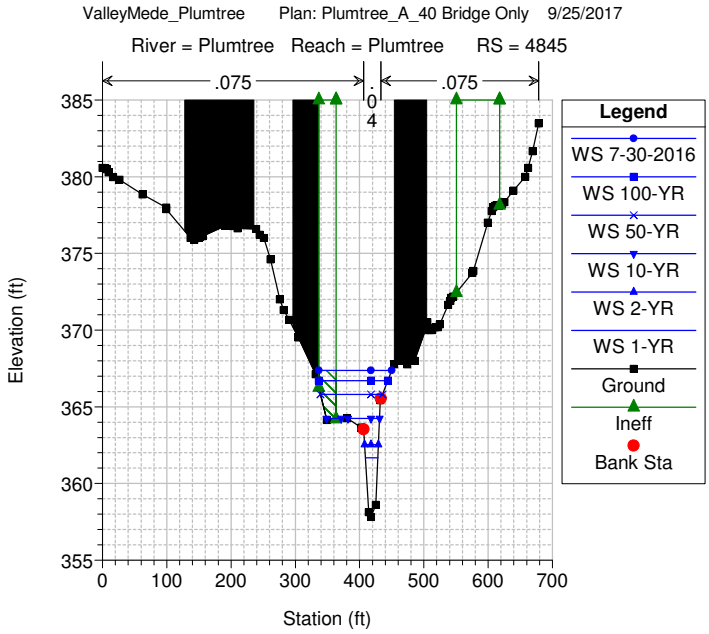

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5107
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

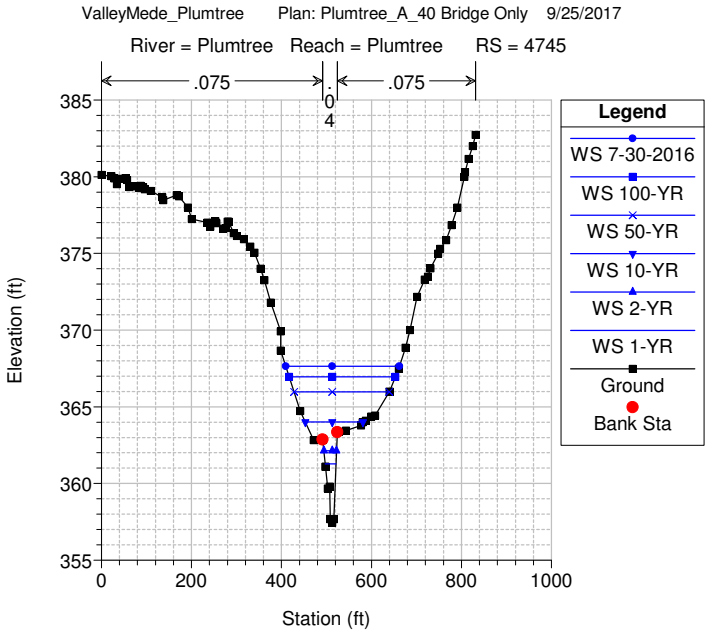

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5040
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

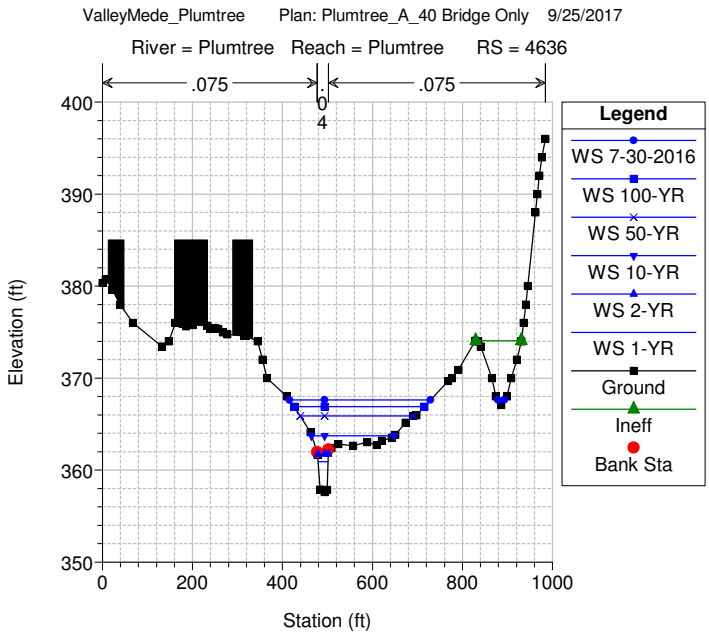

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

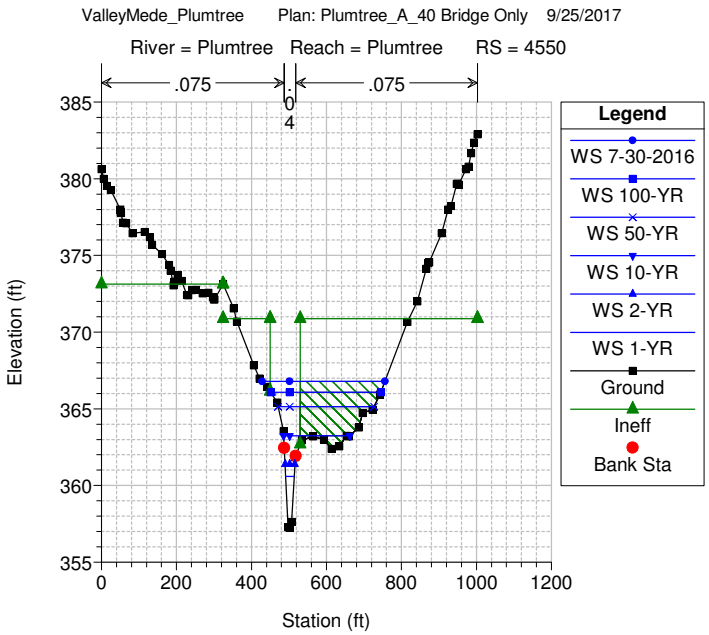

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

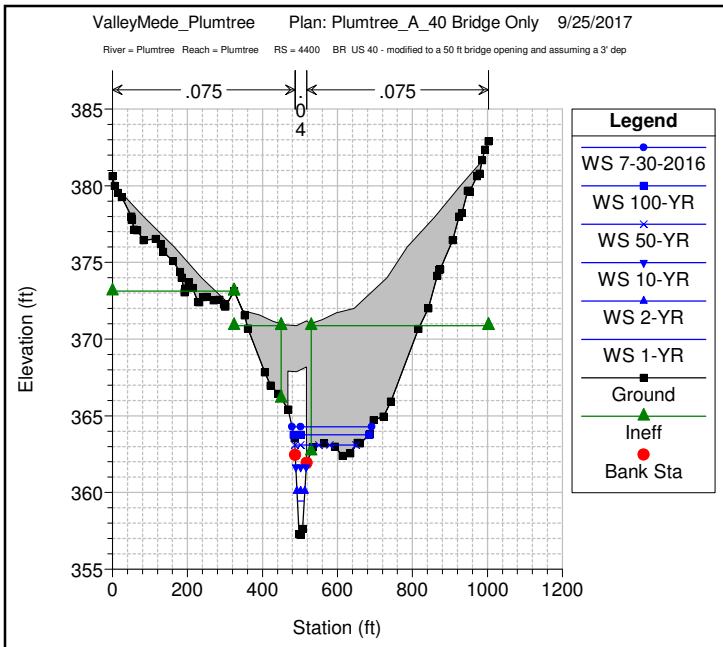

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4932
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

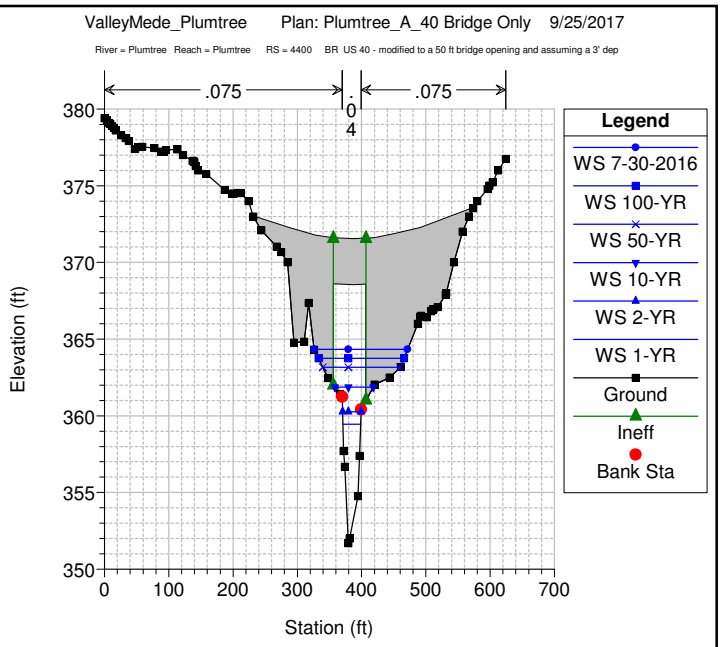

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4845
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

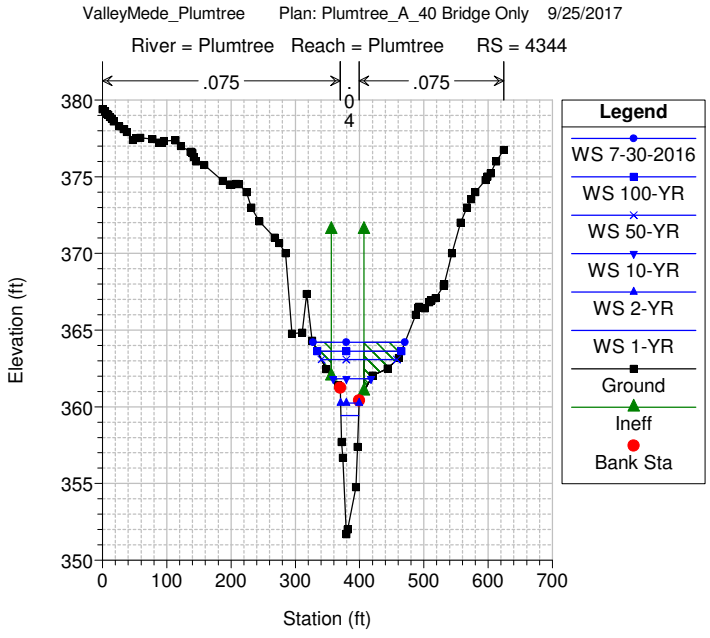

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4745
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

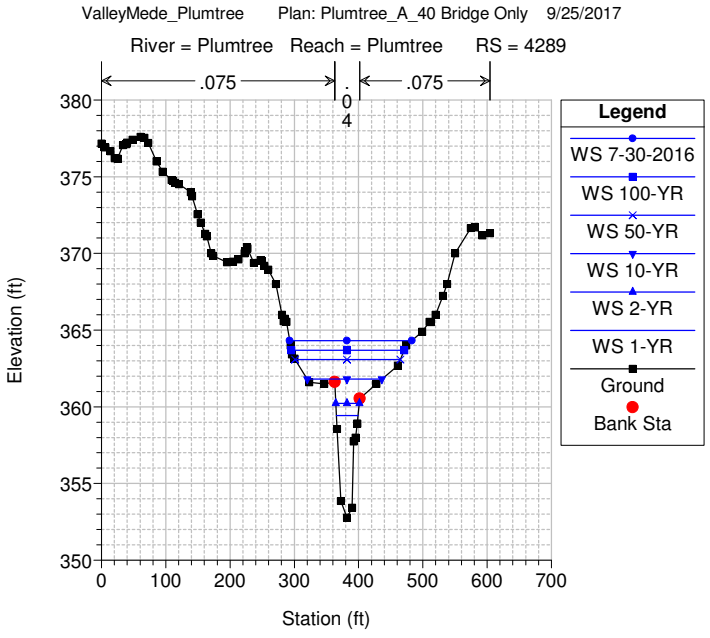

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4636
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

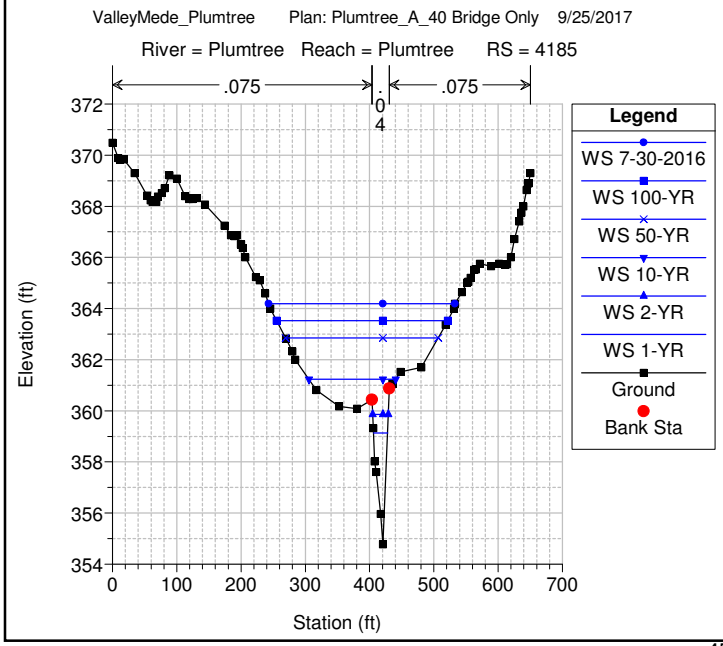

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4550
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

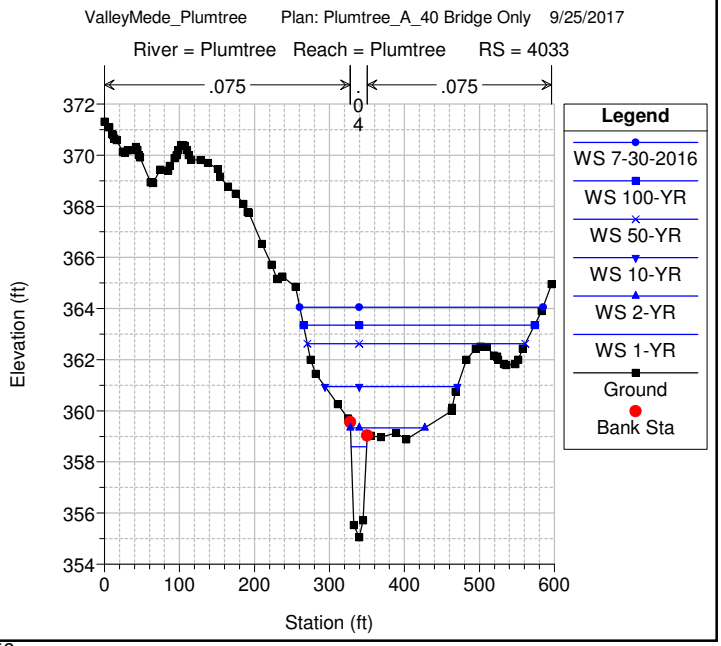

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 BR US 40 - modified to a 50 ft bridge opening and assuming a 3' dep
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

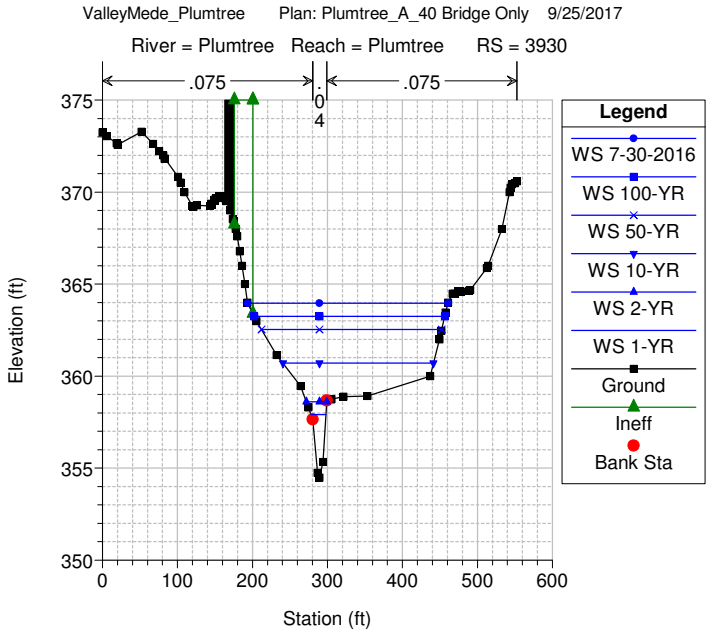

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 BR US 40 - modified to a 50 ft bridge opening and assuming a 3' dep
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

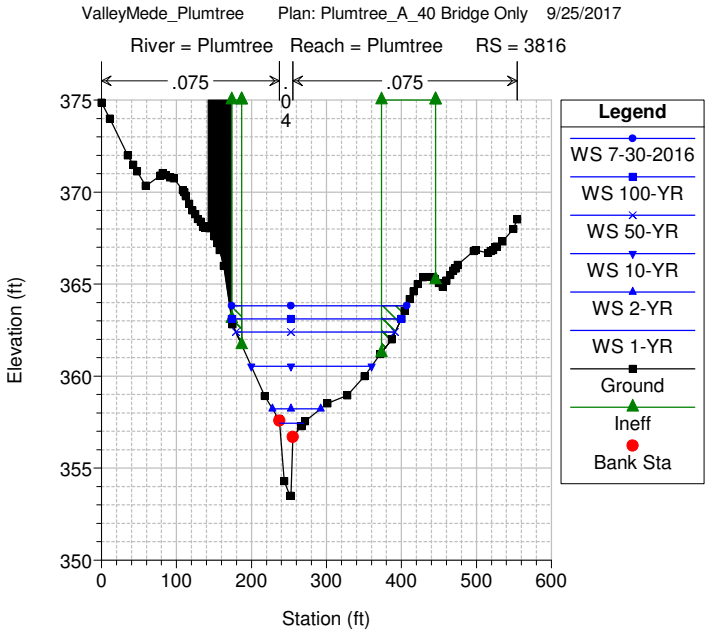

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4344
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

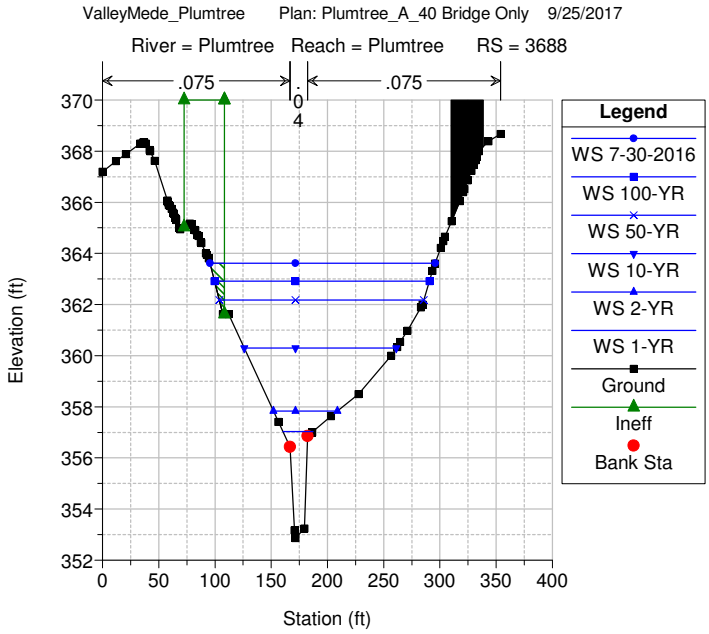

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4289
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

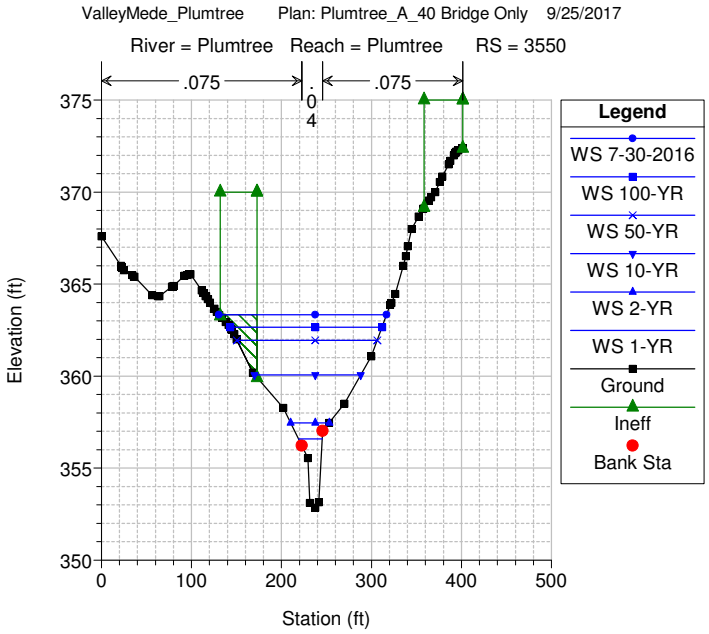

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4185
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

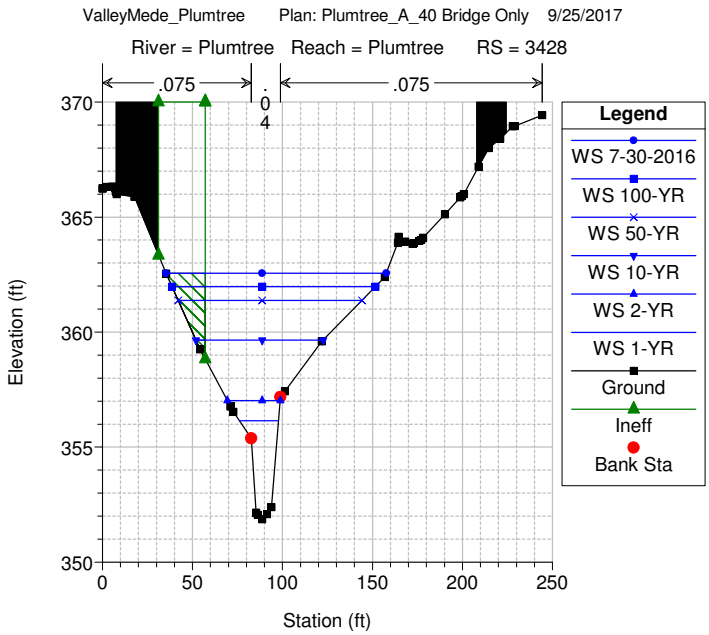

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 4033
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

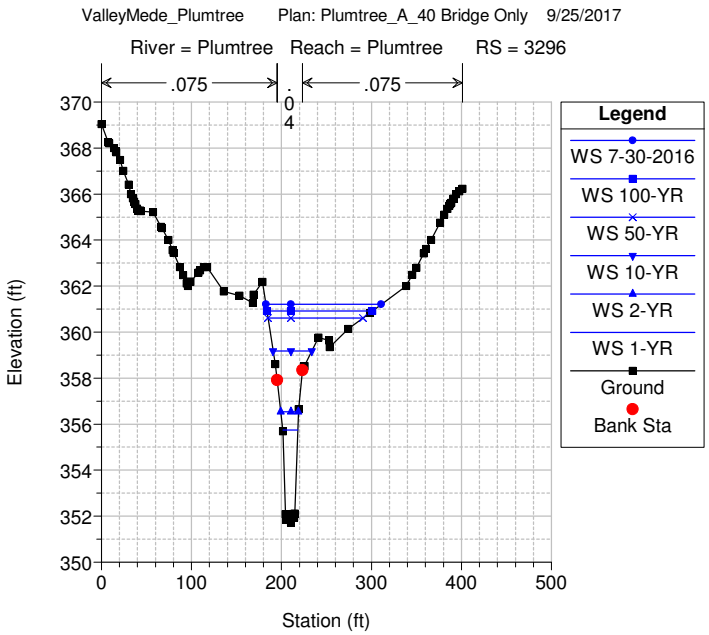

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 3930
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 3816
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 3688
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

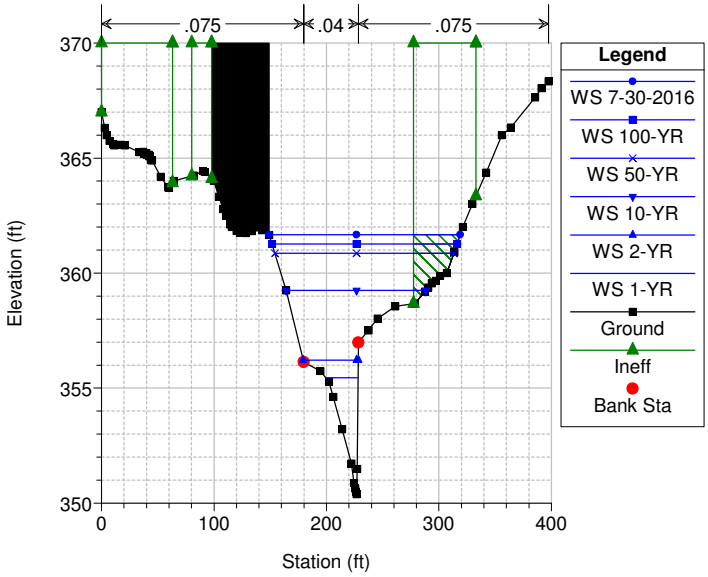

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 3550
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 3428
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 3296
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

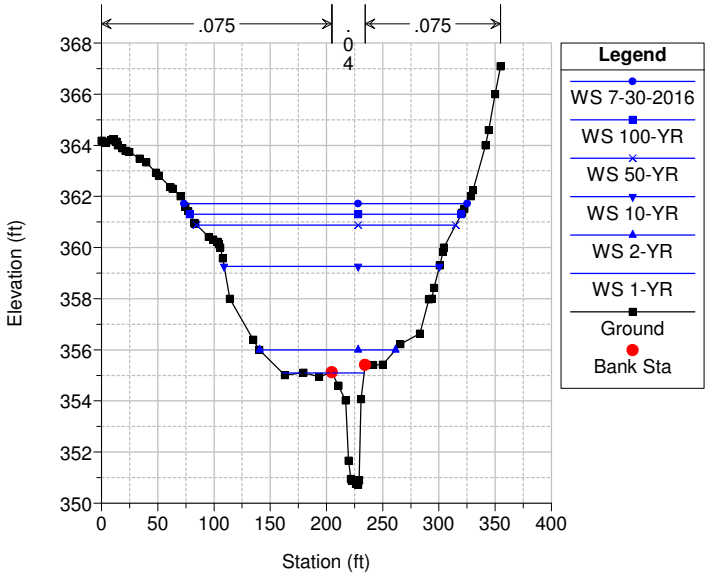
ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017

River = Plumtree Reach = Plumtree RS = 3179



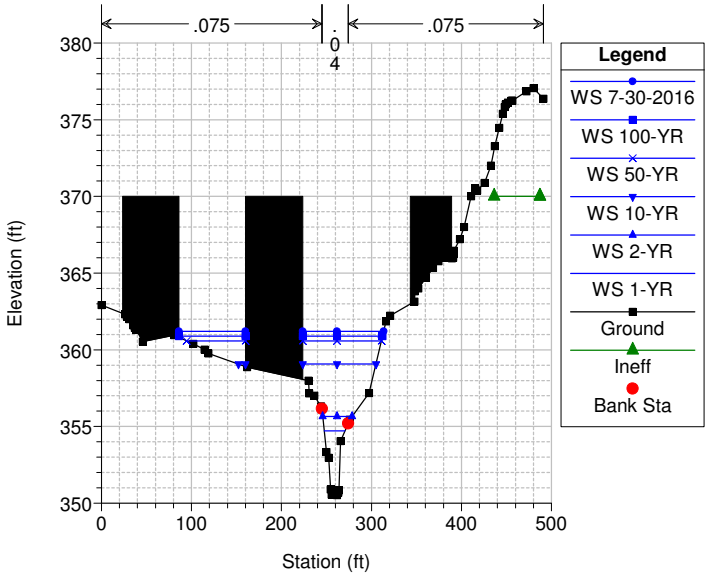
ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017

River = Plumtree Reach = Plumtree RS = 3077



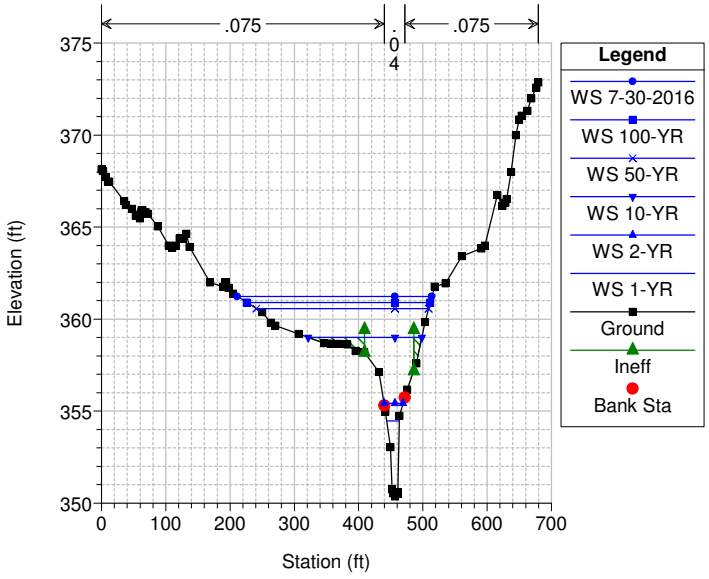
ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017

River = Plumtree Reach = Plumtree RS = 2978



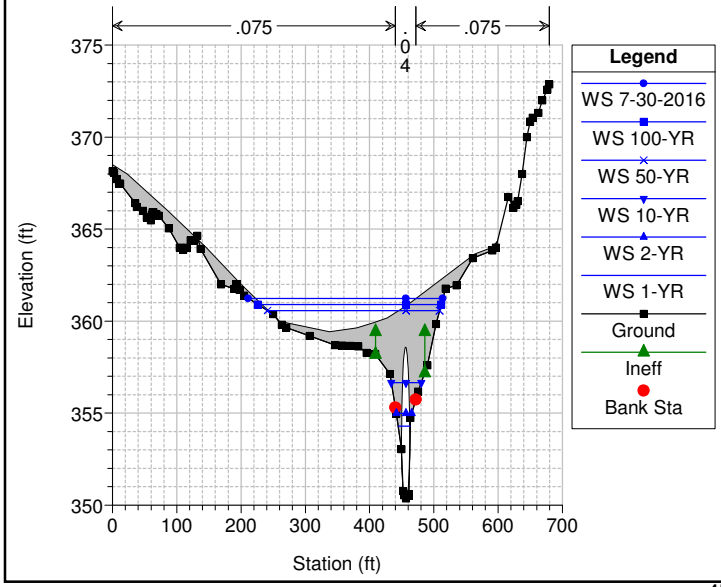
ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017

River = Plumtree Reach = Plumtree RS = 2917



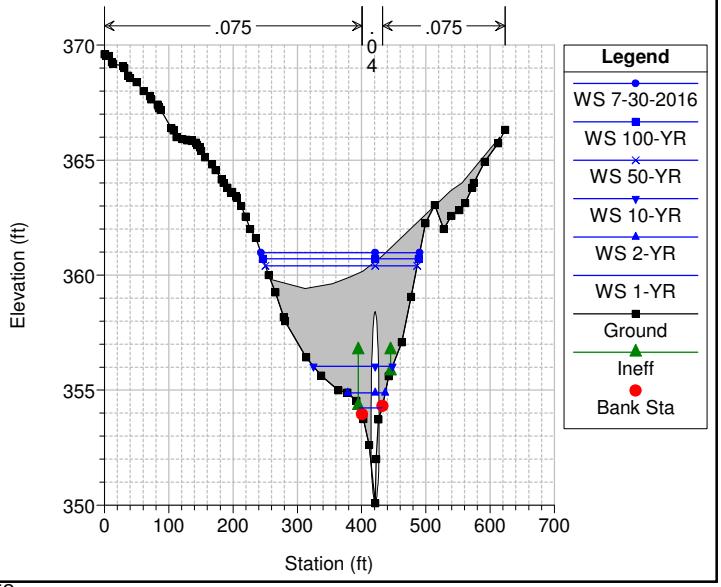
ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017

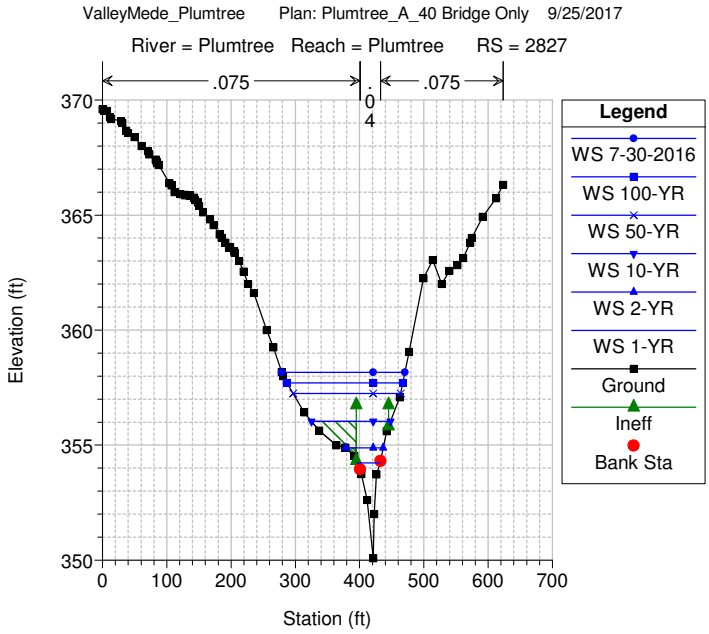
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road

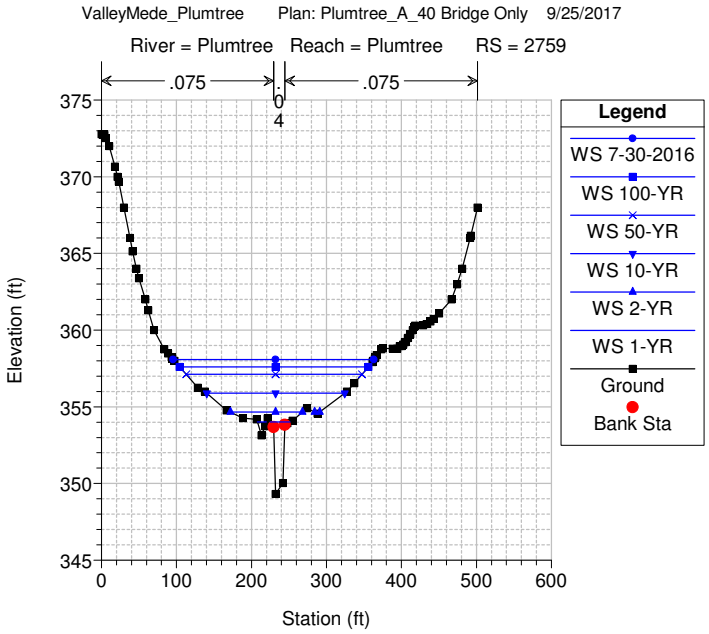


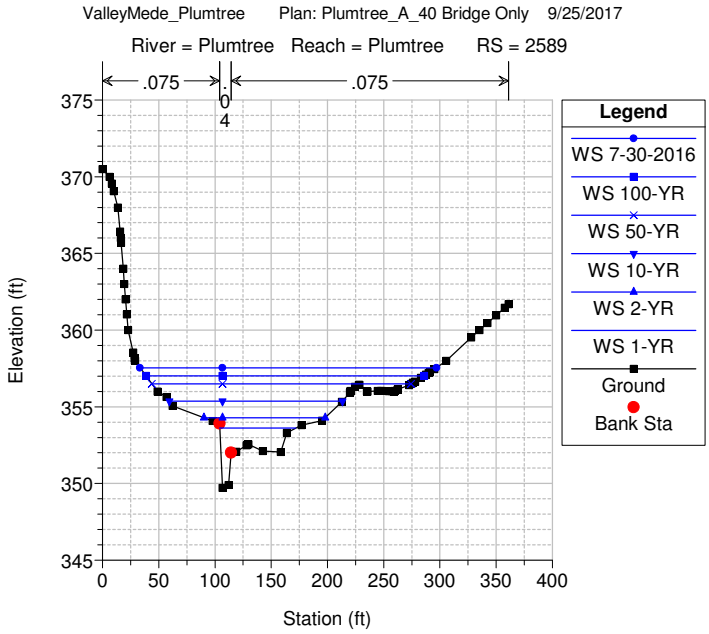
ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017

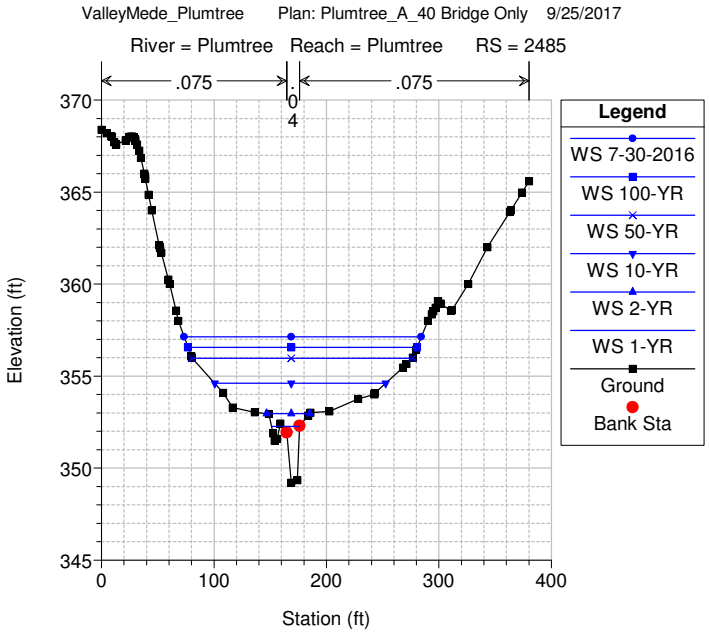
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road

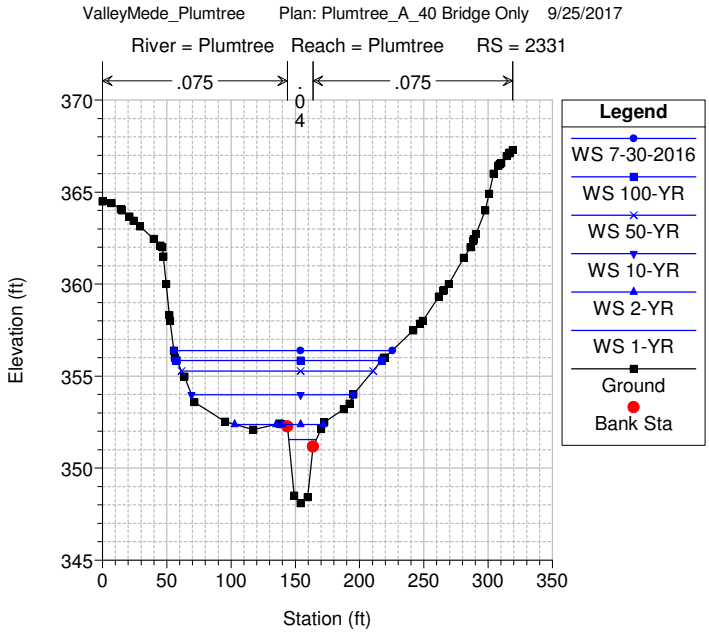


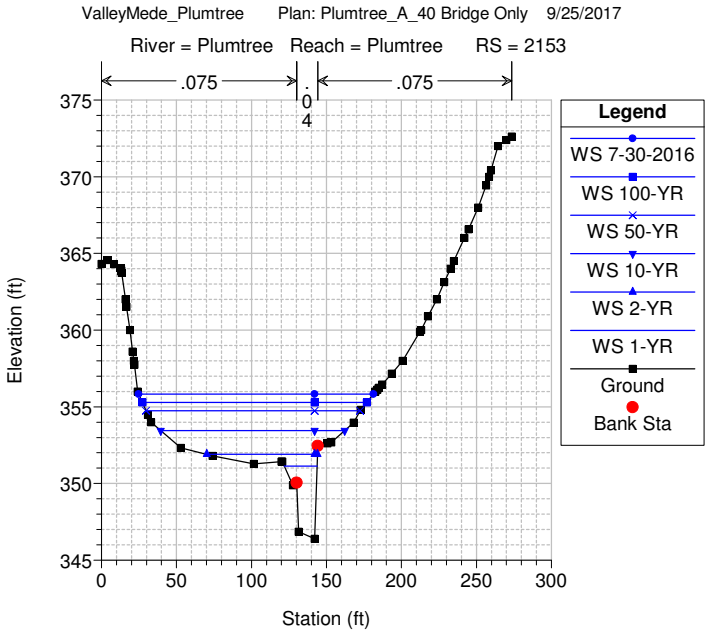

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 2827
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

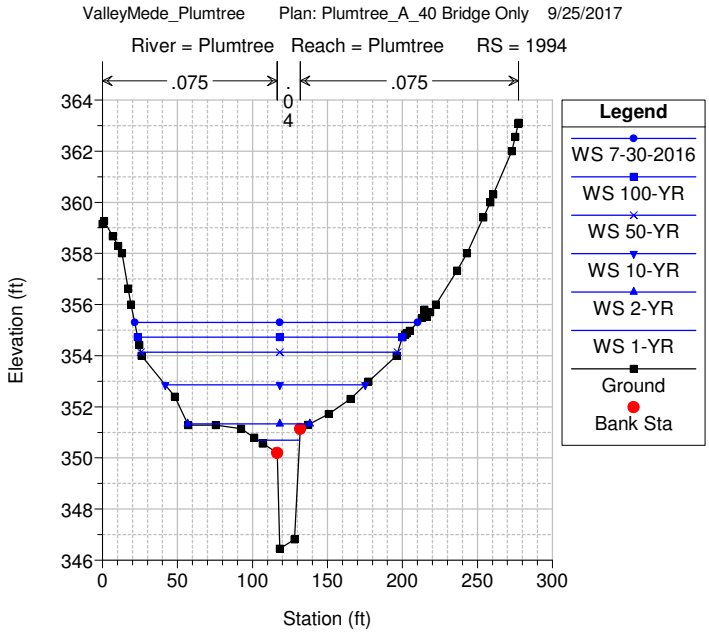

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 2759
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

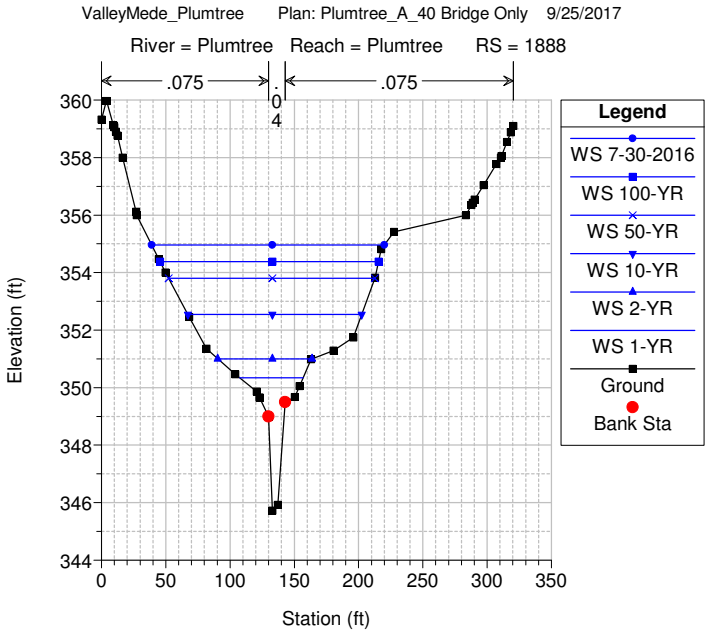

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 2589
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

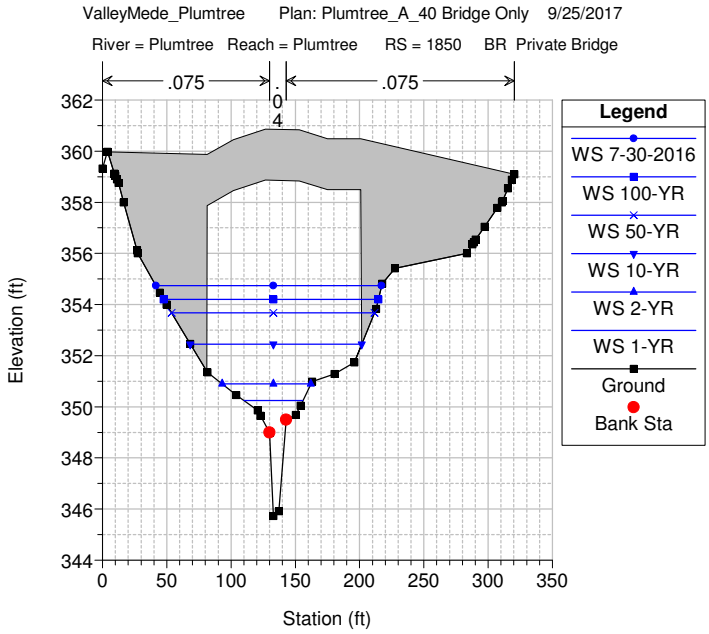

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 2485
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

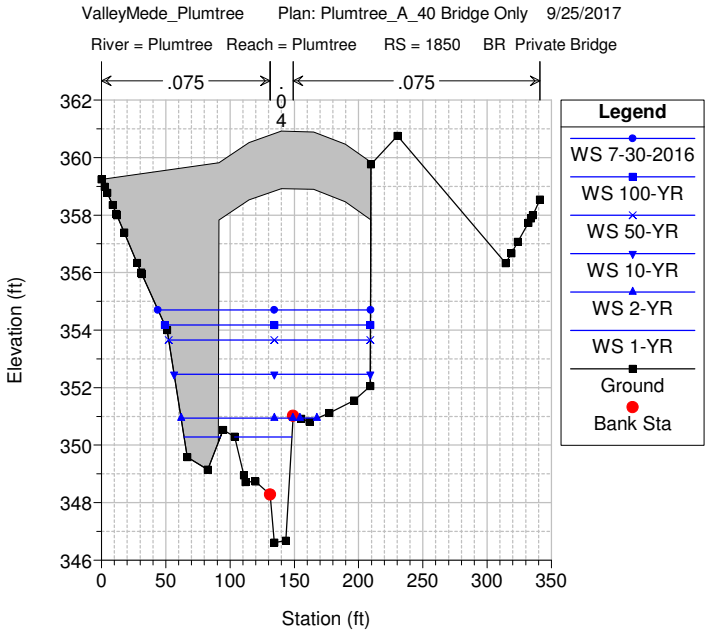

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 2331
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

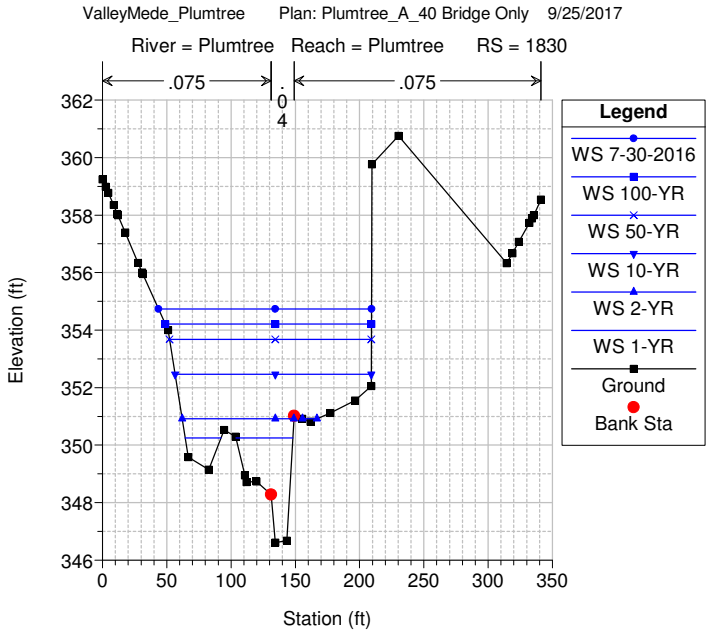

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 2153
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

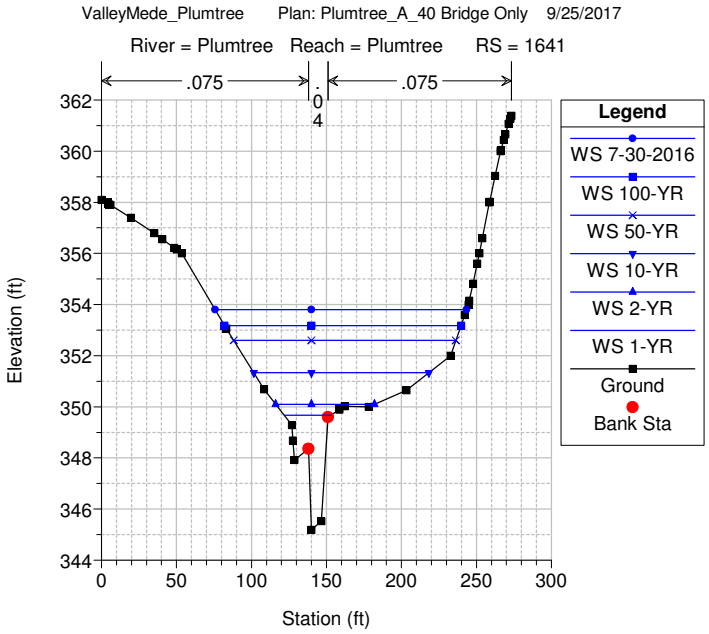

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 1994
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

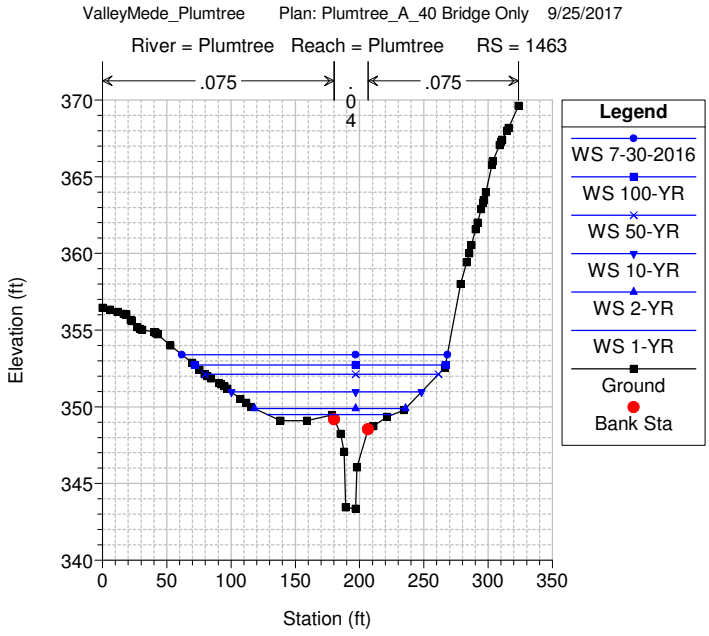

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 1888
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

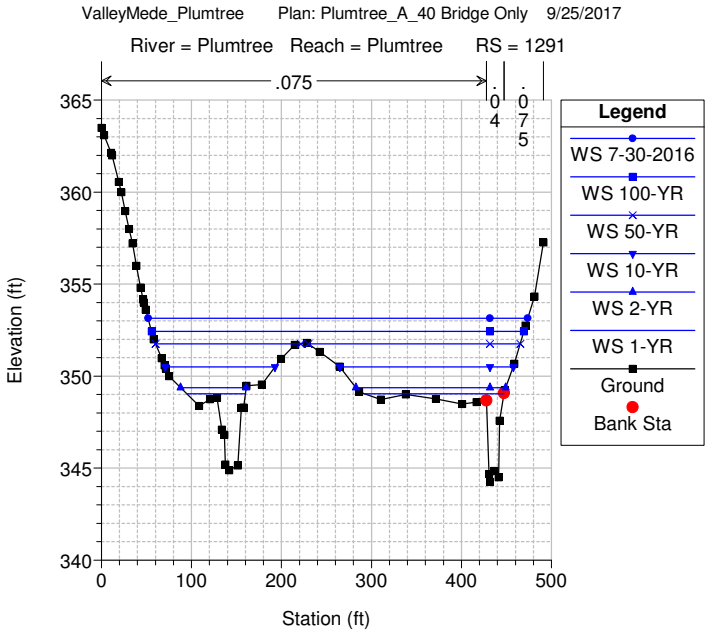

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

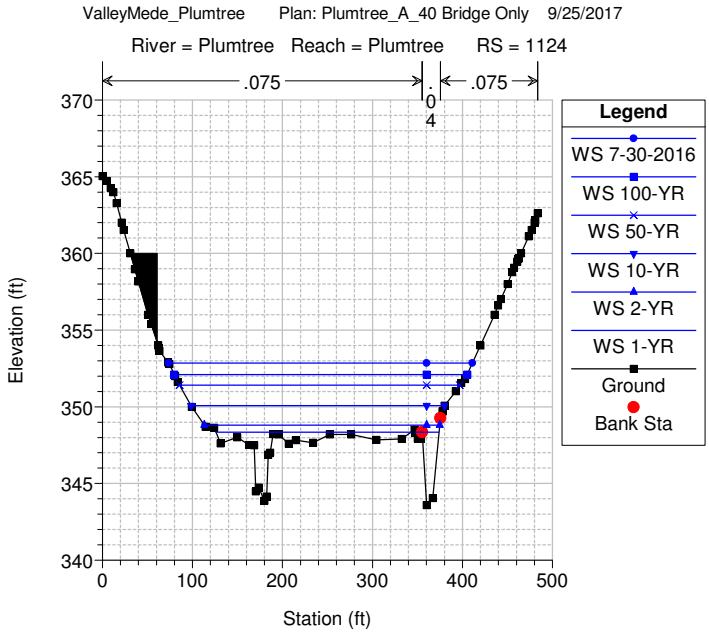

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

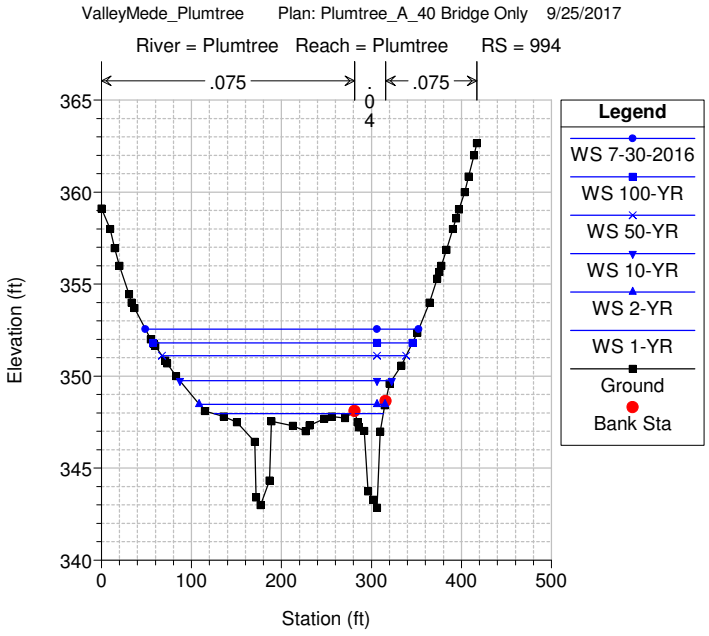

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 1830
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

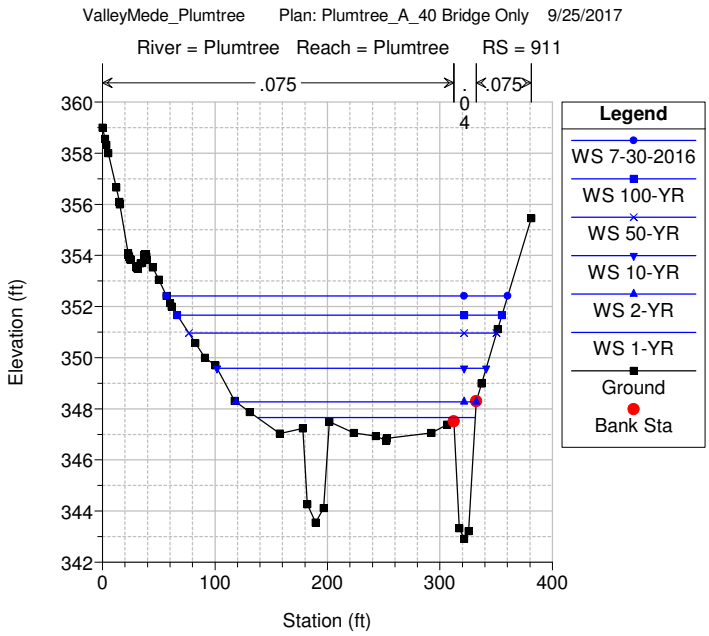

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 1641
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

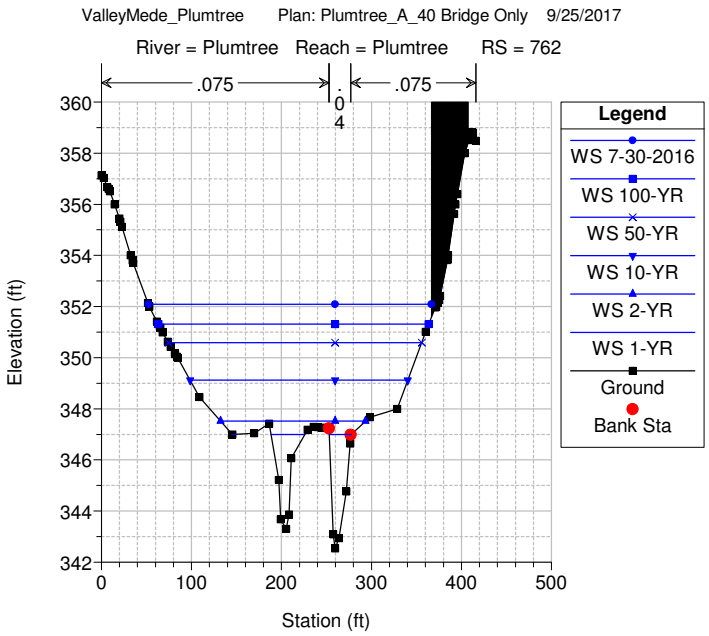

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 1463
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

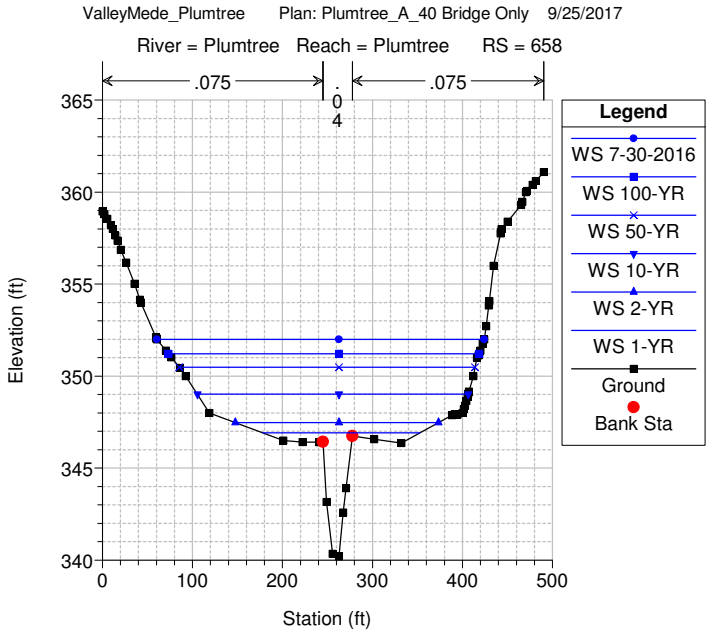

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 1291
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

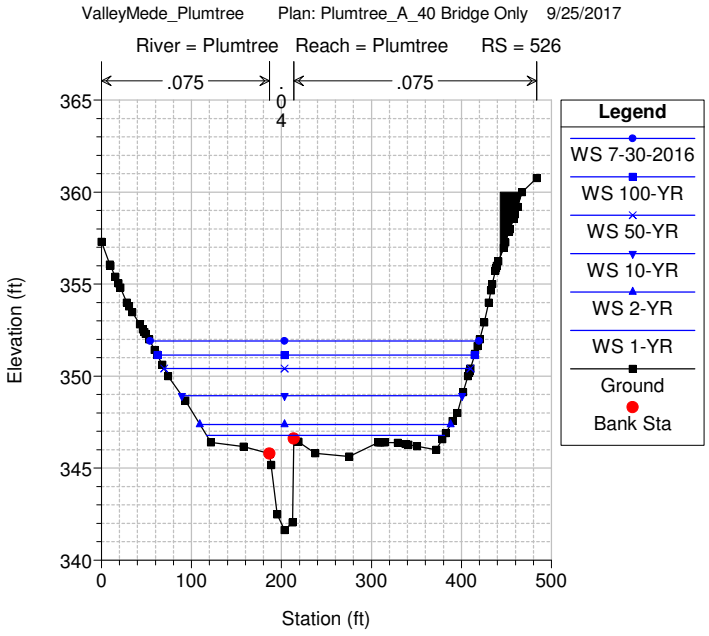

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 1124
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

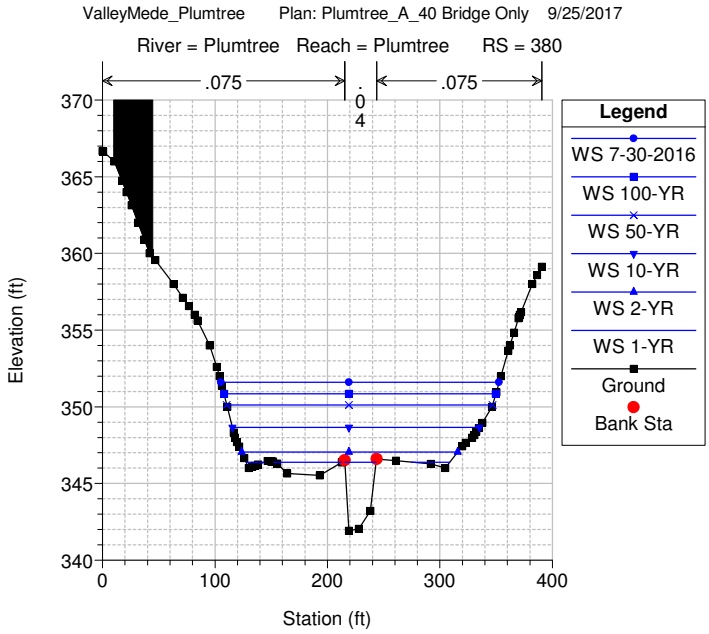

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 994
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

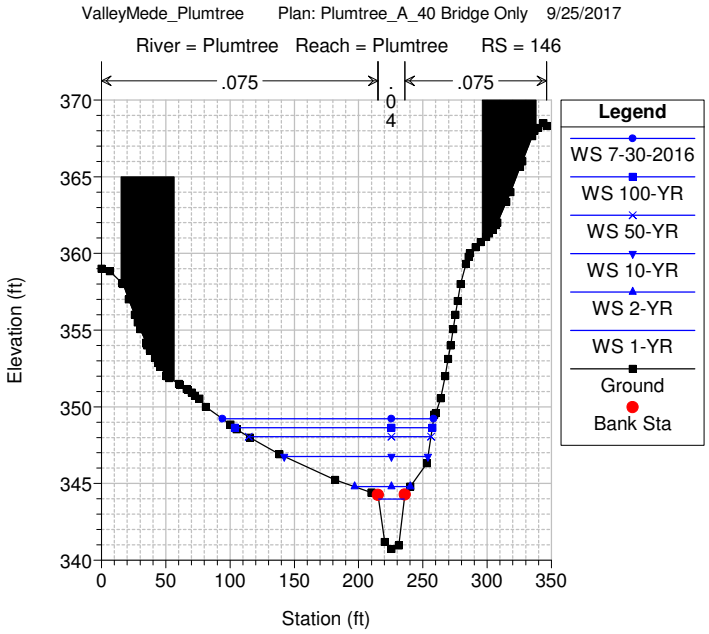

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 911
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

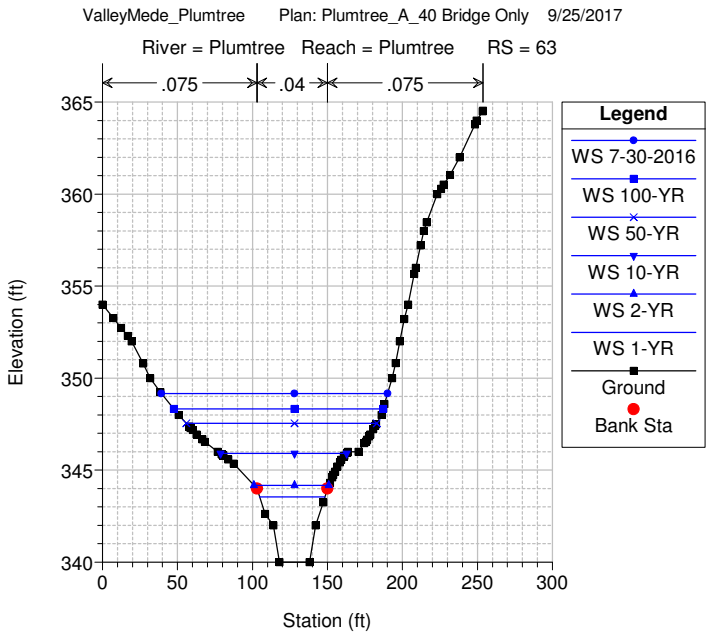

ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 762
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 658
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 526
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 380
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 146
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_A_40 Bridge Only 9/25/2017
River = Plumtree Reach = Plumtree RS = 63
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: ValleyMede_Plumtree
Project File : ValleyMede_Plumtree.prj
Run Date and Time: 9/25/2017 6:37:14 AM

Project in English units

PLAN DATA

Plan Title: Plumtree_A_40 Bridge Only
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.p02

Geometry Title: Plumtree_A_40 Bridge Only
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g08

Flow Title : Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f01

Plan Description:
Proposed condition which includes replacing the US 40 culvert with a bridge.

Plan Summary Information:

Number of:	Cross Sections	= 85	Multiple Openings	=	0
	Culverts	= 5	Inline Structures	=	0
	Bridges	= 3	Lateral Structures	=	0

Computational Information

Water surface calculation tolerance	= 0.01
Critical depth calculation tolerance	= 0.01
Maximum number of iterations	= 20
Maximum difference tolerance	= 0.3
Flow tolerance factor	= 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f01

Flow Data (cfs)

River	Reach	RS	1-YR	2-YR	10-YR	50-YR	100-YR
7-30-2016							
Plumtree	Plumtree	10286	223	307	596	995	1200
1333							

Plumtree	Plumtree	9499	204	321	719	
1263	1578	1757				
Plumtree	Plumtree	6568	209	334	772	
1391	1736	2002				
Plumtree	Plumtree	4185	194	295	741	
1395	1765	2157				
Plumtree	Plumtree	1291	408	581	1316	
2351	2995	3782				

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Plumtree	Plumtree	1-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	2-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	10-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	50-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	100-YR	Critical	Normal S = 0.0035

GEOMETRY DATA

Geometry Title: Plumtree_A_40 Bridge Only
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g08

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10286

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	421.06	4.46	420.89	12.57	420.32	16.13	420	21.94	419.29
34.88	418	40.42	417.33	49.09	416.56	55.82	416.21	59.64	416.08
64.03	416.14	69.28	416.31	71.51	416.31	77.01	416.75	78.81	416.76
87.6	416	91.89	415.92	104.16	414	107.04	413.94	110.15	414
119.18	415.05	122.23	414.9	125.21	414.83	141.42	414.84	151.61	414.58
159.6	414.54	167.19	414.69	175.25	414.38	179.96	413.77	184.56	413.83
198.65	413.63	213.29	412.97	221.19	413.06	244.79	412.19	252.86	412
260.69	411.14	268.55	410	275.66	409.1	281.64	408	295.07	406.35
301.98	405.73	324.56	404	331.77	402.81	335.97	402	342.56	400
348.24	398	350.27	397.89	380.47	396.22	384.18	396	392.32	395.09
392.68	395.09	397.28	395.62	402.89	396.12	413.25	396.41	418.97	396.59
431.99	396.41	448.58	396.55	450.96	396.5	456.66	396	465.37	395.79
485.62	395.34	494.65	395.35	513.52	395.9	514.52	396	527.48	398
535.86	400	542.87	402	555.37	406	562.67	408	571.1	410
582.03	412	599.19	414	605.88	414.94	612.34	415.57	635.29	417.19

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	380.47	.04	413.25	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
380.47	413.25	240.46	241.25	237.2	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
418.97	635.29	396.59	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10044

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	412.61	5.59	412.52	12.02	412	24.56	410	43.68	408
63.32	407.31	82.83	408	95.82	408.67	112.17	408.9	135.95	408
150.67	407.02	155.38	406.93	170.58	407.72	184.39	408.12	187.95	408
198.17	406	207.41	404.64	213.72	403.97	220.01	403.47	230.16	403.33

```
  237.26  402.98  240.08  402.75  253.05   401.3  261.48     400  269.64     398
  276.05     396  280.89   394.8  280.91  394.79  283.98     394  296.18  392.49
  306.31  393.62   315.4  393.68  315.41  393.68   321.2  393.72  340.79   393.4
  357.04  393.75  384.23  394.62  389.34  394.61   409.5     394  417.56  393.18
  419.37  393.18  428.98     394  438.91  394.31  451.85  394.26   461.9  394.35
  480.45  394.77   489.6  395.18  496.68   395.1  547.82     396  555.48  396.43
  564.03  396.66  570.08  396.96  600.19   397.8  605.55  398.35  610.97  398.79
  622.38  399.08  632.53     400  658.42  401.23  661.34  401.26  665.82  401.48
  679.52  401.73  692.52  401.54  695.05  401.76  701.43  401.68  704.45   401.5
  715.06  401.24  723.65  401.19  738.24  400.62  741.08  400.41  748.78  400.57
  754.02  400.82  766.27  400.65  779.16  401.67  781.77     402  794.47     404
  812.23     408  815.19   408.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  280.91     .04   321.2    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.91   321.2            233.9  230.57  222.97             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9814

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  408.67   12.64     408    20.9   407.3   27.53  406.98    42.5  406.44
   45.07  406.25   49.58  405.72   78.23  403.56   83.62  402.79   92.79  403.11
  109.61   402.4   113.8     402  123.62  401.65  158.68  400.12  170.91  398.99
  182.64     398  195.08     396  198.75  395.24  205.66     394  253.13     392
   256.5  391.77  269.73  390.59  269.76  390.59  276.29     390  281.78  388.76
  287.27     390     300  391.49  302.59  391.81  308.77   392.3  315.09  392.31
  322.12  392.41  326.48  392.65  332.87  392.67  336.92  392.57  358.02  392.79
  362.67  392.97  366.57  392.83  382.15  392.69  386.15  392.76  408.35  392.69
  415.33  392.55  427.21  392.45  466.82  393.37  473.56  393.78  479.56     394
  490.09  394.88  500.42  395.03  503.77  395.29  508.66  395.37  510.05  395.29
  514.08  395.75  518.53   395.7  538.06  395.23  547.13  395.22  564.37     396
  575.99  396.66  593.58  397.53   602.7  396.78  604.57  396.76  609.13  397.48
  610.69     398  617.78   398.3   636.1  398.77  690.36  399.64  696.36  399.66
  731.55   398.7   739.3  398.59  745.07  398.39  755.19  398.48   767.5  398.81
  779.98  399.52  790.91  399.95  806.05     402  818.51   403.5  823.74     404
  826.23   404.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  253.13     .04  308.77    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        253.13  308.77            52.19   51.52   50.85             .1       .3
Right Levee     Station=  514.08      Elevation=  395.75

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9762

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  406.21    1.37     406   14.09  404.95   24.55  404.21   38.68  402.62
   47.25     402   67.31     400   71.18  399.81    79.7  399.62   84.43  399.37
  117.61  398.32   130.2  398.16  134.88     398  147.37  397.38  157.13  397.03
  162.41  397.34  174.01  396.74  180.45     396  203.34  393.86  225.77  392.62
  235.15     392  236.85  391.76  246.11  391.05  253.44  390.35  253.48  390.34
  256.39     390  260.62  388.92  263.74     388  265.59  389.21  267.49     388
  276.02     390  282.13     392   284.2  392.49  284.22  392.49  290.57     394
  292.66  393.58  294.75     394   307.3  392.92  329.54  391.59  336.98  391.01
  346.17  391.13  351.58  391.28  355.99  391.22  362.72  391.29  365.01  391.44
  375.54  391.54  383.33  391.42  390.57  391.67  406.22     392  413.09  392.62
  427.35  393.41  431.42   393.8  432.21     394  447.82  395.11  449.31  395.15
  470.35  394.72   473.7  395.12  482.31  395.53  496.51  395.21  507.72  395.47
  543.73  396.64  554.26  396.66  559.24  396.89  562.97  396.96  568.76  397.23
  584.75  397.94  589.53  398.31  594.28     398  601.77  397.68  611.77     398
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   662.6   399.2  729.79  397.67  753.67  397.86  761.91     398   785.2  399.61
  794.52  400.41  805.84  402.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  235.15     .04  284.22    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.15  284.22            32.64   30.09   27.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9732

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5 391.537   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15 391.535  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  121.15           145.71  143.47  141.55             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 9650

INPUT
Description: Michaels Way
Distance from Upstream XS =      51
Deck/Roadway Width        =      50
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  396.38            26.1 395.934            49.6 395.582
    91.4 394.914           117.4 394.746           144.9 394.497
   186.3 394.402          211.94 394.376          238.63 394.594
  353.45     396

Upstream Bridge Cross Section Data
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5 391.537   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15 391.535  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
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  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
          82.5  121.15            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  397.96             8.6   397.3            45.6 396.969
    68.8 396.671            92.4  396.38           123.2 395.934
   146.8 395.582           191.3 394.914           209.6 394.746
   232.9 394.497           262.2 394.402           288.2 394.376
  314.98 394.594          417.56     396

Downstream Bridge Cross Section Data
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.96   15.99  396.01   17.57     396   20.76  395.29   25.99  395.01
   29.32  394.71   29.33  394.38   39.55  392.85   60.92  392.22   95.59   390.4
  100.13  389.82  106.73  388.97  116.38  387.66  117.95  386.81  124.68  386.27
  130.57  386.46  134.27   387.9   134.7     388  137.88  388.68  144.79  390.87
  157.88  392.09  174.45  391.81  191.33  392.09  218.95   392.7   229.4  392.07
  229.72  392.09  239.13  392.16  239.87  392.21  251.99  392.37  252.81  392.33
  253.84  392.05  264.78  392.06  265.66  392.35  265.82  392.37  274.13  392.48
  275.38  392.39   275.8  392.37  280.37  392.38  285.74  392.34  288.04  392.35
  289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
  294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
  302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
  336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
  353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
  363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         106.73  137.88            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8   391.2       F
   140.7  417.56   391.2       F

Upstream Embankment side slope              =       3 horiz. to 1.0 vertical
Downstream Embankment side slope            =       3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 13   114.5     .024     .016        0                  .5                1
Upstream   Elevation =  387.74
           Centerline Station =  102
Downstream Elevation =  386.61
           Centerline Station =  120

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch5.916667    8.58
```

FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	13	114.6	.024	.016	0	.5	1

Upstream Elevation = 387.77
Centerline Station = 112
Downstream Elevation = 386.6
Centerline Station = 130

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	112.20	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.43
Q Barrel (cfs)	112.20	Culv Vel DS (ft/s)	5.35
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.24
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.64	Weir Sta Lft (ft)	
E.G. OC (ft)	391.04	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.01	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	146.33	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.10
Q Barrel (cfs)	146.33	Culv Vel DS (ft/s)	5.56
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	390.20	Culv Frctn Ls (ft)	0.84
W.S. DS (ft)	389.99	Culv Exit Loss (ft)	0.27
Delta EG (ft)	1.35	Culv Entr Loss (ft)	0.51
Delta WS (ft)	1.37	Q Weir (cfs)	
E.G. IC (ft)	391.22	Weir Sta Lft (ft)	
E.G. OC (ft)	391.64	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.11	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.99	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.37	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.37	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	298.28	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	298.28	Culv Vel DS (ft/s)	8.93
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	391.43	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	391.04	Culv Exit Loss (ft)	0.85
Delta EG (ft)	2.53	Culv Entr Loss (ft)	0.70
Delta WS (ft)	2.76	Q Weir (cfs)	
E.G. IC (ft)	393.54	Weir Sta Lft (ft)	
E.G. OC (ft)	393.96	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.87	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.98	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	365.61	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	365.61	Culv Vel DS (ft/s)	9.43
E.G. US. (ft)	395.25	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.11	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.59	Culv Frctn Ls (ft)	0.24
W.S. DS (ft)	392.07	Culv Exit Loss (ft)	0.86

Delta EG (ft)	2.66	Culv Entr Loss (ft)	0.69
Delta WS (ft)	3.04	Q Weir (cfs)	263.03
E.G. IC (ft)	394.79	Weir Sta Lft (ft)	70.13
E.G. OC (ft)	395.24	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.16	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	392.07	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)	5.05	Weir Flow Area (sq ft)	123.26
Culv Crt Depth (ft)	3.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	352.60	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.81
Q Barrel (cfs)	352.60	Culv Vel DS (ft/s)	8.81
E.G. US. (ft)	395.57	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.40	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	1.15
W.S. DS (ft)	392.60	Culv Exit Loss (ft)	0.69
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.60
Delta WS (ft)	2.80	Q Weir (cfs)	493.18
E.G. IC (ft)	394.49	Weir Sta Lft (ft)	49.49
E.G. OC (ft)	395.55	Weir Sta Rgt (ft)	286.44
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.21
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.83
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	196.32
Culv Crt Depth (ft)	3.86	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	347.45	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.68
Q Barrel (cfs)	347.45	Culv Vel DS (ft/s)	8.68
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.59	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.38	Culv Frctn Ls (ft)	1.11
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.38	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.70	Q Weir (cfs)	637.61
E.G. IC (ft)	394.37	Weir Sta Lft (ft)	43.81
E.G. OC (ft)	395.76	Weir Sta Rgt (ft)	291.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.37
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	237.06
Culv Crt Depth (ft)	3.81	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.80	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.48
Q Barrel (cfs)	110.80	Culv Vel DS (ft/s)	5.26
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.35
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.22
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.65	Weir Sta Lft (ft)	
E.G. OC (ft)	391.05	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.74	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.97	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.94	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	160.67	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.38
Q Barrel (cfs)	160.67	Culv Vel DS (ft/s)	6.08
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	390.20	Culv Frctn Ls (ft)	0.84

W.S. DS (ft)	389.99	Culv Exit Loss (ft)	0.36
Delta EG (ft)	1.35	Culv Entr Loss (ft)	0.10
Delta WS (ft)	1.37	Q Weir (cfs)	
E.G. IC (ft)	391.46	Weir Sta Lft (ft)	
E.G. OC (ft)	391.91	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	390.27	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.99	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.49	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.50	Min El Weir Flow (ft)	394.39

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	297.72	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.57
Q Barrel (cfs)	297.72	Culv Vel DS (ft/s)	8.90
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	391.43	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	391.04	Culv Exit Loss (ft)	0.84
Delta EG (ft)	2.53	Culv Entr Loss (ft)	0.71
Delta WS (ft)	2.76	Q Weir (cfs)	
E.G. IC (ft)	393.56	Weir Sta Lft (ft)	
E.G. OC (ft)	393.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.84	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	366.36	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.50
Q Barrel (cfs)	366.36	Culv Vel DS (ft/s)	9.44
E.G. US. (ft)	395.25	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.11	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.59	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	392.07	Culv Exit Loss (ft)	0.87
Delta EG (ft)	2.66	Culv Entr Loss (ft)	0.70
Delta WS (ft)	3.04	Q Weir (cfs)	263.03
E.G. IC (ft)	394.84	Weir Sta Lft (ft)	70.13
E.G. OC (ft)	395.26	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.15	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	392.07	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)	4.90	Weir Flow Area (sq ft)	123.26
Culv Crt Depth (ft)	3.97	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	354.22	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.85
Q Barrel (cfs)	354.22	Culv Vel DS (ft/s)	8.85
E.G. US. (ft)	395.57	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.40	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	1.16
W.S. DS (ft)	392.60	Culv Exit Loss (ft)	0.70
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.61
Delta WS (ft)	2.80	Q Weir (cfs)	493.18
E.G. IC (ft)	394.55	Weir Sta Lft (ft)	49.49
E.G. OC (ft)	395.58	Weir Sta Rgt (ft)	286.44
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.21
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.83
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	196.32
Culv Crt Depth (ft)	3.87	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	347.95	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.70
Q Barrel (cfs)	347.95	Culv Vel DS (ft/s)	8.70
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.59	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.38	Culv Frctn Ls (ft)	1.12
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.38	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.70	Q Weir (cfs)	637.61
E.G. IC (ft)	394.41	Weir Sta Lft (ft)	43.81
E.G. OC (ft)	395.77	Weir Sta Rgt (ft)	291.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.37
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	237.06
Culv Crt Depth (ft)	3.82	Min El Weir Flow (ft)	394.39

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01
29.32	394.71	29.33	394.38	39.55	392.85	60.92	392.22	95.59	390.4
100.13	389.82	106.73	388.97	116.38	387.66	117.95	386.81	124.68	386.27
130.57	386.46	134.27	387.9	134.7	388	137.88	388.68	144.79	390.87
157.88	392.09	174.45	391.81	191.33	392.09	218.95	392.7	229.4	392.07
229.72	392.09	239.13	392.16	239.87	392.21	251.99	392.37	252.81	392.33
253.84	392.05	264.78	392.06	265.66	392.35	265.82	392.37	274.13	392.48
275.38	392.39	275.8	392.37	280.37	392.38	285.74	392.34	288.04	392.35
289.04	392.37	289.76	392.35	291.67	392.43	292.2	392.41	293.73	392.52
294.34	392.49	295.48	392.61	297.43	392.5	299.89	392.58	301.52	392.7
302.57	392.72	317.67	393.33	321.58	393.35	323.43	393.4	328.45	393.52
336.04	393.41	337.54	393.43	342.18	393.53	347.45	393.83	351.46	393.93
353.19	394	353.68	394.06	355.32	394.12	356.64	394.21	359.84	394.23
363.57	394.38	408.86	396	412.96	396.28	417.56	396.44		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.73	.04	137.88	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
106.73 137.88 74.95 89.37 103.36 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	104.8	391.2	F
140.7	417.56	391.2	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9499

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.42	1.16	397.39	10.04	396	12.41	395.1	15.2	394
19.89	392.3	20.69	392	30.94	390.03	58.35	389.54	78.64	389.7
91.71	389.72	91.72	389.72	95.66	389.73	106.35	385.4	108.48	385.35
121.85	388.31	126.28	389.29	134.6	389.39	148.99	387.24	154.41	388.47
172.52	389.82	180.01	390	192.12	392	192.21	392.01	204.6	394
211.88	395.17	217.46	396	219.87	396.49	223.11	397.11	227.54	398
230.91	398.56	233.71	399	240.41	400	246.88	400.81		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	95.66	.04	126.28	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
95.66 126.28 98.65 101.8 104.92 .1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9398

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398.2	5.52	398.06	6.45	398	10.27	396.93	13.95	396
17.15	395.1	21.18	394	22.21	393.72	23.21	393.45	25.97	392.71
28.56	392	35.43	391.01	38.29	390.6	43.03	390	43.15	389.99
46.04	389.74	46.81	389.7	47.09	389.68	47.37	389.65	55.11	389.4
55.76	389.36	56.28	389.32	56.92	389.26	63.39	388.58	69.33	388.73
71.4	388.44	71.45	389.03	80.15	389.63	92.99	388.55	114.44	388.98
120.46	388.94	120.47	388.94	128.65	388.89	134.08	384.53	135.79	384.42
141.88	384.75	145.59	388.85	150.79	388.83	167.65	388.75	186.81	388.92
200.79	389.39	202.6	390	212.88	391.15	214.18	392	222.75	392.3
224.12	392.62	227.87	392.98	232.15	393.19	232.46	393.21	235.68	393.41
238.89	393.56	241.36	393.69	244.69	393.87	245.13	393.89	247.11	394
255.3	394.93	262.09	395.66	265.18	396	268.55	396.34	272.92	396.76
279.66	397.44	280.66	397.53	281.55	397.61	285.79	398	291.8	399.12
296.37	400	301.1	400.86						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	128.65	.04	145.59	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.65	145.59	97.24	96.47	94.54	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9301

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400.19	3.07	400	4.08	399.94	4.2	399.94	13.57	399.39
15.2	399.29	20.44	399.07	21.01	399.05	21.75	399.02	22.33	399
33.53	398.93	34.16	398.91	34.62	398.89	50.07	398.18	51.97	398.04
52.52	398	56.81	396.58	58.64	396	59.61	395.91	64.07	395.25
72.56	394	73.12	393.94	74.3	393.83	84.4	392.97	90.89	392.65
97.02	392.35	101.28	392.17	101.59	392.16	101.86	392.14	101.98	392.14
104.04	392	106.2	392.22	109.76	392.28	110.09	392.26	110.2	392.25
111.04	392.21	113.1	392.09	140.12	387.83	145.5	387.55	154.95	387.07
157.77	384.36	160.52	383.31	166.94	384.65	171.14	388.29	175.86	388.27
175.87	388.27	183.69	388.23	215.21	388.62	222.39	389.2	234.24	392.69
252.67	392.11	269.21	391.61	287.95	393.96	291.68	394	304.65	395.18
314.29	395.71	317.24	395.93	317.28	395.93	318.14	396	320.84	396.21
321.8	396.3	324.25	396.51	326.08	396.68	329.75	397.01	336.95	397.7
338.16	397.81	340.03	398	341.44	398.43	347.8	400	351.27	400.78
352.31	401.05								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	154.95	.04	171.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
154.95	171.14	109.84	105	100.42	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
42.5	98.1	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9196

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.06	3.11	399.1	7.66	399.14	8.21	399.14	11.14	399.2

```
   14.16  399.24   15.16  399.23   16.06  399.21   16.45   399.2   16.79  399.18
   17.07  399.17   44.77     399    46.3  398.96   57.79  398.17   58.05  398.12
   58.52  398.07   59.24  398.01   59.47     398   59.81  397.95   60.63  397.83
   60.69  397.82   61.36  397.83   62.34   397.8    62.8  397.77   63.34  397.77
   63.74  397.73   73.15  396.86   74.17  396.76   74.98  396.67   80.24     396
   91.29  394.71   96.77     394  103.28   393.2  108.02  392.64  109.29  392.48
  110.44  392.34   113.4     392   129.6     390  133.01  389.51   134.1  389.41
  135.16  389.31  138.39  388.96  141.78  388.59  143.61  388.38  145.61  388.15
  146.23  388.08  146.93  388.04  146.98     388  156.92     387  192.18  386.94
  214.32  387.26  224.37  387.23  224.38  387.23  230.17  387.21  234.05  385.77
  239.97  384.81  241.03  384.18     243  383.81  247.36  387.68   256.1  387.12
  258.34  386.98  282.41   388.4  293.08  392.68  309.62  391.47  323.53  392.22
  323.58  392.18   354.2     394  361.45  395.27  365.79     396  370.25  397.12
   373.9     398  375.39  398.33  383.13     400   386.3  400.73  391.87     402
  395.39   402.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  230.17     .04  247.36    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        230.17  247.36           197.07  208.89  195.59             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      11    50.8     405

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8987

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  402.15    2.15  402.17    3.39  402.13    6.04  402.17   12.51  402.07
   13.01  402.08   14.07  402.07   15.03  402.07   16.62   402.1   16.88  402.09
    17.7  402.05   18.67     402   24.82  401.62   50.49     400   71.91  398.02
    72.1     398   72.14  397.99    82.9     396   83.83   395.8   92.09     394
  100.48  392.04  100.64     392  100.82  391.96  101.02  391.92  110.17     390
  121.03  388.29  142.19  386.02  152.75   385.4  161.75  385.92  161.76  385.92
  161.94  385.93  170.22   385.8  172.51  383.34  178.25  382.77  183.07  383.36
  185.81  386.43  193.25  386.15  202.96  385.78  222.78   385.7  249.39  385.47
  263.78  390.18   301.3     390  301.69  390.04   302.4   390.1   313.7   391.1
  324.37     392  326.83   392.6  329.22  393.19  332.48     394  335.16  394.95
  338.19     396  340.18  396.58  342.55  397.27  344.45  397.82  345.03     398
  346.35  398.38  351.77     400  352.66  400.28  356.31  401.47  357.07  401.72
  357.94     402   358.9   402.3  364.45     404  365.62   404.4  369.07  405.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  170.22     .04  185.81    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        170.22  185.81           233.38  233.77  226.61             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8753

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  392.84    3.57  392.36    4.48  392.24    6.24     392   14.25  391.04
   22.57     390   39.19  388.36   42.66     388   43.14  387.95   44.71  387.76
   45.13   387.7   53.93     387   55.07  386.91   55.91  386.89   59.98  386.86
   67.22  387.07   71.26  386.74   71.58  386.73   74.94  386.49   75.24  386.48
   79.99  386.13   80.09  386.12   81.64     386  140.52  386.79   179.2  384.55
  199.15  384.94  212.08  384.65  214.59   384.6  226.78  384.34  229.61  382.96
  231.97  382.55  232.78  382.41  236.12  381.99  237.03  382.27  237.82  384.79
  243.64  385.02  243.65  385.02   246.4  385.13   254.4  387.48   262.5  388.23
  269.36  387.48  284.51  387.86  284.57  388.25   284.6  388.25  284.74  388.27
  302.51     390  304.49  390.31  314.62     392  318.02  392.86  322.27     394
  323.63  394.41  327.41  395.54  328.32  395.82   328.9     396  329.96  396.36
  334.49     398  337.27  399.01  339.54     400  340.77  400.45  344.57     402
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  346.47   402.7     350     404   351.3  404.47  352.94  405.01  353.27  405.12

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  226.78     .04  237.82    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        226.78  237.82           178.41  174.76  168.62             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8579

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.17    3.31     400   17.74  399.07   34.62     398   35.22  397.93
   46.41  397.26   51.75  396.96   59.26   396.5   60.57  396.41   63.23  396.27
   68.83     396   75.46  394.89   76.44  394.72   79.84  394.17   80.17  394.11
   80.95     394   93.93  392.04   94.14     392   94.63  391.88   95.67  391.71
   95.96  391.67   96.13  391.66   102.2  391.37   103.3  391.28  107.14  391.06
  111.25  390.74   112.8  390.64   116.2  390.33  116.74  390.29  119.66     390
  124.86  389.68  126.23  389.59  129.14  389.43  130.57  389.33  132.66  389.17
   135.1  389.03     138  388.83  141.06  388.61  147.32  388.13  148.92     388
  153.19  387.46  172.43  385.68  186.19  383.82  200.87  383.46  218.33  383.53
  227.14  382.25  231.16  382.93  233.37  383.31  235.71  383.61  242.87  381.38
  248.28  381.13  250.03  381.37  251.19  383.67  263.28  383.69  264.68   383.7
  279.14   384.5  298.66  387.04   300.8     387  315.88     390  320.59  391.65
   321.5     392  322.64  392.54  325.53     394   328.7  395.54  329.55     396
  332.04  397.23  333.33     398  334.37  398.44  338.88     400  339.68  400.16
  340.45  400.35  347.58     402  352.32   402.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  235.71     .04  251.19    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.71  251.19           198.29  204.23  206.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8374

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  401.05     .39  401.02   14.71     400   17.51  399.78   17.87  399.76
   18.37  399.72   19.63  399.64   20.25   399.6      22  399.47   31.49  398.77
   42.12     398   43.17  397.92   43.74  397.88   48.54  397.52   49.54  397.46
   51.19  397.35   54.98  397.06   67.52   396.4   67.98  396.37    72.6  396.03
      73     396   77.65  395.72   79.49   395.6   80.67  395.52   82.29  395.41
   83.66  395.31   85.08   395.2  104.07     394  108.69  393.72  110.21  393.61
  111.59  393.51  116.39  393.15  122.53  392.72  129.15  392.19  131.43     392
  140.54  390.76  146.03     390  147.63  389.84  149.67  389.65   158.7  388.75
  166.96     388  174.92  387.31  176.26  387.21  182.29     386  189.22  384.97
  217.89   382.7  254.28  382.69  262.97  382.52  262.98  382.52   272.5  382.34
  274.84   380.5  276.51  380.31  286.75  380.32  292.45  384.62  293.85  384.83
  305.64   386.6  321.38     388  325.59  388.89  331.68     390  334.17  390.71
  336.02   391.3   338.3     392  343.97  393.91  344.22     394  345.13  394.36
  349.46     396  350.95   396.6  354.45     398  356.99  399.37  358.18     400
  359.59  400.71  360.34  401.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   272.5     .04  292.45    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         272.5  292.45            144.9  145.45  146.03             .1       .3

CROSS SECTION


RIVER: Plumtree
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REACH: Plumtree RS: 8229

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.36	5.81	394.06	6.29	394	7.37	393.95	45.41	392
69.28	390.22	72.15	390	72.18	390	72.26	389.98	72.54	389.95
73	389.89	74.69	389.72	75.45	389.65	75.92	389.61	75.99	389.6
79.77	389.37	82.3	389.25	100.97	388.39	107.53	388	110.36	387.9
110.76	387.9	112.75	387.84	132.43	386	139.68	385.1	170.44	382.68
187.75	382.12	197.62	382.13	197.63	382.13	207.39	382.14	209.28	380.1
212.63	379.79	215.85	380.15	217.64	381.75	227.71	382.65	227.84	382.66
243.37	383.19	265.96	384.67	268	384.46	288.88	388	293.09	388.12
308.33	389.98	308.55	389.98	309.46	389.99	310.08	390	315.47	391.1
319.76	391.98	319.9	392	320.02	392.04	321.07	392.37	326	393.9
326.33	394	328.6	394.86						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	207.39	.04	217.64	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
207.39	217.64	135.27	135.16	134.66	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8094

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.62	2.48	394.2	3.72	394	3.8	393.98	4.1	393.92
4.62	393.84	5.04	393.78	5.44	393.73	5.7	393.7	24.53	392.35
27.13	392.1	27.41	392.08	28.22	392	37.38	391.13	48.65	390
55.52	389.55	79.43	388.11	79.45	388.11	79.5	388.1	79.73	388.02
79.79	388	96.53	386.44	99.06	386.2	101.25	386	106.88	385.44
109.08	385.26	113.06	384.89	116.1	384.62	119.34	384.4	120.88	384.28
121.97	384.22	122.35	384.19	122.91	384.14	134.05	383.5	144.72	382.7
163.81	381.63	182.02	380.88	183.82	381.01	183.84	381.01	194.28	381.76
195.27	379.09	198.85	378.24	204.43	378.53	207.68	381.82	215.37	381.59
219.87	381.46	228.39	381.39	231.06	382.03	246.18	381.9	274.41	383.36
311.66	389.55	311.72	389.81	311.73	389.81	329.62	392	337.85	393.59
339.81	394	342.65	394.79	346.84	396	349.21	396.76	352.92	398
358.41	399.96	358.53	400	358.64	400.03	368.44	402	368.97	402.04
369.04	402.04	369.13	402.05	375.87	402.56	376.87	402.63	378.22	402.73
382.48	403.06	386.91	403.38	388.95	403.53	390.87	403.66		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	194.28	.04	207.68	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
194.28	207.68	138.21	139.81	140.01	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7954

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	390.87	1.06	390.76	5.56	390.36	8.09	390.17	9.7	390.06
12.95	389.88	15.86	389.75	20.41	389.55	21.37	389.49	22.17	389.45
26.06	389.27	27.8	389.18	29.65	389.1	31.21	389.02	32.58	388.93
33.19	388.89	40.18	388.65	41.65	388.54	44.29	388.45	47.14	388.32
47.67	388.28	49.22	388.2	50.93	388.11	52.62	388	54.06	387.89
58.14	387.52	60.02	387.34	70.48	386.32	73.92	386	75.83	385.87
81.99	385.49	86.05	385.25	88.16	385.06	94.21	384.69	95.33	384.57
98.59	384.23	99.42	384.17	100.92	384	114.44	382.88	125.39	382
130.61	381.95	156.45	380.05	188.73	379.73	199.32	380.23	210.56	380.77
212	378.9	214.38	377.79	218.13	379.54	221.11	380.65	229.58	380.68
231.23	380.69	249.42	380.31	281.8	380.49	295.4	380	299.39	381.16

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  302.17     382  305.31  382.93  310.71  384.55  316.22     386  323.56  387.01
  330.85     388  342.34   389.5  345.84     390  347.98   390.9  350.48     392
  352.14  392.75  355.01     394  357.39  394.99  359.91     396  362.57  396.94
  365.15  397.64  366.49     398  375.99  398.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  210.56     .04  221.11    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        210.56  221.11           155.28  153.64  152.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7800

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  389.23     6.4  388.77   18.95     388   32.05  387.12   34.38  386.96
   40.95  386.52   41.74  386.47   42.88  386.38   48.62     386   49.93  385.92
   50.74  385.86   62.21   385.1   65.97  384.84    73.9  384.32   75.81   384.2
   77.92  384.08   78.06  384.07   79.37     384   79.61  383.95   79.79  383.92
    79.9  383.91    81.2  383.76   81.59  383.72   81.85  383.71   82.72  383.74
   88.11  383.68   89.08  383.64   89.68  383.58   90.64  383.53   91.54  383.48
   92.48  383.38   93.55  383.29   96.76     383   98.06  382.88   99.04  382.78
  102.88  382.37  106.07     382  129.44  380.05  152.75  378.79  172.94  379.22
  186.27  379.75  187.83  378.84  191.51  378.79  198.74  378.73     200  379.32
  200.83   379.7  211.69     379  223.63  379.27  230.99   379.1  240.48  378.88
  259.49  379.02  278.05  378.97  305.83  379.75  307.52     380  314.08   381.6
  315.71     382  316.56  382.21  318.83  382.81  323.87     384  331.19  385.58
  333.53     386   340.6  386.91  350.42     388  352.19  388.23  353.07  388.36
  356.29  388.87  360.39  389.49  361.84  389.72  363.36     390  364.77  390.43
  366.25  390.85  370.11     392  372.25  392.58

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.27     .04  200.83    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.27  200.83           252.37  252.82  252.55             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7548

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.07     .78     384    5.11  383.66    7.63   383.5   11.97  383.17
   14.64  382.99   17.76  382.76   24.91  382.21   27.52     382   28.85  381.83
   29.51  381.79   32.65  381.46   35.07  381.21   46.63     380   59.52  379.12
   61.36     379   65.17  378.74   75.34  378.13   77.34  378.05   77.62     378
   83.55  378.07   85.43  378.08   88.35  378.07   95.64  378.09  101.54  378.13
  108.95  378.07  110.55  378.08  119.01  378.06  138.28  378.06  168.39  378.45
  198.66  378.25  217.53  377.85  219.53  377.83  219.55  377.83  230.43  377.75
  232.68  376.67  235.51  375.57  238.58  376.37  240.21  377.92  249.56   377.9
  258.68  377.89  288.89  377.64  323.87  376.92   330.2  377.07  336.47     378
  340.56  378.61  343.65  379.04  345.35  379.25  349.52  379.62  352.72  379.89
  353.04  379.92  353.25     380  353.89  380.15   356.3  380.75  360.75     382
  369.15     384  377.97  385.33  382.29     386  383.74  386.27  393.23     388
  398.11     389  402.86     390  406.24  390.27  406.63  390.26  409.53     390
  411.75  389.85   413.2  389.77   418.1  389.46  420.07  389.37  423.04  389.17
  425.75  388.96   431.8   389.4  440.42     390   442.9  390.41  445.97  390.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  230.43     .04  240.21    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        230.43  240.21           174.12  180.41  186.79             .1       .3

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 7367

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.88	17.18	384.04	17.79	384	19.31	383.69	27.57	382
33.56	381.11	40.22	380	72.92	378	75.63	377.86	83.54	377.49
84.36	377.49	86.2	377.54	86.99	377.54	87.28	377.52	88.37	377.57
88.81	377.59	98.7	377.77	99.18	377.78	99.84	377.77	153.1	379.18
184.66	379.38	209.09	379.76	209.11	379.76	216.46	379.87	218.28	379.16
220.46	378.71	224.14	378.3	227.18	379.5	239.26	379.44	239.27	379.44
256.12	379.35	283.76	378.85	301.95	376	306.84	375.99	309.51	375.94
311.37	375.92	312.47	375.93	313.98	375.94	315.54	376	317.31	376.05
328.94	376.26	339.82	376.48	386.56	377.48	387.24	377.47	389.22	377.48
389.83	377.49	393.84	377.67	396.67	377.79	398	377.85	399.4	377.89
400.73	377.95	403.02	378	405.65	378.1	407.78	378.19	409.29	378.26
410.92	378.34	413.44	378.46	417.48	378.69	420.02	378.83	428.31	379.29
429.6	379.36	436.31	379.72	436.88	379.75	441.68	380	449.79	380.68
452.35	380.9	458.41	381.46	460.97	381.69	464.19	382	470.57	382.96
477.61	384	480.68	384.57	488.87	386	495.27	386.99	498.55	387.34

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	216.46	.04	227.18	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
216.46	227.18	143.37	150.84	157.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7216

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.75	1.08	385.65	5.95	385.32	10.54	384.89	18.99	384.19
19.48	384.13	19.51	384.13	19.72	384.03	19.77	384.03	19.83	384
21.34	383.6	24.22	382.82	25.18	382.55	27.46	382	33.57	381.07
41.34	379.98	60.13	379	65.81	378.72	75.73	378.27	77.55	378.18
79.67	378.07	80.08	378.07	80.17	378.06	81.18	378	81.5	377.95
81.94	377.89	82.7	377.88	134.09	376.01	134.34	376	135.9	375.99
142.56	375.98	148.85	376	148.97	376	159.54	375.75	186.07	376.5
205.76	375.8	205.79	375.8	221.2	375.26	236.22	376.17	236.23	376.17
243.36	376.61	267.12	376.15	298.57	377.1	324.96	378	344.89	379.72
346.99	379.9	348.24	380	355.59	380.52	358.24	380.72	369.12	381.55
372.54	381.8	375.03	382	377.33	382.49	384.79	384	385.68	384.2
393.83	386	394.81	386.17	399.71	387.05	405.49	388	406.42	388.18
407.5	388.41	413.63	389.1	417.54	389.6	418.61	389.74	420.77	390
421.3	390.07	421.95	390.14	429.79	391.08	433.06	391.43	434.12	391.56
434.45	391.61	438.52	392	445.08	392.32	449.48	392.54	451.09	392.66

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.07	.04	243.36	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.07	243.36	190.28	186.42	181.46	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
377.1	439.5	390	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7030

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.29	2.41	387	10.05	386	29.45	384.45	32.78	384.15

33.33	384	36.52	383.46	40.31	382.87	43.31	382.38	46.06	382
46.12	381.98	48.59	381.84	49.64	381.82	49.97	381.8	50.4	381.79
50.62	381.77	71.01	380.53	81.91	380	92.52	379.05	103.93	378
123.79	376.72	134.74	376.11	135.07	376.05	135.57	376	135.6	375.99
137.36	375.81	139.35	375.62	140.29	375.67	145.45	375.59	151.15	375.29
153.13	375.29	164.88	375.94	165.28	375.96	165.81	376	175.82	375.48
205.64	375.09	233.21	375.65	248.05	375.46	259.75	375.31	261.56	373.84
262.29	373.43	263.48	373.62	268.09	375.54	278.5	375.62	279.83	375.63
309.7	376.93	312.89	376.93	319.01	378	322.75	379.67	328.88	379.92
332.16	380	333.98	380.26	345.53	382	358.26	384	368.51	385.52
371.9	386	379.53	387.21	385.4	388	395.57	389.56	398	389.92
398.64	390	402.14	390.27	406.61	390.59	410.26	390.83	412.74	390.96
415.65	391.11	416.49	391.16	419.22	391.29	423.04	391.64	423.34	391.66
427.09	392	428.37	392.13	432.56	392.47	446.6	393.09		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	259.75	.04	268.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
259.75	268.09	140.13	137.19	133.92	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
372.8	404.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6893

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.2	2.38	382.99	8.39	382.4	12.65	382	20.07	381.43
21.04	381.32	23.89	381.07	32.28	380	33.24	379.94	36.89	379.63
54.28	378.25	56.67	378	75.57	376.96	78.59	376.8	93.69	376
94.91	375.96	96.44	375.86	117.75	374.81	136.62	374	152.27	373.6
154.13	372.23	157.36	371.8	159.62	372.29	160.73	373.73	187.35	373.86
202.43	373.44	213.2	373.14	214.26	371.39	217.55	370.68	220.85	371.53
222.2	372.36	232.55	373.36	240.97	374.18	259.97	375.25	279.8	378.38
290.19	380	292.23	380.3	302.91	382	311	382.83	315.48	383.17
321.02	383.61	322.67	383.75	325.93	384	327.14	384.17	327.77	384.24
330.51	384.6	331.06	384.66	331.73	384.74	332.6	384.85	333.79	385.01
335.83	385.3	339.56	385.84	340.65	386	353.87	389.13	355.81	389.6
357.43	390	357.61	390.01	361.03	390.33	362.39	390.43	362.61	390.44
365.01	390.49	366.06	390.54	368.05	390.54	368.79	390.56	380.19	390.59
388.25	390.86								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.2	.04	232.55	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.2	232.55	124.46	126.53	128.02	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
333.6	364.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6766

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.56	7.75	380.34	9.62	380.18	11.59	380.1	27.69	379.6
34.11	379.36	42.51	378.88	44.96	378.81	50.68	378.9	55.82	378.75
59.91	378.59	69.06	378.34	72.96	378.1	76.53	377.98	77.17	377.98
78.44	377.94	85.15	377.54	110.99	376.09	111.42	376	115.69	375.87
158.02	374.36	160.91	374	186.61	372.66	212.26	373.01	237.02	373.1
242.58	372.73	249.33	372.28	253.11	370.17	254.8	369.76	259.27	370.49
262.36	373.11	274.27	374.24	274.29	374.25	278.85	374.68	293.57	375.12
310.54	376.12	337.65	378	341.5	378.38	344.84	378.75	345.88	378.88
348.32	378.95	351.5	379.16	353.85	379.26	354.2	379.31	358.69	379.46

```
  365.18  379.62  366.28  379.73  367.47     380  369.55   380.4  370.86  380.58
  373.19  381.02  375.37  381.31  379.99     382  390.01     384   392.8  384.16
   404.5  384.66  418.06  384.49  421.86   384.5  423.36  384.56  430.23  384.62
  434.86  384.68  447.58  385.29  449.06   385.3  453.71  385.19  463.39  384.68
  463.96  384.68  468.82  384.87  472.42  384.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  237.02     .04  262.36    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        237.02  262.36           103.31  103.53  104.46             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   367.4   402.8     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6663

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  387.81    5.71  387.58   42.61  386.42   45.32  386.36   48.81  386.32
   50.39  386.29   52.99  386.11   54.86     386   63.52     384    72.4     382
   77.53  381.09   78.45  381.02   81.39  381.16   82.73  381.16   83.84  381.06
   85.14  381.03   90.04   380.7   91.84  380.48   94.76     380  107.44  379.41
  109.18  379.29  112.44  379.13  115.99  378.92  130.42     378  130.89  377.95
  160.38  376.65  180.56  376.17  184.97  375.98  189.81  375.85  195.23  375.67
  199.49  375.58  206.72  375.37  221.58  374.58  234.91     374  259.85  373.17
  294.97  372.71  311.02  372.56  311.04  372.56  319.15  372.49  321.59  371.64
  322.41  371.16  323.12   369.4  326.04  369.26  336.33  370.36  339.84  373.35
  341.19  373.46  341.21  373.46  355.51  374.57  385.65  374.57  391.75     376
  435.14  377.35  436.73  377.48  438.03   377.5  441.59  377.71  445.02     378
  461.23     380  462.22  380.21  465.24  380.76  470.16  381.69  472.06     382
  479.53  383.54  481.93     384  486.28  384.27  488.32  384.35  505.54  384.31
  515.18  384.49  518.45  384.46   533.6  385.11  535.47  385.12  546.46  384.34
  548.83   384.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  319.15     .04  339.84    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        319.15  339.84            90.58   94.53   97.72             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    49.7    87.5     390   451.6   492.3     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6568

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  387.88   11.84  387.56   41.49  386.42    44.7  386.32   47.75  386.21
    48.2   386.2   51.49  386.19   52.85  386.15   53.93  386.14   56.03  386.06
   57.13     386    62.1  385.38   72.23  384.41   73.61  384.08      74     384
   78.37  383.37   81.15  382.86   83.41  382.52   85.95     382   87.39  381.89
   89.26  381.77  106.91  380.23  109.52  380.12  112.81     380  123.86  379.46
  127.28  379.12  128.69  379.02   131.4  378.74  133.26   378.6  138.52     378
  144.95  377.67  154.93   377.2  167.84  376.57  179.91     376  190.81  375.63
  206.03  375.07  215.11  374.75  231.43  374.02  231.55     374  251.99  373.42
  286.56  372.07  303.48     372   303.5     372  307.17  371.99  309.55  369.54
  314.39  368.65  318.89   369.1  320.63   372.7  333.89  373.01   335.3  373.05
  354.94  374.07     388  376.19  406.97     378  432.51     380  436.02  380.51
  440.79  381.03  449.38     382  453.12  382.55  464.72  383.92  465.61     384
  472.99  385.68  474.22     386  482.07  387.25  486.94     388  503.32     390
  506.03  390.12  516.08  390.61  558.49  391.41  562.74  391.48  574.89  391.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
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```
       0    .075  307.17     .04  320.63    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        307.17  320.63           112.95  114.27  115.74             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    56.9      70     395     480   528.4     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6454

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.74    7.58  382.41   11.61  382.36   18.35  382.85   20.37  382.77
   21.37  382.79   29.92  382.63   32.76   382.6   39.52  382.39   47.69     382
   53.79  381.37   55.59  381.15   62.67     380   71.51  378.91   77.75     378
   80.09  377.84   81.89  377.87   84.21     378   85.66  378.04   91.88  378.33
   93.96  378.47  103.28  378.95  112.28  379.59  117.21  379.85  119.53     380
  122.79  380.14  126.31  380.18  133.22     380  134.81  379.84  137.81  379.45
  141.48  378.79  145.53     378  155.89     376  166.96  373.47  173.88  373.47
  191.09  372.71   200.3  371.97   201.3  371.89  212.37  370.12  213.27  368.43
  215.67   368.3  218.52  368.67  224.12  371.79  230.68  372.35  245.49   373.6
  269.36  373.99  286.75  373.99  309.85     374  325.09  374.82  342.86  375.85
  347.28  376.79   353.2     378   358.5  378.88  365.42  379.84  366.88     380
   374.5  381.38  377.36     382  383.44  382.65  394.15     384  397.08  384.34
   402.2  384.86  404.24  385.01  407.53   385.3  408.74  385.37  414.73   385.6
  419.68  385.94   428.4  386.28   432.3  386.26  436.12  386.41  452.71  387.66
  457.68     388   470.4  388.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   201.3     .04  224.12    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        201.3  224.12           102.69  103.78  104.74             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   120.4   125.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6350

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.25    2.84  383.98    4.85  383.88   29.21  382.05   29.42     382
   31.52  381.83   32.17   381.8   32.46  381.78   34.04  381.73   35.06  381.64
   53.47   380.4   61.23     380   61.52  379.95    62.6  379.83   66.18  379.72
   67.82  379.63   68.74  379.59  124.99     378  139.11  377.29  159.11  376.32
  161.58  376.22  169.81     376  175.65  375.83  176.25  375.83     201  374.61
  220.13  373.39  226.47  371.43  230.05  370.32  235.85   369.8  238.08  367.36
  241.57  366.97   246.9  368.37  249.25  372.63  256.57  374.75  266.03   377.5
  266.59     378  329.45     378  332.13  377.82  334.24  377.69  335.82  377.59
  339.75  377.35  347.23  377.86  349.56     378  359.53  377.16  360.29  377.08
  378.66     378  382.15  378.35  383.71  378.55  386.87  378.91  388.05  379.05
   394.9     380  395.88  380.18   400.2  380.85  405.44  381.69  407.44     382
  409.21  382.33  411.05   382.5  417.68  383.44  420.21  383.65  423.51  383.96
     426  384.23  427.13   384.2  428.56   384.3  433.67  384.73  437.93  385.11
  441.27  385.38  449.14  386.13  468.97     388

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  220.13     .04  249.25    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        220.13  249.25            52.33   53.78   55.24             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   264.6   271.9     390          F
   325.6   345.5     390          F
```

Blocked Obstructions num= 1

Sta L	Sta R	Elev
271.9	325.6	390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6296

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.85	5.73	386.49	14.33	386	18.53	385.51	23.71	384.86
25.79	384.56	29.31	384	30.39	383.8	37.57	382.43	39.51	382.02
41.76	381.69	54.85	380	70.55	379.5	94.75	378.51	95.08	378.49
95.41	378.49	98.12	378.36	99.34	378.31	103.26	378.2	106.66	378.14
108.29	378.08	109.53	378.06	141.16	376.68	172.07	375.5	191.67	374.94
202.55	371.87	209.11	370.03	214.77	369.87	215.93	367.68	217.55	367.41
219.25	367.49	221.17	369	223.1	368.24	224.71	368.4	227.95	371.85
232.63	373.42	243.36	377.02	259.81	378.9	289.8	379.01	303.36	379.05
308.59	379.33	337.18	380	341.87	380.42	350.42	381.43	353.73	381.8
355.27	382	358.1	382.65	364.11	384	366.25	384.53	371.48	385.78
372.48	386	389.73	388	393.2	388.71	393.82	388.77	394.89	388.96
396.31	389.18	398.15	389.31	401.07	389.7	406.01	389.86	406.78	389.82
409.23	389.97	409.46	390	423.29	390.45	424.72	390.55	426.95	390.71
438.44	391.5	444.21	391.79	445.96	392	456.32	394	459.74	394.71
466.2	396	479.75	398						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	214.77	.04	227.95	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
214.77	227.95	98.47	99.02	99.58	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	183.5	377.1	F
269.7	479.75	377.1	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
378.4	432.4	395

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 6250

INPUT
Description: Hearthstone Road
Distance from Upstream XS = 41
Deck/Roadway Width = 30
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
109.53	378.06		126.2	378.165		148.4	377.583	
171.8	377.249		194.8	377.026		219.5	377.097	
242.2	377.664		267.9	378.981		291.3	380.656	
311.7	383.135		336.6	385.512		479.75	398	

Upstream Bridge Cross Section Data
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.85	5.73	386.49	14.33	386	18.53	385.51	23.71	384.86
25.79	384.56	29.31	384	30.39	383.8	37.57	382.43	39.51	382.02
41.76	381.69	54.85	380	70.55	379.5	94.75	378.51	95.08	378.49
95.41	378.49	98.12	378.36	99.34	378.31	103.26	378.2	106.66	378.14
108.29	378.08	109.53	378.06	141.16	376.68	172.07	375.5	191.67	374.94
202.55	371.87	209.11	370.03	214.77	369.87	215.93	367.68	217.55	367.41
219.25	367.49	221.17	369	223.1	368.24	224.71	368.4	227.95	371.85
232.63	373.42	243.36	377.02	259.81	378.9	289.8	379.01	303.36	379.05
308.59	379.33	337.18	380	341.87	380.42	350.42	381.43	353.73	381.8
355.27	382	358.1	382.65	364.11	384	366.25	384.53	371.48	385.78
372.48	386	389.73	388	393.2	388.71	393.82	388.77	394.89	388.96
396.31	389.18	398.15	389.31	401.07	389.7	406.01	389.86	406.78	389.82
409.23	389.97	409.46	390	423.29	390.45	424.72	390.55	426.95	390.71

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  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        214.77  227.95             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

Downstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    93.6     378             109 378.165           131.9 377.583
   155.7 377.249           179.1 377.026           204.2 377.097
   227.3 377.664           253.6 378.981           277.3 380.656
   306.1 383.135           331.6 385.512          338.94     386

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.5    2.88  381.26     8.6  380.81   10.21   380.8   18.26  381.42
   23.64  381.72   28.86     382   31.26  382.04   31.91  382.04   38.99     382
   43.19   381.9    43.7  381.88   47.28  381.77   47.53  381.75   49.17   381.7
   49.49  381.68    51.7  381.59   53.73  381.49   76.26  380.56   76.87  380.53
   77.82  380.46   79.53  380.32   83.18     380   86.26  379.56   88.68  379.19
   90.12  378.97   98.61     378  127.05   376.5  131.06   376.5  161.92   376.1
  189.14  374.65  197.54  369.94  197.55  369.93  203.42  366.64  221.43  366.39
  225.24  370.02  227.55  372.22  227.56  372.23  229.54   374.1  255.33   377.5
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        197.54  225.24             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5     373       F
   229.3  443.14     373       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               24.8   62.23     .013     .013        0                  .5                1
Upstream   Elevation =  367.33
           Centerline Station =  217
Downstream Elevation =  367.76
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           Centerline Station =  210

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               24.8   62.41     .013     .013        0                  .5                1
Upstream   Elevation =  367.28
           Centerline Station =  223
Downstream Elevation =  366.19
           Centerline Station =  215

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        101.08    Culv Full Len (ft)         26.10
  # Barrels                      1    Culv Vel US (ft/s)          8.04
  Q Barrel (cfs)            101.08    Culv Vel DS (ft/s)          9.13
  E.G. US. (ft)             373.14    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             373.02    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              371.11    Culv Frctn Ls (ft)          0.13
  W.S. DS (ft)              371.05    Culv Exit Loss (ft)         1.24
  Delta EG (ft)               2.03    Culv Entr Loss (ft)         0.50
  Delta WS (ft)               1.96    Q Weir (cfs)
  E.G. IC (ft)              372.60    Weir Sta Lft (ft)
  E.G. OC (ft)              373.15    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)
  Culv WS Outlet (ft)       371.05    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         3.05    Min El Weir Flow (ft)     377.04


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        167.06    Culv Full Len (ft)         62.23
  # Barrels                      1    Culv Vel US (ft/s)         13.29
  Q Barrel (cfs)            167.06    Culv Vel DS (ft/s)         13.29
  E.G. US. (ft)             376.91    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             376.87    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              372.04    Culv Frctn Ls (ft)          0.84
  W.S. DS (ft)              371.95    Culv Exit Loss (ft)         2.65
  Delta EG (ft)               4.86    Culv Entr Loss (ft)         1.37
  Delta WS (ft)               4.92    Q Weir (cfs)
  E.G. IC (ft)              377.06    Weir Sta Lft (ft)
  E.G. OC (ft)              376.91    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)
  Culv WS Outlet (ft)       371.76    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         3.71    Min El Weir Flow (ft)     377.04


Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note:    The culvert inlet is submerged and the culvert flows full over part or all of its length.
Therefore, the culvert inlet
         equations are not valid and the supercritical result has been discarded.  The outlet answer
will be used.

CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        162.80    Culv Full Len (ft)         62.23
  # Barrels                      1    Culv Vel US (ft/s)         12.96
  Q Barrel (cfs)            162.80    Culv Vel DS (ft/s)         12.96
  E.G. US. (ft)             378.57    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             378.48    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              374.10    Culv Frctn Ls (ft)          0.80
  W.S. DS (ft)              373.86    Culv Exit Loss (ft)         2.36
  Delta EG (ft)               4.47    Culv Entr Loss (ft)         1.30
  Delta WS (ft)               4.62    Q Weir (cfs)              446.27
  E.G. IC (ft)              376.70    Weir Sta Lft (ft)          93.14
  E.G. OC (ft)              378.57    Weir Sta Rgt (ft)         256.98
  Culvert Control           Outlet    Weir Submerg                0.00
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)         1.55
  Culv WS Outlet (ft)       371.76    Weir Avg Depth (ft)         0.98
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)    160.62
  Culv Crt Depth (ft)         3.69    Min El Weir Flow (ft)     377.04
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CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	151.96	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.09
Q Barrel (cfs)	151.96	Culv Vel DS (ft/s)	12.09
E.G. US. (ft)	379.41	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.18	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	375.83	Culv Frctn Ls (ft)	0.70
W.S. DS (ft)	375.30	Culv Exit Loss (ft)	1.74
Delta EG (ft)	3.58	Culv Entr Loss (ft)	1.14
Delta WS (ft)	3.88	Q Weir (cfs)	1086.91
E.G. IC (ft)	375.84	Weir Sta Lft (ft)	72.85
E.G. OC (ft)	379.41	Weir Sta Rgt (ft)	273.83
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.38
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.55
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	312.07
Culv Crt Depth (ft)	3.61	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	146.76	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.68
Q Barrel (cfs)	146.76	Culv Vel DS (ft/s)	11.68
E.G. US. (ft)	379.75	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.46	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.60	Culv Frctn Ls (ft)	0.65
W.S. DS (ft)	375.92	Culv Exit Loss (ft)	1.44
Delta EG (ft)	3.15	Culv Entr Loss (ft)	1.06
Delta WS (ft)	3.54	Q Weir (cfs)	1442.30
E.G. IC (ft)	375.45	Weir Sta Lft (ft)	62.46
E.G. OC (ft)	379.75	Weir Sta Rgt (ft)	278.75
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.73
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.78
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	385.41
Culv Crt Depth (ft)	3.57	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	144.18	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.47
Q Barrel (cfs)	144.18	Culv Vel DS (ft/s)	11.47
E.G. US. (ft)	380.05	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.71	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	377.14	Culv Frctn Ls (ft)	0.63
W.S. DS (ft)	376.34	Culv Exit Loss (ft)	1.24
Delta EG (ft)	2.91	Culv Entr Loss (ft)	1.02
Delta WS (ft)	3.37	Q Weir (cfs)	1713.14
E.G. IC (ft)	375.26	Weir Sta Lft (ft)	54.92
E.G. OC (ft)	380.03	Weir Sta Rgt (ft)	282.10
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.97
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.93
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	438.64
Culv Crt Depth (ft)	3.55	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	107.92	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	8.59
Q Barrel (cfs)	107.92	Culv Vel DS (ft/s)	8.59
E.G. US. (ft)	373.14	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	373.02	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	371.11	Culv Frctn Ls (ft)	0.35
W.S. DS (ft)	371.05	Culv Exit Loss (ft)	1.09
Delta EG (ft)	2.03	Culv Entr Loss (ft)	0.57
Delta WS (ft)	1.96	Q Weir (cfs)	
E.G. IC (ft)	372.86	Weir Sta Lft (ft)	
E.G. OC (ft)	373.13	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.14	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	166.94	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	13.28
Q Barrel (cfs)	166.94	Culv Vel DS (ft/s)	13.28
E.G. US. (ft)	376.91	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	376.87	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	372.04	Culv Frctn Ls (ft)	0.84
W.S. DS (ft)	371.95	Culv Exit Loss (ft)	2.65
Delta EG (ft)	4.86	Culv Entr Loss (ft)	1.37
Delta WS (ft)	4.92	Q Weir (cfs)	
E.G. IC (ft)	376.95	Weir Sta Lft (ft)	
E.G. OC (ft)	376.90	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	377.04

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	162.93	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.97
Q Barrel (cfs)	162.93	Culv Vel DS (ft/s)	12.97
E.G. US. (ft)	378.57	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.48	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	374.10	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	373.86	Culv Exit Loss (ft)	2.36
Delta EG (ft)	4.47	Culv Entr Loss (ft)	1.31
Delta WS (ft)	4.62	Q Weir (cfs)	446.27
E.G. IC (ft)	376.62	Weir Sta Lft (ft)	93.14
E.G. OC (ft)	378.58	Weir Sta Rgt (ft)	256.98
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	1.55
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	0.98
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	160.62
Culv Crt Depth (ft)	3.69	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	152.14	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.11
Q Barrel (cfs)	152.14	Culv Vel DS (ft/s)	12.11
E.G. US. (ft)	379.41	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.18	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	375.83	Culv Frctn Ls (ft)	0.70
W.S. DS (ft)	375.30	Culv Exit Loss (ft)	1.75
Delta EG (ft)	3.58	Culv Entr Loss (ft)	1.14
Delta WS (ft)	3.88	Q Weir (cfs)	1086.91
E.G. IC (ft)	375.76	Weir Sta Lft (ft)	72.85
E.G. OC (ft)	379.42	Weir Sta Rgt (ft)	273.83
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.38
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.55
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	312.07
Culv Crt Depth (ft)	3.61	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	146.95	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.69
Q Barrel (cfs)	146.95	Culv Vel DS (ft/s)	11.69
E.G. US. (ft)	379.75	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.46	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.60	Culv Frctn Ls (ft)	0.65
W.S. DS (ft)	375.92	Culv Exit Loss (ft)	1.44
Delta EG (ft)	3.15	Culv Entr Loss (ft)	1.06
Delta WS (ft)	3.54	Q Weir (cfs)	1442.30

E.G. IC (ft)	375.37	Weir Sta Lft (ft)	62.46
E.G. OC (ft)	379.76	Weir Sta Rgt (ft)	278.75
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.73
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.78
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	385.41
Culv Crt Depth (ft)	3.57	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	144.68	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.51
Q Barrel (cfs)	144.68	Culv Vel DS (ft/s)	11.51
E.G. US. (ft)	380.05	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.71	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	377.14	Culv Frctn Ls (ft)	0.63
W.S. DS (ft)	376.34	Culv Exit Loss (ft)	1.26
Delta EG (ft)	2.91	Culv Entr Loss (ft)	1.03
Delta WS (ft)	3.37	Q Weir (cfs)	1713.14
E.G. IC (ft)	375.20	Weir Sta Lft (ft)	54.92
E.G. OC (ft)	380.06	Weir Sta Rgt (ft)	282.10
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.97
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.93
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	438.64
Culv Crt Depth (ft)	3.55	Min El Weir Flow (ft)	377.04

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6197

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39
225.24	370.02	227.55	372.22	227.56	372.23	229.54	374.1	255.33	377.5
286.19	380.21	290.61	381.26	291.85	381.66	302.93	382	306.38	382.34
307.8	382.5	315.82	383.3	321.82	384	332.19	385.15	338.94	386
354.08	387.58	358.3	388	361.22	388.32	364.98	388.73	371.17	389.42
376.5	390	377.44	390.09	382.23	390.53	383.73	390.65	389.09	391.12
395.34	391.57	396	391.63	401.1	392	405.04	392.54	406.26	392.72
413.74	394	418.95	394.57	420.55	394.73	421.65	394.84	427.34	395.45
432.93	395.77	433.17	395.8	434.1	395.89	438.66	396.46	441.16	396.79
443.14	397.11								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	197.54	.04	225.24	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.54	225.24	75.78	74.81	73.83	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	180.5	373	F
229.3	443.14	373	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
23.7	63.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6122

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.69	8.11	379.53	9.53	379.45	17.27	379.23	20.32	379.02
22.13	378.95	24.3	378.81	31.57	378.41	34.72	378.26	38.27	378.14
47.27	377.96	49.2	377.94	52.81	377.79	56.11	377.88	60.11	377.91
62.59	377.87	64.37	377.81	65.09	377.76	66.54	377.7	67.14	377.65
68.62	377.58	71.62	377.27	75.62	376.99	79.3	376.57	81.7	376.35
84.46	376	105.56	374.69	108.26	374.67	121.47	375.38	123.91	375.3
125.19	375.41	127.48	375.55	129.74	375.66	131.98	375.57	134.89	375.74
137.16	375.81	137.87	375.78	140.09	375.81	142.39	375.77	145.17	375.64
148	375.41	151.1	375.05	154.75	374.52	159.06	373.88	159.11	374.24
175.4	373.46	185.87	373.46	213.06	372.27	225.58	370.42	231.74	369.51
232.66	367.04	234.89	366.62	240.64	367.46	244.1	370.65	253.02	370.54
255.64	371.33	278.66	378.25	302.77	378.97	352.21	380	359.2	381.14
364.26	382	367.65	382.7	370.16	383.19	373.86	384	378.45	385.21
381.62	386	383.59	386.52	388.85	388	390.89	388.46		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	225.58	.04	244.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
225.58	244.1	98.18	94.21	91.92	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
119.8	162.9	385	F
185.6	201.5	385	F
272.4	384.9	385	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
162.9	185.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6028

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.8	19.58	382.41	21.78	382.31	25.29	382	28.82	381.21
33.73	380	38.53	378.96	47.92	377.02	53.08	376	53.61	375.96
54.06	375.94	63.8	375.32	75.35	374.08	75.77	374	75.87	374
79.55	373.5	79.83	373.47	80.44	373.45	80.74	373.5	108.3	372.93
132.26	372.05	132.53	372	152.08	371	183.23	368.87	204.31	368.6
204.32	368.6	205.1	368.59	214.72	368.32	216.43	366.61	219.36	365.53
223.23	366.03	225.53	367.69	234.47	368.82	242.06	369.78	266.05	372.16
283.38	373.66	295.75	374.49	302.61	375.35	306.21	375.74	307.44	375.9
308.45	376	309.16	376.16	309.43	376.21	312.19	376.42	326.29	377.09
336.37	377.85	338.16	378	343.77	379.27	346.84	380	352.57	381.65
353.72	382	360.42	384	366.91	386	373.75	388	374.25	388.15
375.39	388.44	376.82	388.77	382.2	390	385.62	390.91	387.5	391.38
390.05	392	391.18	392.24	393.51	392.7	394.79	392.94	395.7	393.09
396.68	393.28	398.05	393.5	400.71	394	401.05	394.02	401.31	394.02
401.89	394.05	402.27	394.05	404.67	394.17				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	214.72	.04	234.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
214.72	234.47	100.93	101.91	101.19	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
61	113.9	390	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
19.7	61	390	393.1	404.67	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5926

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.59	5.1	382	9.3	381.27	15.23	380.26	16.79	380
17.4	379.93	17.99	379.89	25.61	379.19	28.72	378.92	41.87	378.06
42.14	378.04	42.69	378.01	42.8	378	47.15	377.66	50.35	377.44
52.95	377.29	54.78	377.18	55.85	377.13	57.24	377.07	58.56	376.99
61.22	376.9	62.6	376.8	64.49	376.66	65.4	376.61	68.93	376.32
69.43	376.28	72.62	376	79.17	375.23	79.85	375.13	81.75	374.86
86.54	374.13	86.9	374.08	87.35	374	97.43	372.6	101.22	372
101.71	371.98	102.49	371.97	103.31	371.98	103.65	372	103.7	371.95
108.23	371.29	120.13	371.02	124.98	371.02	148.13	370.3	170.6	369.08
174.12	367.61	175.06	367.22	180.45	367.62	186.44	367.24	187.3	365.38
189.41	365.46	192.74	365.89	197.28	368.62	204.41	369.15	222.38	370.47
248.76	371.19	255	372	274.29	373.9	275.14	374	287.23	376
292.49	377.34	295.11	378	299.87	379.19	303.25	380	311.49	382
318.69	383.66	320.08	384	327.45	385.84	328.11	386	335.19	387.48
337.59	388	343.86	388.94	350.88	390	354.59	390.61	356.8	390.96

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.44	.04	197.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.44	197.28	102.11	102.54	102.93	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
60.6	75.4	385	F
103.4	163.4	385	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
75.4	103.4	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5824

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.17	1.53	379.09	3.56	378.96	5.73	378.8	8.65	378.57
10.86	378.4	11.67	378.34	15.69	378	20.08	377.29	27.83	376
29.81	375.82	31.38	375.67	39.63	374.92	42.87	374.63	44.59	374.5
49.91	374	62.23	371.55	92.34	370.63	109.26	369.2	110.94	369.06
120.72	365.29	124.37	365.08	126.51	365.24	130.92	367.14	139.51	368.75
157.36	372.1	180.06	370.47	190.05	370.47	216.33	372	219.38	372.57
223.55	373.34	225.27	373.66	227.19	374	231.58	375.26	234.22	376
234.79	376.18	240.58	378	243.82	379.15	246.06	380	248.42	380.86
251.63	382	257.95	383.86	258.4	384	260.44	384.5	266.77	386
268.22	386.33	275.61	388	278.96	388.7	285.3	390	291.48	391.05
292.67	391.25								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	109.26	.04	139.51	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
109.26	139.51	75.62	79.21	82.75	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5745

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380	15.5	378.48	20.71	378	30.8	377.15	37.79	376.64
40.3	376.44	46.11	376.04	46.38	376	47.1	375.96	69.11	374
77.1	373.47	103.89	370.86	131.17	369.6	133.12	368.74	140.37	365.55
143.61	365	144.73	363.71	148.48	363.03	150.47	363.33	159.4	368.15
163.52	368.56	176.34	369.82	186.31	370.3	194.64	373.03	209.12	373.26
225.27	372.55	225.6	372.55	225.92	372.54	226.18	372.55	226.7	372.55
233.5	372.96	233.9	372.98	234.19	373	234.39	373	234.53	373.01
234.67	373.01	234.83	373.02	242.93	373.56	243.64	373.58	246.98	373.68
250.97	373.8	257.66	374	263.52	375.65	264.76	376	265.45	376.19

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  271.67     378     272  378.09  278.61     380  283.25  381.15  286.54     382
  296.07  383.94  296.19  383.96  296.34     384  296.53  384.04  296.57  384.04
  296.61  384.05  296.75  384.07  297.08  384.12   302.2  384.91  306.31  385.41
  307.97  385.64  308.53  385.72  311.26     386  312.97  386.11  313.27  386.13
   317.7  386.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  131.17     .04   159.4    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        131.17   159.4            34.07   34.02   34.04             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   170.3   207.9     385       F
   225.8   247.8     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   207.9   225.8     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5711

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.06  162.62            96.24   96.18   98.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5650

INPUT
Description: Brookemede Road
Distance from Upstream XS =      37
Deck/Roadway Width        =      37
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     101 372.301             151 370.157             188 369.953
   218.7 370.181

Upstream Bridge Cross Section Data
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
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   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        136.06  162.62            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  128.33  372.41           152.3 372.301           202.9 370.157
   238.6 369.953           268.9 370.181

Downstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  375.09    1.07  375.04    1.94  375.04    2.62  375.01    3.78  375.02
       5  374.95    6.16  374.97   13.83   374.5   15.25  374.52   31.31  375.33
   32.18  375.35   39.66   374.3   45.41  373.86   50.93  373.59   53.48  373.55
   59.91  373.31    62.6  373.32   81.57  373.51   85.54  373.44   92.18  373.21
   98.33  373.03  102.35  373.09  105.39  372.98  113.27  372.64  128.33  372.41
  164.68   369.2  190.47  367.33  202.12  366.92  205.34  366.81  210.08   364.6
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        205.34   238.7            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8   367.8       F
     239   440.9   367.8       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 15   62.66     .013     .013        0                  .5               1
Upstream   Elevation =  361.93
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          Centerline Station =  148
Downstream Elevation =  362.09
          Centerline Station =  215

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  362.32
          Centerline Station =  153
Downstream Elevation =  362.32
          Centerline Station =  220

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        104.78    Culv Full Len (ft)         62.66
  # Barrels                      1    Culv Vel US (ft/s)          8.34
  Q Barrel (cfs)            104.78    Culv Vel DS (ft/s)          8.34
  E.G. US. (ft)             368.67    Culv Inv El Up (ft)       361.93
  W.S. US. (ft)             368.60    Culv Inv El Dn (ft)       362.09
  E.G. DS (ft)              366.80    Culv Frctn Ls (ft)          0.33
  W.S. DS (ft)              366.73    Culv Exit Loss (ft)         1.01
  Delta EG (ft)               1.87    Culv Entr Loss (ft)         0.54
  Delta WS (ft)               1.87    Q Weir (cfs)
  E.G. IC (ft)              367.38    Weir Sta Lft (ft)
  E.G. OC (ft)              368.68    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        365.93    Weir Max Depth (ft)
  Culv WS Outlet (ft)       366.09    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         3.10    Min El Weir Flow (ft)     369.97


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        130.21    Culv Full Len (ft)         62.66
  # Barrels                      1    Culv Vel US (ft/s)         10.36
  Q Barrel (cfs)            130.21    Culv Vel DS (ft/s)         10.36
  E.G. US. (ft)             370.83    Culv Inv El Up (ft)       361.93
  W.S. US. (ft)             370.77    Culv Inv El Dn (ft)       362.09
  E.G. DS (ft)              367.91    Culv Frctn Ls (ft)          0.52
  W.S. DS (ft)              367.81    Culv Exit Loss (ft)         1.57
  Delta EG (ft)               2.91    Culv Entr Loss (ft)         0.83
  Delta WS (ft)               2.96    Q Weir (cfs)               73.77
  E.G. IC (ft)              368.89    Weir Sta Lft (ft)         135.44
  E.G. OC (ft)              370.83    Weir Sta Rgt (ft)         191.25
  Culvert Control           Outlet    Weir Submerg                0.00
  Culv WS Inlet (ft)        365.93    Weir Max Depth (ft)         0.87
  Culv WS Outlet (ft)       366.09    Weir Avg Depth (ft)         0.62
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)     34.63
  Culv Crt Depth (ft)         3.41    Min El Weir Flow (ft)     369.97


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         83.39    Culv Full Len (ft)         62.66
  # Barrels                      1    Culv Vel US (ft/s)          6.64
  Q Barrel (cfs)             83.39    Culv Vel DS (ft/s)          6.64
  E.G. US. (ft)             372.48    Culv Inv El Up (ft)       361.93
  W.S. US. (ft)             372.33    Culv Inv El Dn (ft)       362.09
  E.G. DS (ft)              371.33    Culv Frctn Ls (ft)          0.21
  W.S. DS (ft)              371.25    Culv Exit Loss (ft)         0.61
  Delta EG (ft)               1.15    Culv Entr Loss (ft)         0.34
  Delta WS (ft)               1.08    Q Weir (cfs)               606.05
  E.G. IC (ft)              366.39    Weir Sta Lft (ft)          89.94
  E.G. OC (ft)              372.49    Weir Sta Rgt (ft)         253.48
  Culvert Control           Outlet    Weir Submerg                0.31
  Culv WS Inlet (ft)        365.93    Weir Max Depth (ft)         2.51
  Culv WS Outlet (ft)       366.09    Weir Avg Depth (ft)         1.22
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)    180.42
  Culv Crt Depth (ft)         2.77    Min El Weir Flow (ft)     369.97


CULVERT OUTPUT  Profile #50-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         75.02    Culv Full Len (ft)         62.66
```

# Barrels	1	Culv Vel US (ft/s)	5.97
Q Barrel (cfs)	75.02	Culv Vel DS (ft/s)	5.97
E.G. US. (ft)	373.33	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.00	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	372.49	Culv Frctn Ls (ft)	0.17
W.S. DS (ft)	372.35	Culv Exit Loss (ft)	0.41
Delta EG (ft)	0.85	Culv Entr Loss (ft)	0.28
Delta WS (ft)	0.65	Q Weir (cfs)	1242.00
E.G. IC (ft)	366.05	Weir Sta Lft (ft)	74.92
E.G. OC (ft)	373.35	Weir Sta Rgt (ft)	257.58
Culvert Control	Outlet	Weir Submerg	0.55
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.36
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.77
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	323.17
Culv Crt Depth (ft)	2.62	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	71.81	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.71
Q Barrel (cfs)	71.81	Culv Vel DS (ft/s)	5.71
E.G. US. (ft)	373.68	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.21	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	372.96	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	372.78	Culv Exit Loss (ft)	0.33
Delta EG (ft)	0.72	Culv Entr Loss (ft)	0.25
Delta WS (ft)	0.43	Q Weir (cfs)	1593.40
E.G. IC (ft)	365.93	Weir Sta Lft (ft)	69.14
E.G. OC (ft)	373.70	Weir Sta Rgt (ft)	259.34
Culvert Control	Outlet	Weir Submerg	0.62
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.73
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	2.06
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	391.18
Culv Crt Depth (ft)	2.56	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	69.83	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.56
Q Barrel (cfs)	69.83	Culv Vel DS (ft/s)	5.56
E.G. US. (ft)	373.97	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.42	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.32	Culv Frctn Ls (ft)	0.15
W.S. DS (ft)	373.12	Culv Exit Loss (ft)	0.28
Delta EG (ft)	0.65	Culv Entr Loss (ft)	0.24
Delta WS (ft)	0.30	Q Weir (cfs)	1863.49
E.G. IC (ft)	365.85	Weir Sta Lft (ft)	65.04
E.G. OC (ft)	373.99	Weir Sta Rgt (ft)	260.58
Culvert Control	Outlet	Weir Submerg	0.68
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.99
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	2.26
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	441.00
Culv Crt Depth (ft)	2.53	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	104.22	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	8.29
Q Barrel (cfs)	104.22	Culv Vel DS (ft/s)	8.29
E.G. US. (ft)	368.67	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	368.60	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	366.80	Culv Frctn Ls (ft)	0.33
W.S. DS (ft)	366.73	Culv Exit Loss (ft)	0.99
Delta EG (ft)	1.87	Culv Entr Loss (ft)	0.53
Delta WS (ft)	1.87	Q Weir (cfs)	
E.G. IC (ft)	367.74	Weir Sta Lft (ft)	
E.G. OC (ft)	368.66	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.09	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	130.02	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	10.35
Q Barrel (cfs)	130.02	Culv Vel DS (ft/s)	10.35
E.G. US. (ft)	370.83	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	370.77	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	367.91	Culv Frctn Ls (ft)	0.51
W.S. DS (ft)	367.81	Culv Exit Loss (ft)	1.56
Delta EG (ft)	2.91	Culv Entr Loss (ft)	0.83
Delta WS (ft)	2.96	Q Weir (cfs)	73.77
E.G. IC (ft)	369.26	Weir Sta Lft (ft)	135.44
E.G. OC (ft)	370.82	Weir Sta Rgt (ft)	191.25
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	0.87
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	0.62
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	34.63
Culv Crt Depth (ft)	3.41	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	82.57	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	6.57
Q Barrel (cfs)	82.57	Culv Vel DS (ft/s)	6.57
E.G. US. (ft)	372.48	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.33	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	371.33	Culv Frctn Ls (ft)	0.21
W.S. DS (ft)	371.25	Culv Exit Loss (ft)	0.59
Delta EG (ft)	1.15	Culv Entr Loss (ft)	0.34
Delta WS (ft)	1.08	Q Weir (cfs)	606.05
E.G. IC (ft)	366.74	Weir Sta Lft (ft)	89.94
E.G. OC (ft)	372.47	Weir Sta Rgt (ft)	253.48
Culvert Control	Outlet	Weir Submerg	0.31
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	2.51
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.22
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	180.42
Culv Crt Depth (ft)	2.75	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	73.98	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.89
Q Barrel (cfs)	73.98	Culv Vel DS (ft/s)	5.89
E.G. US. (ft)	373.33	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.00	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	372.49	Culv Frctn Ls (ft)	0.17
W.S. DS (ft)	372.35	Culv Exit Loss (ft)	0.40
Delta EG (ft)	0.85	Culv Entr Loss (ft)	0.27
Delta WS (ft)	0.65	Q Weir (cfs)	1242.00
E.G. IC (ft)	366.40	Weir Sta Lft (ft)	74.92
E.G. OC (ft)	373.32	Weir Sta Rgt (ft)	257.58
Culvert Control	Outlet	Weir Submerg	0.55
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.36
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.77
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	323.17
Culv Crt Depth (ft)	2.60	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	70.79	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.63
Q Barrel (cfs)	70.79	Culv Vel DS (ft/s)	5.63
E.G. US. (ft)	373.68	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.21	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	372.96	Culv Frctn Ls (ft)	0.15
W.S. DS (ft)	372.78	Culv Exit Loss (ft)	0.31
Delta EG (ft)	0.72	Culv Entr Loss (ft)	0.25
Delta WS (ft)	0.43	Q Weir (cfs)	1593.40
E.G. IC (ft)	366.27	Weir Sta Lft (ft)	69.14
E.G. OC (ft)	373.67	Weir Sta Rgt (ft)	259.34
Culvert Control	Outlet	Weir Submerg	0.62
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.73
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	2.06
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	391.18
Culv Crt Depth (ft)	2.54	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	68.68	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.47
Q Barrel (cfs)	68.68	Culv Vel DS (ft/s)	5.47
E.G. US. (ft)	373.97	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.42	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.32	Culv Frctn Ls (ft)	0.14
W.S. DS (ft)	373.12	Culv Exit Loss (ft)	0.26
Delta EG (ft)	0.65	Culv Entr Loss (ft)	0.23
Delta WS (ft)	0.30	Q Weir (cfs)	1863.49
E.G. IC (ft)	366.19	Weir Sta Lft (ft)	65.04
E.G. OC (ft)	373.96	Weir Sta Rgt (ft)	260.58
Culvert Control	Outlet	Weir Submerg	0.68
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.99
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	2.26
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	441.00
Culv Crt Depth (ft)	2.50	Min El Weir Flow (ft)	369.97

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5614

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	375.09	1.07	375.04	1.94	375.04	2.62	375.01	3.78	375.02
5	374.95	6.16	374.97	13.83	374.5	15.25	374.52	31.31	375.33
32.18	375.35	39.66	374.3	45.41	373.86	50.93	373.59	53.48	373.55
59.91	373.31	62.6	373.32	81.57	373.51	85.54	373.44	92.18	373.21
98.33	373.03	102.35	373.09	105.39	372.98	113.27	372.64	128.33	372.41
164.68	369.2	190.47	367.33	202.12	366.92	205.34	366.81	210.08	364.6
211.22	364.43	215.09	361.81	217.13	362.04	229.59	362.98	238.7	368.44
238.98	368.61	251.44	369.69	268.94	370.18	285.07	369.62	290.27	370.06
298.37	370.04	306.37	370.28	324.69	371.75	335.39	372	342.38	373.55
344.58	374	353.22	376	364.13	378	366.42	378.31	380.54	380.03
386.38	380.25	391.69	380.39	399.18	380.94	403.65	381.15	406.06	381.34
407.91	381.42	410.66	381.64	411.73	381.67	415.82	382	420.24	382.3
421.1	382.39	423.89	382.58	424.39	382.64	428.52	382.91	431.83	383.32
435.07	383.79	435.47	383.82	436.48	384	438.12	384.43	440.9	385.22

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	205.34	.04	238.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
205.34	238.7	60.47	54.67	45.26	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	193.8	367.8	F
239	440.9	367.8	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
72.7	102.2	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5560

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.71	12.44	380.66	20.28	380.48	30.01	380.06	32.55	380
35.14	379.9	40.44	379.76	66.9	378.85	77.73	378.19	86.8	377.53
106.28	376	135.5	374	137.27	373.83	145.55	373.21	146.86	373.14
152.29	373.03	158.19	372.73	169.54	372.53	171.14	372.42	174.7	372
177.92	371.83	200.19	370.97	216.51	371.11	224.54	370.88	233.81	370.74
237.26	370.65	249.92	370	272.36	369.5	305.11	368.25	330.75	367.7
351.63	367.26	351.64	367.26	352.8	367.24	361.62	364.64	365.14	363.68
366.63	362.08	370.12	362.09	377.69	362.11	381.2	366.86	381.86	366.92
381.88	366.92	400.75	368.4	415.84	369.84	428.22	370.13	441.48	370.08
454.62	370.47	468.56	371.58	474.03	371.79	478.41	372	486.49	373.21
492.4	374	496.8	374.72	506.14	376	510.13	376.65	519.35	378

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  525.84  378.52   527.4  378.56  530.32  378.74  538.47  379.03  541.22  379.02
  541.91  379.05   543.2  379.02  545.47  379.17  545.81  379.17  552.05  379.68
   557.2  380.19  563.37  380.95  569.96     382  577.27     384   584.9     386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   352.8     .04   381.2    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         352.8   381.2            56.62   49.74    41.3             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5510

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        251.67  273.96            36.56   36.42   38.18             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 5500

INPUT
Description: Driveway
Distance from Upstream XS =    8.75
Deck/Roadway Width        =    11.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     245     368           246.3 368.296           251.7 369.922 368.922
   261.7 369.925 368.925   272.1 369.867 368.867   278.5 368.291
     281   367.8

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
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  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        251.67  273.96            .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  218.37  367.75           222.9 368.709           228.8 369.891 368.891
   238.9 369.925 368.925     248 369.959 368.959   254.6 368.591
  256.61  368.13

Downstream Bridge Cross Section Data
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.2    5.49  380.43   19.15  378.55   22.99     378   24.44  377.87
    27.6  377.66   28.15  377.66   32.08  377.85   34.11  377.81   34.84  377.86
   36.16  377.76    36.5  377.71   36.95   377.6   37.24  377.63   37.53  377.55
   43.71  377.04   44.96  377.01   53.85  377.19   61.96  376.88   69.36  376.67
    78.2  376.53   80.32  376.46   85.59  376.16   86.54  376.08   87.13     376
   96.16     374  106.12     372  115.26     370  135.49  369.25  142.97   369.5
  155.72     370  160.13  369.38  160.65  369.34  161.19  369.38  161.22  369.44
  161.24  368.96  165.72  368.71  205.57  368.19  226.91  367.45  227.84  367.41
  239.06  361.76  241.96   361.6  245.76  361.52  251.97  367.85  256.98  368.15
  272.47  369.07  292.37  370.16  313.15  370.81  318.99   371.3  321.33   371.4
  339.22  371.96  340.43     372  349.15  373.24   355.3     374  368.27  375.86
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        227.84  251.97            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
```

Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	366.59	Element		
W.S. US. (ft)	366.24	E.G. Elev (ft)	366.53	366.39
Q Total (cfs)	209.00	W.S. Elev (ft)	366.15	366.19
Q Bridge (cfs)	209.00	Crit W.S. (ft)	365.16	364.18
Q Weir (cfs)		Max Chl Dpth (ft)	3.99	4.67
Weir Sta Lft (ft)		Vel Total (ft/s)	4.93	3.59
Weir Sta Rgt (ft)		Flow Area (sq ft)	42.38	58.16
Weir Submerg		Froude # Chl	0.44	0.29
Weir Max Depth (ft)		Specif Force (cu ft)	97.17	137.00
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.53	3.28
Min El Prs (ft)	368.93	W.P. Total (ft)	19.54	22.16
Delta EG (ft)	0.24	Conv. Total (cfs)	2637.8	4110.7
Delta WS (ft)	0.08	Top Width (ft)	16.73	17.76
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	4.93	C & E Loss (ft)	0.09	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.85	0.42
BR Sel Method	Energy only	Power Total (lb/ft s)	4.19	1.52

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	367.70	Element		
W.S. US. (ft)	367.27	E.G. Elev (ft)	367.63	367.49
Q Total (cfs)	334.00	W.S. Elev (ft)	367.15	367.19
Q Bridge (cfs)	334.00	Crit W.S. (ft)	365.90	364.95
Q Weir (cfs)		Max Chl Dpth (ft)	4.99	5.67
Weir Sta Lft (ft)		Vel Total (ft/s)	5.55	4.35
Weir Sta Rgt (ft)		Flow Area (sq ft)	60.20	76.85
Weir Submerg		Froude # Chl	0.44	0.32
Weir Max Depth (ft)		Specif Force (cu ft)	173.92	226.20
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.19	4.00
Min El Prs (ft)	368.93	W.P. Total (ft)	22.91	25.07
Delta EG (ft)	0.27	Conv. Total (cfs)	4258.7	6025.6
Delta WS (ft)	0.11	Top Width (ft)	18.86	19.22
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	5.55	C & E Loss (ft)	0.09	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	1.01	0.59
BR Sel Method	Energy only	Power Total (lb/ft s)	5.60	2.56

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	371.28	Element		
W.S. US. (ft)	371.11	E.G. Elev (ft)	371.27	371.25
Q Total (cfs)	772.00	W.S. Elev (ft)	371.11	371.13
Q Bridge (cfs)	230.14	Crit W.S. (ft)	367.76	366.88
Q Weir (cfs)	449.73	Max Chl Dpth (ft)	8.95	9.61
Weir Sta Lft (ft)	134.32	Vel Total (ft/s)	2.01	1.85
Weir Sta Rgt (ft)	355.81	Flow Area (sq ft)	383.42	417.10
Weir Submerg	0.99	Froude # Chl	0.15	0.13
Weir Max Depth (ft)	3.40	Specif Force (cu ft)	776.86	927.56
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.30	2.43
Min El Prs (ft)	368.93	W.P. Total (ft)	214.99	225.91
Delta EG (ft)	0.02	Conv. Total (cfs)		
Delta WS (ft)	-0.02	Top Width (ft)	218.76	171.54

BR Open Area (sq ft)	95.52	Frctn Loss (ft)	
BR Open Vel (ft/s)	2.41	C & E Loss (ft)	
BR Sluice Coef		Shear Total (lb/sq ft)	
BR Sel Method	Press/Weir	Power Total (lb/ft s)	

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.38	Element		
W.S. US. (ft)	372.14	E.G. Elev (ft)	372.38	372.35
Q Total (cfs)	1391.00	W.S. Elev (ft)	372.14	372.14
Q Bridge (cfs)	296.28	Crit W.S. (ft)	370.43	370.14
Q Weir (cfs)	1094.72	Max Chl Dpth (ft)	9.98	10.62
Weir Sta Lft (ft)	128.27	Vel Total (ft/s)	2.37	2.21
Weir Sta Rgt (ft)	377.25	Flow Area (sq ft)	587.61	629.00
Weir Submerg	0.97	Froude # Chl	0.16	0.15
Weir Max Depth (ft)	4.51	Specif Force (cu ft)	1295.94	1477.87
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.04	3.13
Min El Prs (ft)	368.93	W.P. Total (ft)	241.88	257.16
Delta EG (ft)	0.03	Conv. Total (cfs)		
Delta WS (ft)	-0.01	Top Width (ft)	245.53	200.64
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	3.10	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.82	Element		
W.S. US. (ft)	372.54	E.G. Elev (ft)	372.82	372.79
Q Total (cfs)	1736.00	W.S. Elev (ft)	372.54	372.54
Q Bridge (cfs)	325.19	Crit W.S. (ft)	370.75	370.45
Q Weir (cfs)	1410.81	Max Chl Dpth (ft)	10.38	11.02
Weir Sta Lft (ft)	125.28	Vel Total (ft/s)	2.57	2.41
Weir Sta Rgt (ft)	380.59	Flow Area (sq ft)	676.79	720.98
Weir Submerg	0.97	Froude # Chl	0.17	0.16
Weir Max Depth (ft)	4.96	Specif Force (cu ft)	1570.43	1765.25
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.40	3.51
Min El Prs (ft)	368.93	W.P. Total (ft)	247.69	262.81
Delta EG (ft)	0.03	Conv. Total (cfs)		
Delta WS (ft)	0.00	Top Width (ft)	251.27	205.43
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	3.40	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		

BR Sel Method	Press/Weir	Power Total (lb/ft s)	

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	373.17	Element	Inside BR US	Inside BR DS	
W.S. US. (ft)	372.87	E.G. Elev (ft)	373.17	373.14	
Q Total (cfs)	2002.00	W.S. Elev (ft)	372.87	372.86	
Q Bridge (cfs)	340.97	Crit W.S. (ft)	370.92	370.68	
Q Weir (cfs)	1661.03	Max Chl Dpth (ft)	10.71	11.34	
Weir Sta Lft (ft)	122.97	Vel Total (ft/s)	2.67	2.52	
Weir Sta Rgt (ft)	383.36	Flow Area (sq ft)	748.54	794.62	
Weir Submerg	0.97	Froude # Chl	0.17	0.16	
Weir Max Depth (ft)	5.31	Specif Force (cu ft)	1814.88	2018.98	
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.68	3.80	
Min El Prs (ft)	368.93	W.P. Total (ft)	252.37	267.37	
Delta EG (ft)	0.04	Conv. Total (cfs)			
Delta WS (ft)	0.00	Top Width (ft)	255.91	209.28	
BR Open Area (sq ft)	95.52	Frctn Loss (ft)			
BR Open Vel (ft/s)	3.57	C & E Loss (ft)			
BR Sluice Coef		Shear Total (lb/sq ft)			
BR Sel Method	Press/Weir	Power Total (lb/ft s)			

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5474

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87
27.6	377.66	28.15	377.66	32.08	377.85	34.11	377.81	34.84	377.86
36.16	377.76	36.5	377.71	36.95	377.6	37.24	377.63	37.53	377.55
43.71	377.04	44.96	377.01	53.85	377.19	61.96	376.88	69.36	376.67
78.2	376.53	80.32	376.46	85.59	376.16	86.54	376.08	87.13	376
96.16	374	106.12	372	115.26	370	135.49	369.25	142.97	369.5
155.72	370	160.13	369.38	160.65	369.34	161.19	369.38	161.22	369.44
161.24	368.96	165.72	368.71	205.57	368.19	226.91	367.45	227.84	367.41
239.06	361.76	241.96	361.6	245.76	361.52	251.97	367.85	256.98	368.15
272.47	369.07	292.37	370.16	313.15	370.81	318.99	371.3	321.33	371.4
339.22	371.96	340.43	372	349.15	373.24	355.3	374	368.27	375.86

```
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        227.84  251.97             54.4   54.86   54.94             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5419

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.86    3.78  380.71    4.98  380.68    6.09  380.65   17.15  380.11
   18.16     380   18.96  379.91   19.28  379.88   19.92  379.82   26.66  379.12
   33.04  378.58   34.43  378.44   39.87     378   40.43  377.97    45.3  377.68
   47.96  377.57   55.03  377.19   58.61  377.04   63.94  376.76   68.35  376.51
   75.42  376.11   77.27     376   79.39   375.6   88.74     374   95.93  372.25
  103.06  370.55  105.38     370  106.52  369.95   124.3  369.13  143.21  368.92
  147.73  368.65  154.71  368.29  193.74  367.43  212.87  367.11  212.89  367.11
   213.8   367.1  221.32  362.36  228.08  361.46  230.72  362.15  234.51  367.15
  243.11  367.53  243.13  367.53  255.89   368.1  273.39  369.09  289.93  371.07
  313.65  371.93  314.49  371.98   314.7     372  316.49  372.27  319.14  372.61
  322.78  373.12  328.35  373.78  330.34  374.01  330.63  374.04  333.66   374.3
   334.1  374.33  334.72  374.39  338.27  374.58  342.52   374.8  344.74  375.07
   346.7  375.32  347.32  375.37  350.65  375.82  350.83  375.84  351.12  375.87
  351.94     376  361.89     378  362.32  378.12   369.2     380   375.4     382
  381.54     384  387.14     386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   213.8     .04  234.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         213.8  234.51            93.04   95.36   97.65             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    25.8     385       F
   161.5   202.4     385       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5323

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.88   33.33  380.11   40.06     380   44.89   379.5      59     378
   67.02   377.3   71.41  376.93   82.12     376   85.17  375.72   86.89  375.57
  104.57     374  104.96  373.94  105.28  373.89  109.01  373.33  110.74  373.08
  113.95  372.58   116.4  372.26  118.47     372  119.44  371.89  121.49  371.67
  125.25  371.29  126.03  371.19  132.92     370   135.4  369.51  137.55  369.08
  143.39  368.87  152.17  368.34  189.23  365.45  207.94  365.88  213.15     366
  215.76  361.32  219.54  361.54  222.99  361.95  225.61  363.08  227.85  363.55
  233.11  366.26     238  366.82  242.41  367.33  259.77  368.53  278.63  371.43
  280.36     372  318.89     376  320.12  376.01  321.57  376.05  349.64  377.86
  349.73  377.86   349.8  377.87  351.93     378  359.87  379.62  362.53     380
   367.1  381.08  369.42  381.61  370.97     382  374.97  382.95  379.47     384
  383.38   384.6  383.92  384.68
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.15	.04	233.11	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.15	233.11	116.69	114.31	111.9	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	28.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5209

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.03	.15	378.03	1.95	378	2.36	377.96	6.29	377.85
16.45	377.5	32.34	376.94	33.33	376.83	33.48	376.82	33.68	376.79
33.96	376.77	34.79	376.69	35.57	376.61	36.06	376.58	36.71	376.52
37.31	376.46	37.67	376.43	38.36	376.39	38.61	376.37	39.48	376.31
42.48	376.17	42.92	376.13	45.71	376	45.73	376	49.13	375.52
50	375.39	51.69	375.13	54.05	374.76	55.37	374.56	56.81	374.32
58.6	374	58.66	374	59.06	373.96	84.53	372.91	98.55	372.35
98.82	372.33	99.63	372.28	103.93	372.02	104.29	372	104.3	372
106.14	371.66	116.08	370.04	116.42	370	139.5	368.78	180.51	365.75
201.11	365.1	209.66	364.83	212.88	361.1	216.14	361.11	219.68	361.44
225.21	365.18	231.24	365.5	231.26	365.5	242.79	366.12	270.5	369.12
274.64	369.12	323.97	372.18	340.57	374.96	340.58	375.25	340.59	375.28
344.72	375.7	345.37	375.76	347.71	376	348.59	376.15		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.66	.04	225.21	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.66	225.21	111.42	101.59	91.47	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
298.8	301.6	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	22.5	380	270.4	298.8	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5107

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.01	.24	376	7.07	375.83	9.07	375.73	10.81	375.67
14.62	375.53	15.38	375.51	17.77	375.4	18.91	375.37	34.75	374.53
41.77	374.45	50.79	374.46	55.85	374.46	57.09	374.44	66.02	374.11
71.3	374	75.88	373.97	100.91	373.67	129.38	373.15	147.16	372.84
170.03	372.61	172.25	372.56	172.92	372.55	178.44	372.44	185.81	372.3
200.51	372.07	201.43	371.98	201.7	371.98	202.67	371.92	215.72	371.52
224.6	371.21	235.57	370.77	237.04	370.74	250.15	370.35	252.81	370.32
253.08	370.31	263.87	370.17	266.55	370.18	267.52	370.19	268.58	370.13
278.39	370.23	284.41	370.28	291.18	370.38	294.8	370.34	311.68	370.28
315.54	370.35	315.75	370.35	322.33	370.22	323.94	370.21	332.11	370.09
355.05	371.1	364.88	371.1	382.36	369.28	393.14	367.95	393.15	367.95
397.41	367.43	406.55	360.36	409.03	359.92	412.88	360.59	414.63	362.95
416.03	363.17	422.1	365.13	424.57	365.29	439.58	366.25	464.4	370.03
475.81	370.03	507.28	370.74	534.67	372.32	549.02	374.66	549.03	374.92
549.05	374.92	551.62	375.01	559.75	376	561.38	376.32		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	397.41	.04	422.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.41	422.1	67.29	67.07	66.86	.1	.3

```
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
   295.8   317.3     380       F
   445.9   465.3     380       F
   474.6   515.9     380       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
   317.3   364.3     380   465.3   474.6     380

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5040

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     376    3.61  375.88   21.39  374.91   24.35   374.9   39.18  375.08
   42.63  375.04   47.14   374.9   52.43  374.83    54.6  374.82   57.34  374.78
   60.84  374.76   65.24  374.68    66.8  374.67   69.29  374.63   82.36  374.74
   84.96  374.72    94.2  374.58   98.84  374.02   99.09     374  100.29  373.97
  104.65  373.88  105.56  373.85  106.59  373.78  109.92  373.71  111.01   373.7
  130.98   373.7  135.97  373.62  165.62  372.83  166.72  372.81  174.13  372.86
  190.11     373  193.32     373  195.48  372.98  206.16  372.44  206.59  372.42
  208.47   372.4  218.24   372.4  219.79  372.28  225.13     372  226.38  371.95
  226.58  371.93  245.52  371.43  256.75  371.11  261.14  370.99  264.15   370.9
  269.51  370.76  283.05  370.32  296.66  370.06  300.29     370   307.5  369.97
  310.36  369.98  336.01  370.03  366.23  369.58  397.63  368.96  412.55   368.2
  412.96  367.93   415.6 366.107  424.49  359.97  427.96  359.23  429.97  359.61
   432.2  361.31  434.59   361.8  443.41   365.9  443.42  365.91   448.7  368.36
  463.33  369.65  490.22  370.98  518.26  372.76  527.06  373.76  535.03     374
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         415.6  443.41           104.82   108.2  107.53             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5000

INPUT
Description: Longview Drive
Distance from Upstream XS =      38
Deck/Roadway Width        =      27
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     122     374             231     372           346.8 370.217
   363.6 369.987           384.5  369.89             390 370.049
   400.6 370.192           404.7 370.096           417.9 370.146
   433.4  370.53           456.1 371.384           479.9   372.4
   523.7     374           556.9     376

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     376    3.61  375.88   21.39  374.91   24.35   374.9   39.18  375.08
   42.63  375.04   47.14   374.9   52.43  374.83    54.6  374.82   57.34  374.78
   60.84  374.76   65.24  374.68    66.8  374.67   69.29  374.63   82.36  374.74
   84.96  374.72    94.2  374.58   98.84  374.02   99.09     374  100.29  373.97
  104.65  373.88  105.56  373.85  106.59  373.78  109.92  373.71  111.01   373.7
  130.98   373.7  135.97  373.62  165.62  372.83  166.72  372.81  174.13  372.86
  190.11     373  193.32     373  195.48  372.98  206.16  372.44  206.59  372.42
  208.47   372.4  218.24   372.4  219.79  372.28  225.13     372  226.38  371.95
  226.58  371.93  245.52  371.43  256.75  371.11  261.14  370.99  264.15   370.9
  269.51  370.76  283.05  370.32  296.66  370.06  300.29     370   307.5  369.97
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  310.36  369.98  336.01  370.03  366.23  369.58  397.63  368.96  412.55   368.2
  412.96  367.93   415.6 366.107  424.49  359.97  427.96  359.23  429.97  359.61
   432.2  361.31  434.59   361.8  443.41   365.9  443.42  365.91   448.7  368.36
  463.33  369.65  490.22  370.98  518.26  372.76  527.06  373.76  535.03     374
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         415.6  443.41            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

Downstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  375.75             124     374           270.8     372
   386.7 370.217           403.6 369.987           424.4  369.89
   429.9 370.049           440.5 370.192           444.4 370.096
   457.6 370.146           473.1  370.53           495.7 371.384
   519.5   372.4           561.3     374           594.1     376

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  381.34    1.15  381.36    5.15  381.18    6.14   381.2    7.86  381.16
   10.94  381.18   23.92     381   30.33  380.86   45.55  380.35   51.93  380.07
   65.77   379.6   68.46  379.68   70.71  379.61   75.04  379.33   80.36  379.11
  107.04  378.79  117.65  378.45  125.92     378  132.09  376.99  138.71     376
  142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
  164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
  181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
  210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
   248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
  296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
  405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
  444.02  363.09  449.76  359.84  461.09  359.04  468.33 363.925  475.48  368.75
  476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
  568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
  588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
  633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        442.94  468.33            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442  364.65       F
   476.1  633.02  364.65       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   68.79     .024     .024        0                  .5                1
Upstream   Elevation =  359.44
           Centerline Station =  425
Downstream Elevation =  359.83
           Centerline Station =  450
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Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   70.81     .024     .024        0                  .5                1
Upstream   Elevation =  359.39
           Centerline Station =  432
Downstream Elevation =  359.74
           Centerline Station =  457
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CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	103.80	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.42
Q Barrel (cfs)	103.80	Culv Vel DS (ft/s)	8.18
E.G. US. (ft)	363.72	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	363.34	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	362.45	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	362.04	Culv Exit Loss (ft)	0.62
Delta EG (ft)	1.27	Culv Entr Loss (ft)	0.23
Delta WS (ft)	1.30	Q Weir (cfs)	
E.G. IC (ft)	362.92	Weir Sta Lft (ft)	
E.G. OC (ft)	363.73	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.05	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.12	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	166.36	Culv Full Len (ft)	42.16
# Barrels	1	Culv Vel US (ft/s)	8.35
Q Barrel (cfs)	166.36	Culv Vel DS (ft/s)	9.77
E.G. US. (ft)	365.90	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	365.71	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	363.42	Culv Frctn Ls (ft)	0.60
W.S. DS (ft)	362.92	Culv Exit Loss (ft)	0.98
Delta EG (ft)	2.49	Culv Entr Loss (ft)	0.54
Delta WS (ft)	2.79	Q Weir (cfs)	
E.G. IC (ft)	364.85	Weir Sta Lft (ft)	
E.G. OC (ft)	365.90	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.92	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.80	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	258.91	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	12.99
Q Barrel (cfs)	258.91	Culv Vel DS (ft/s)	12.99
E.G. US. (ft)	371.05	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	370.95	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	365.53	Culv Frctn Ls (ft)	2.37
W.S. DS (ft)	364.75	Culv Exit Loss (ft)	1.84
Delta EG (ft)	5.52	Culv Entr Loss (ft)	1.31
Delta WS (ft)	6.20	Q Weir (cfs)	255.91
E.G. IC (ft)	368.61	Weir Sta Lft (ft)	292.08
E.G. OC (ft)	371.06	Weir Sta Rgt (ft)	447.48
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	1.17
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	0.71
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	109.57
Culv Crt Depth (ft)	3.60	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	247.44	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	12.41
Q Barrel (cfs)	247.44	Culv Vel DS (ft/s)	12.41
E.G. US. (ft)	371.98	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	371.78	Culv Inv El Dn (ft)	359.83

E.G. DS (ft)	367.40	Culv Frctn Ls (ft)	2.17
W.S. DS (ft)	366.21	Culv Exit Loss (ft)	1.20
Delta EG (ft)	4.57	Culv Entr Loss (ft)	1.20
Delta WS (ft)	5.57	Q Weir (cfs)	897.28
E.G. IC (ft)	368.05	Weir Sta Lft (ft)	232.01
E.G. OC (ft)	371.97	Weir Sta Rgt (ft)	470.16
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.09
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.23
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	291.86
Culv Crt Depth (ft)	3.60	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	238.37	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	11.96
Q Barrel (cfs)	238.37	Culv Vel DS (ft/s)	11.96
E.G. US. (ft)	372.31	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.06	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	368.32	Culv Frctn Ls (ft)	2.01
W.S. DS (ft)	366.95	Culv Exit Loss (ft)	0.86
Delta EG (ft)	3.99	Culv Entr Loss (ft)	1.11
Delta WS (ft)	5.11	Q Weir (cfs)	1260.19
E.G. IC (ft)	367.63	Weir Sta Lft (ft)	219.28
E.G. OC (ft)	372.30	Weir Sta Rgt (ft)	478.02
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.43
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.45
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	375.72
Culv Crt Depth (ft)	3.60	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	232.00	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	11.64
Q Barrel (cfs)	232.00	Culv Vel DS (ft/s)	11.64
E.G. US. (ft)	372.59	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.30	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	368.98	Culv Frctn Ls (ft)	1.91
W.S. DS (ft)	367.51	Culv Exit Loss (ft)	0.64
Delta EG (ft)	3.61	Culv Entr Loss (ft)	1.05
Delta WS (ft)	4.79	Q Weir (cfs)	1538.80
E.G. IC (ft)	367.35	Weir Sta Lft (ft)	204.10
E.G. OC (ft)	372.58	Weir Sta Rgt (ft)	483.85
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.65
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.56
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	436.43
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	105.20	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.49
Q Barrel (cfs)	105.20	Culv Vel DS (ft/s)	7.98
E.G. US. (ft)	363.72	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	363.34	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	362.45	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	362.04	Culv Exit Loss (ft)	0.57
Delta EG (ft)	1.27	Culv Entr Loss (ft)	0.23
Delta WS (ft)	1.30	Q Weir (cfs)	
E.G. IC (ft)	362.90	Weir Sta Lft (ft)	
E.G. OC (ft)	363.71	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.00	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.14	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	167.64	Culv Full Len (ft)	44.42
# Barrels	1	Culv Vel US (ft/s)	8.41
Q Barrel (cfs)	167.64	Culv Vel DS (ft/s)	9.61
E.G. US. (ft)	365.90	Culv Inv El Up (ft)	359.39

W.S. US. (ft)	365.71	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	363.42	Culv Frctn Ls (ft)	0.64
W.S. DS (ft)	362.92	Culv Exit Loss (ft)	0.94
Delta EG (ft)	2.49	Culv Entr Loss (ft)	0.55
Delta WS (ft)	2.79	Q Weir (cfs)	
E.G. IC (ft)	364.84	Weir Sta Lft (ft)	
E.G. OC (ft)	365.90	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.92	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.80	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	257.18	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	12.90
Q Barrel (cfs)	257.18	Culv Vel DS (ft/s)	12.90
E.G. US. (ft)	371.05	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	370.95	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	365.53	Culv Frctn Ls (ft)	2.41
W.S. DS (ft)	364.75	Culv Exit Loss (ft)	1.81
Delta EG (ft)	5.52	Culv Entr Loss (ft)	1.29
Delta WS (ft)	6.20	Q Weir (cfs)	255.91
E.G. IC (ft)	368.47	Weir Sta Lft (ft)	292.08
E.G. OC (ft)	371.04	Weir Sta Rgt (ft)	447.48
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	1.17
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	0.71
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	109.57
Culv Crt Depth (ft)	3.60	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	246.28	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	12.36
Q Barrel (cfs)	246.28	Culv Vel DS (ft/s)	12.36
E.G. US. (ft)	371.98	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	371.78	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	367.40	Culv Frctn Ls (ft)	2.21
W.S. DS (ft)	366.21	Culv Exit Loss (ft)	1.18
Delta EG (ft)	4.57	Culv Entr Loss (ft)	1.19
Delta WS (ft)	5.57	Q Weir (cfs)	897.28
E.G. IC (ft)	367.95	Weir Sta Lft (ft)	232.01
E.G. OC (ft)	371.98	Weir Sta Rgt (ft)	470.16
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.09
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.23
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	291.86
Culv Crt Depth (ft)	3.60	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	237.44	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	11.91
Q Barrel (cfs)	237.44	Culv Vel DS (ft/s)	11.91
E.G. US. (ft)	372.31	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.06	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	368.32	Culv Frctn Ls (ft)	2.06
W.S. DS (ft)	366.95	Culv Exit Loss (ft)	0.84
Delta EG (ft)	3.99	Culv Entr Loss (ft)	1.10
Delta WS (ft)	5.11	Q Weir (cfs)	1260.19
E.G. IC (ft)	367.54	Weir Sta Lft (ft)	219.28
E.G. OC (ft)	372.32	Weir Sta Rgt (ft)	478.02
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.43
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.45
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	375.72
Culv Crt Depth (ft)	3.60	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	231.20	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	11.60
Q Barrel (cfs)	231.20	Culv Vel DS (ft/s)	11.60

E.G. US. (ft)	372.59	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.30	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	368.98	Culv Frctn Ls (ft)	1.95
W.S. DS (ft)	367.51	Culv Exit Loss (ft)	0.62
Delta EG (ft)	3.61	Culv Entr Loss (ft)	1.05
Delta WS (ft)	4.79	Q Weir (cfs)	1538.80
E.G. IC (ft)	367.26	Weir Sta Lft (ft)	204.10
E.G. OC (ft)	372.60	Weir Sta Rgt (ft)	483.85
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.65
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.56
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	436.43
Culv Crt Depth (ft)	3.51	Min El Weir Flow (ft)	370.12

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4932

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.34	1.15	381.36	5.15	381.18	6.14	381.2	7.86	381.16
10.94	381.18	23.92	381	30.33	380.86	45.55	380.35	51.93	380.07
65.77	379.6	68.46	379.68	70.71	379.61	75.04	379.33	80.36	379.11
107.04	378.79	117.65	378.45	125.92	378	132.09	376.99	138.71	376
142.75	375.74	145.13	375.77	151.41	375.65	152.99	375.6	162.62	375.4
164.08	375.33	165.89	375.33	172.24	375.73	177.38	376	177.63	376.05
181.27	376.17	185.16	376.34	192.75	376.58	200.87	376.58	208.17	376.57
210.94	376.5	239.9	376	245.1	375.7	245.52	375.7	248.29	375.54
248.6	375.54	250.31	375.45	256.27	375.5	262.18	375.3	281.18	374
296.71	372.3	299.71	372	320.36	371.86	345.94	370.82	375.13	370.26
405.43	368.96	424.73	368.62	429.83	363.66	442.94	363.7	444	363.1
444.02	363.09	449.76	359.84	461.09	359.04	468.33	363.925	475.48	368.75
476.07	368.78	476.1	368.79	501.36	370.51	527.01	371.18	549.43	374
568.87	375.7	572.79	376	583.63	376.6	584.84	376.64	587.35	376.78
588.79	376.83	590.9	376.94	610.8	377.12	614.03	377.22	619.02	377.46
633.02	378.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	442.94	.04	468.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
442.94	468.33	86.54	87.15	87.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	442	364.65	F
476.1	633.02	364.65	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4845

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.58	4.55	380.55	6.68	380.49	9.66	380.28	16.63	379.98
26.33	379.81	62.1	378.84	98.92	378	99.32	377.89	136.94	376
143	375.91	149.44	376	152.28	376.1	156.17	376.13	191.4	376.8
203.32	376.79	209.98	376.63	238.93	376.59	244.45	376.21	250.81	376
261.25	374.62	275.77	372	281.64	371.31	290.21	370.67	304.89	369.51
331.41	367.13	348.83	364.14	380.45	364.27	402.65	363.64	402.68	363.64
406.34	363.53	414.27	358.13	417.64	357.81	425.27	358.61	432.32	365.43
433.19	365.53	433.22	365.53	453.71	367.76	474.07	367.76	485.62	368
502.49	370	503.75	370.14	505.06	370.4	505.48	370.53	507.56	370.13
509	370	513.04	370	518.39	370.19	521.7	370.19	524.91	370.37
537.92	371.65	541.22	371.89	542.32	372.1	545.8	372.19	575.74	373.74
577.08	373.86	599.27	377.01	605.31	377.77	608.04	378.01	611.15	378.12
614.15	378.14	616.12	378.1	621.88	378.21	625.35	378.34	639.16	379.09
657.61	380	661.97	380.57	669.23	381.67	678.71	383.47		

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  406.34     .04  433.22    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        406.34  433.22           89.54  100.49  110.66             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   336.4   363.2     385       F
   550.5     618     385       F
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
   127.8   235.6     385   296.1   336.4     385     454   504.5     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4745

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.11    21.9  380.04   28.76  379.88    34.3  379.51    43.1  379.86
   53.28   379.9   56.58  379.78   62.04  379.32   72.76  379.37   82.93  379.28
   86.47  379.41   92.14  379.33   95.69  379.17  109.62  379.08  135.12  378.66
  137.45  378.48  167.42   378.8  171.95  378.72  192.21     378  200.65  377.24
  235.54  377.01  241.83  376.74  253.23   377.1  255.58  376.97  271.08  376.62
  275.97  376.65  279.99  377.08  282.06  377.08  293.56  376.33  300.79  376.13
  316.78  375.92  330.78  375.45  339.87  375.04  353.65     374  362.03  373.25
  376.22   371.8  398.14  369.91  398.19  368.67  441.73  364.73  471.43  362.82
  491.34  362.87  497.92  361.09  497.93  361.09  503.16  359.68  507.05  359.79
  508.57  357.67  513.05  357.45  516.27  357.67     524  363.35  528.02  363.37
  528.05  363.37  543.42  363.45  576.59  363.78  580.38     364  587.66   364.1
  599.83  364.36  607.95  364.42   639.8     366  660.86   367.5  675.48  368.86
  685.51     370  701.05  372.18  718.22  373.29  725.55  373.48  731.12  374.02
  748.44  374.98  752.53   375.3   765.7  375.87  778.37  376.85  791.24     378
  806.37     380  808.13  380.31  815.79  381.16  824.93     382  831.66  382.72

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  491.34     .04     524    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        491.34     524           111.08  108.67  106.25             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4636

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.34    6.89  380.72    8.14  380.72    21.8  379.64   39.34     378
   67.85     376  132.49  373.43  147.33     374  162.25     376   169.4  376.34
  178.16  375.89  185.65  375.64  200.34  375.76   233.4  375.68  239.11  375.36
   249.5  375.34  251.25  375.42   257.5  375.35  267.44  374.96  277.67  374.75
  315.27  374.57  318.08  374.63  344.76     374   355.8     372  365.77     370
  409.43     368  426.89  366.86  461.95  364.11   477.5  361.95  477.88   361.7
  477.89  361.69   483.5  357.91  493.33  357.61  499.07  357.85   502.3  362.25
  508.59  362.41  508.61  362.41   524.4  362.83  556.76  362.64  588.33  363.03
  609.48  362.74  620.82  363.21  643.23  363.52  650.91  363.84  673.28  365.16
  690.67  365.89   697.4  365.96  767.85  369.67   776.5     370  791.17  370.91
  827.59     374  829.12  374.06  835.04     374  840.77  373.45  865.39     370
  874.22     368  886.48  367.07   898.7     368  908.05     370  921.08     372
  930.79     374  936.24     376  940.95     378  945.37     380  961.95     388
  966.25     390  970.84     392  976.29     394   984.5     396

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   477.5     .04   502.3    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         477.5   502.3            90.09   85.72   81.01             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
```

```
  829.12  930.96  374.06       T
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    12.5    47.6     385   159.7   233.5     385   289.2   333.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4550

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         487.5  517.99           205.67  206.54  206.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 4400

INPUT
Description: US 40 - modified to a 50 ft bridge opening and assuming a 3' depth
             of the roadway
Distance from Upstream XS =      53
Deck/Roadway Width        =     104
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      20
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     5.8     380              83     378             165     376
     237     374             324     372             391 371.588
     429 371.157           463.7 370.927           467.5  370.92  367.92
   490.9 370.876 367.876   517.5  371.19  368.19   527.4 371.004
   560.1 371.263           596.7  371.72             644     372
     732     374             786     376             860     378
     928     380             999     382

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
```

```
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         487.5  517.99            .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

Downstream  Deck/Roadway Coordinates
    num=      13
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      13     378              97     376             158     374
   290.3 372.244             328  371.79           354.7 371.615
  356.06  371.61  368.61   387.1 371.555 368.555  406.13  371.59  368.59
   419.8  371.62           453.4 371.896           491.3 372.287
     600     374

Downstream Bridge Cross Section Data
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.39     3.9  379.26    7.14  379.08    8.79  379.03   11.22  378.89
   14.53  378.78   17.41  378.61   25.86  378.28    32.7   378.1   37.64  377.91
   47.11  377.39    52.1  377.51   58.99  377.54   77.62  377.45   88.21  377.23
   92.02  377.21   95.64  377.34  113.55  377.38  122.03     377  137.03  376.62
  138.43  376.63   139.9  376.54  142.13  376.29  145.36     376  158.31  375.76
  187.11  374.72  198.02   374.5  200.77  374.48  208.31  374.54   212.2  374.51
   224.1     374  231.63  372.98   244.2   372.1  267.66  371.03  274.63  370.67
  284.57     370  294.75  364.77  310.72  364.84   317.5  367.36  326.34  364.31
  347.85  362.45  366.55  361.42  369.78  361.24  371.99  357.69   373.8  356.67
  379.51  351.69   381.6     352  394.25  354.75  396.69  357.39  399.49  360.42
  420.27  362.04  443.45   362.5  460.82  363.19  487.61     366  491.52  366.47
  492.41  366.52  501.31  366.41  508.11  366.82  510.99  366.89  511.84  366.96
  518.45  367.09  530.63  367.88  531.82     368  543.84     370  556.98     372
  567.14  372.99  573.69  373.54  580.03     374  596.09  374.78  599.01  375.01
   603.8  375.23  612.54     376  624.11  376.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  369.78     .04  399.49    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        369.78  399.49            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     356  371.55       F
     407  624.11  371.55       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
```

Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	360.83	Element		
W.S. US. (ft)	360.58	E.G. Elev (ft)	360.24	359.48
Q Total (cfs)	209.00	W.S. Elev (ft)	359.44	359.45
Q Bridge (cfs)	209.00	Crit W.S. (ft)	359.44	354.77
Q Weir (cfs)		Max Chl Dpth (ft)	2.20	7.76
Weir Sta Lft (ft)		Vel Total (ft/s)	7.17	1.51
Weir Sta Rgt (ft)		Flow Area (sq ft)	29.14	138.00
Weir Submerg		Froude # Chl	1.00	0.12
Weir Max Depth (ft)		Specif Force (cu ft)	74.07	413.59
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	1.60	4.98
Min El Prs (ft)	368.19	W.P. Total (ft)	19.18	33.17
Delta EG (ft)	1.36	Conv. Total (cfs)	1430.4	13258.9
Delta WS (ft)	1.15	Top Width (ft)	18.25	27.69
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.08	3.78
BR Open Vel (ft/s)	7.17	C & E Loss (ft)	0.38	0.36
BR Sluice Coef		Shear Total (lb/sq ft)	2.02	0.06
BR Sel Method	Energy only	Power Total (lb/ft s)	14.52	0.10

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	361.71	Element		
W.S. US. (ft)	361.38	E.G. Elev (ft)	361.08	360.33
Q Total (cfs)	334.00	W.S. Elev (ft)	360.09	360.26
Q Bridge (cfs)	334.00	Crit W.S. (ft)	360.09	355.38
Q Weir (cfs)		Max Chl Dpth (ft)	2.85	8.57
Weir Sta Lft (ft)		Vel Total (ft/s)	7.99	2.07
Weir Sta Rgt (ft)		Flow Area (sq ft)	41.81	161.09
Weir Submerg		Froude # Chl	1.00	0.15
Weir Max Depth (ft)		Specif Force (cu ft)	133.24	547.15
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	1.99	5.56
Min El Prs (ft)	368.19	W.P. Total (ft)	22.19	35.25
Delta EG (ft)	1.40	Conv. Total (cfs)	2369.4	16481.1
Delta WS (ft)	1.14	Top Width (ft)	20.97	28.95
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.13	3.56
BR Open Vel (ft/s)	7.99	C & E Loss (ft)	0.46	0.44
BR Sluice Coef		Shear Total (lb/sq ft)	2.34	0.12
BR Sel Method	Energy only	Power Total (lb/ft s)	18.67	0.24

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	363.78	Element		
W.S. US. (ft)	363.24	E.G. Elev (ft)	363.11	362.08
Q Total (cfs)	772.00	W.S. Elev (ft)	361.66	361.88
Q Bridge (cfs)	772.00	Crit W.S. (ft)	361.66	357.00
Q Weir (cfs)		Max Chl Dpth (ft)	4.42	10.19
Weir Sta Lft (ft)		Vel Total (ft/s)	9.65	3.50
Weir Sta Rgt (ft)		Flow Area (sq ft)	79.97	220.46
Weir Submerg		Froude # Chl	1.00	0.20
Weir Max Depth (ft)		Specif Force (cu ft)	376.34	917.33
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	2.90	4.60
Min El Prs (ft)	368.19	W.P. Total (ft)	29.51	55.82
Delta EG (ft)	1.75	Conv. Total (cfs)	5774.6	24951.4
Delta WS (ft)	1.42	Top Width (ft)	27.57	47.94
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.26	3.05
BR Open Vel (ft/s)	9.65	C & E Loss (ft)	0.62	0.62
BR Sluice Coef		Shear Total (lb/sq ft)	3.02	0.24
BR Sel Method	Energy only	Power Total (lb/ft s)	29.19	0.83

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	365.84	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	365.13	E.G. Elev (ft)	365.10	363.62
Q Total (cfs)	1391.00	W.S. Elev (ft)	363.09	363.17
Q Bridge (cfs)	1391.00	Crit W.S. (ft)	363.09	358.66
Q Weir (cfs)		Max Chl Dpth (ft)	5.85	11.48
Weir Sta Lft (ft)		Vel Total (ft/s)	11.36	4.88
Weir Sta Rgt (ft)		Flow Area (sq ft)	122.45	285.06
Weir Submerg		Froude # Chl	0.83	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	780.88	1386.38
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	3.92	5.69
Min El Prs (ft)	368.19	W.P. Total (ft)	34.78	60.49
Delta EG (ft)	2.31	Conv. Total (cfs)	10757.8	33822.8
Delta WS (ft)	2.05	Top Width (ft)	31.24	50.13
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.41	2.72
BR Open Vel (ft/s)	11.36	C & E Loss (ft)	0.78	0.70
BR Sluice Coef		Shear Total (lb/sq ft)	3.67	0.50
BR Sel Method	Energy only	Power Total (lb/ft s)	41.74	2.43

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	366.85	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	366.09	E.G. Elev (ft)	366.06	364.33
Q Total (cfs)	1736.00	W.S. Elev (ft)	363.75	363.74
Q Bridge (cfs)	1736.00	Crit W.S. (ft)	363.75	359.42
Q Weir (cfs)		Max Chl Dpth (ft)	6.51	12.05
Weir Sta Lft (ft)		Vel Total (ft/s)	12.06	5.53
Weir Sta Rgt (ft)		Flow Area (sq ft)	143.96	313.70
Weir Submerg		Froude # Chl	0.84	0.31
Weir Max Depth (ft)		Specif Force (cu ft)	1034.63	1656.72
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	4.23	6.26
Min El Prs (ft)	368.19	W.P. Total (ft)	38.40	61.64
Delta EG (ft)	2.62	Conv. Total (cfs)	13703.6	38181.8
Delta WS (ft)	2.45	Top Width (ft)	34.07	50.12
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.47	2.59
BR Open Vel (ft/s)	12.06	C & E Loss (ft)	0.86	0.73
BR Sluice Coef		Shear Total (lb/sq ft)	3.76	0.66
BR Sel Method	Energy only	Power Total (lb/ft s)	45.29	3.63

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than

1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	367.55	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	366.80	E.G. Elev (ft)	366.74	365.00
Q Total (cfs)	2002.00	W.S. Elev (ft)	364.28	364.32
Q Bridge (cfs)	2002.00	Crit W.S. (ft)	364.28	359.97
Q Weir (cfs)		Max Chl Dpth (ft)	7.04	12.63
Weir Sta Lft (ft)		Vel Total (ft/s)	12.27	5.84
Weir Sta Rgt (ft)		Flow Area (sq ft)	163.16	342.97
Weir Submerg		Froude # Chl	0.84	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	1240.48	1923.35
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	4.21	6.84
Min El Prs (ft)	368.19	W.P. Total (ft)	43.63	62.80
Delta EG (ft)	2.66	Conv. Total (cfs)	16222.9	42880.2
Delta WS (ft)	2.58	Top Width (ft)	38.73	50.12
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.48	2.47
BR Open Vel (ft/s)	12.27	C & E Loss (ft)	0.89	0.78
BR Sluice Coef		Shear Total (lb/sq ft)	3.56	0.74
BR Sel Method	Energy only	Power Total (lb/ft s)	43.63	4.34

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Plumtree

REACH: Plumtree RS: 4344

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01
603.8	375.23	612.54	376	624.11	376.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	369.78	.04	399.49	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
369.78 399.49 54.24 54.2 54.21 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	356	371.55	F
407	624.11	371.55	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4289

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.16	4.18	376.93	6.02	376.92	13.94	376.67	20.26	376.2
24.9	376.18	33.24	377.06	38.69	377.12	40.04	377.22	48.07	377.42
60.83	377.6	66.6	377.54	72.7	377.21	85.85	376	95.14	375.32
109.02	374.79	111.75	374.73	114.36	374.6	120.7	374.51	138.66	374
141.06	373.73	149.42	372.56	154.25	372	161.5	371.27	163.79	371.11
170.81	370	173.81	369.84	195.17	369.42	204.6	369.46	213.04	369.62
222.3	370	223.43	370.15	226.4	370.41	227.06	370.31	236.85	369.39
247.27	369.56	249.28	369.5	253.56	369.2	259.27	368.95	271.49	368
281.02	366	283.53	365.58	284.63	365.72	287.61	365.54	294.16	364
296.04	363.42	300.15	363.15	323.16	361.6	346.64	361.49	362.78	361.62
366.58	358.56	372.42	353.86	381.79	352.78	389.78	353.42	392.45	357.73
395.52	357.99	397.76	358.89	397.77	358.9	401.82	360.54	427.65	361.5
461.12	362.68	474.19	364	499.06	364.89	510.36	365.54	512.25	365.53
519.79	366	531.35	367.23	537.87	368	549.98	370	574.53	371.66
580.97	371.69	592.69	371.17	604.52	371.32				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	362.78	.04	401.82	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
362.78 401.82 104.83 104.42 103.52 .1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4185

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.48	9.2	369.89	11.88	369.82	17.34	369.84	34.57	369.3
53.84	368.42	59.13	368.23	62.34	368.17	68.09	368.17	70.92	368.38
76.7	368.52	81.21	368.71	88.53	369.21	100.23	369.08	113.03	368.39

```
  118.84  368.28  119.85  368.31  124.69  368.28  130.99  368.32  143.69  368.07
  174.23  367.24  184.05  366.87  189.65  366.83  193.83  366.87  199.74  366.51
  200.31  366.52  202.71  366.37  206.47     366  222.83  365.23  229.16   365.1
  237.63  364.59  245.34     364  270.04  362.83  279.56  362.32  284.22     362
  317.36  360.81  352.39  360.17  380.43  360.08  403.96  360.43  405.79  359.32
  407.94  358.02  410.35  357.61     417  355.97   420.8  354.77  430.79  360.87
   435.8  361.06  435.83  361.06  448.07  361.52  480.45   361.7  518.27  363.36
  531.33     364  532.88  364.19  543.89  364.64  551.51  365.01  553.39  365.05
  557.04   365.2  562.67  365.52  565.16  365.53  571.76  365.76  589.17  365.65
   601.4  365.75  611.19   365.7  613.71  365.74  619.92     366  625.24  366.72
   632.9  367.41  636.14  367.76  639.39     368  644.27  368.63  644.65  368.64
  646.39   368.9  647.36  368.89   650.3  369.29

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  403.96     .04  430.79    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        403.96  430.79           151.73  151.97  152.24             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4033

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  371.31    6.28  371.09    10.1  370.82   11.41  370.78   13.41  370.65
   16.07  370.59   24.34  370.14   26.91  370.09   30.53  370.19   38.94   370.2
   41.71  370.32   43.77  370.21   45.82     370   47.56  369.91   61.47  368.93
   64.73  368.91   74.46  369.43   84.71   369.4   87.19  369.59   93.43  369.89
   94.09  369.89    96.1     370   98.42   370.2  102.15  370.38  104.17   370.4
  106.65  370.37   110.1   370.2  112.15     370  115.71  369.82  128.08  369.81
  137.68   369.7  151.03  369.46  154.18  369.16  164.93  368.77  175.08  368.49
  185.11   368.1  190.59  367.77   192.4  367.74   209.8  366.53  222.55  365.72
  229.81  365.17  231.09  365.15  237.47  365.25  254.65  364.85  274.84     362
  281.46  361.45  311.04  360.26  324.61  359.69  324.63  359.69  327.57  359.56
  332.63  355.53   339.8  355.05  344.88  355.72  350.28  359.03  354.96  359.02
  354.99  359.02  368.82  358.97  388.87  359.13  402.39  358.88  463.03     360
  463.46  360.12   468.3  360.75  482.77     362  495.13  362.44  501.53  362.51
  509.75   362.5  519.32  362.16  523.42  362.13  524.98     362  532.66  361.82
  536.09  361.79  548.11  361.82  551.96     362   557.9  362.44  583.12   363.9
  596.37  364.95

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  327.57     .04  350.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        327.57  350.28           105.3  103.27  101.24             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3930

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  373.25    5.62  373.04   18.75  372.65   20.05  372.56   51.89  373.28
   67.22  372.62   75.52  372.21   81.21     372   82.89   371.8   83.35  371.81
  100.65  370.82  104.09  370.51  109.16     370   119.9  369.24   121.3  369.19
  125.83  369.28  143.55  369.25   145.3  369.37  145.92  369.31  149.12  369.58
  149.56  369.54  151.28  369.67  155.23  369.78  159.52  369.77  162.64  369.66
  165.16   369.5  170.48     369  173.88  368.53  174.87  368.43  177.64     368
  179.57  367.59  182.98  366.78  185.85     366  189.84  365.01  193.24     364
  205.26  362.99  232.35  361.15  264.16  359.45  274.41  358.31  274.42  358.31
  280.37  357.65  286.95  354.74  289.44  354.49  294.11  355.34  299.09  358.68
  305.18  358.74  305.19  358.74  321.51  358.88  353.18  358.92  436.87     360
  449.41     362  451.92  362.47  457.66  363.46  461.04     364  466.97  364.48
  469.66  364.48   474.3  364.61  476.21  364.58  476.86  364.61  477.78  364.59
  488.71  364.64  490.27  364.68  512.72  365.88  514.21     366  532.64     368
  542.86     370  544.26  370.23   546.1  370.43  549.88  370.48  552.59  370.59
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	280.37	.04	299.09	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

280.37	299.09	112.01	113.72	114.59	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
176	200.4	375	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
163.1	176	375

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3816

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	374.86	10.9	374	35.12	372	42.05	371.48	47.58	371.12
58.88	370.34	59.53	370.34	78.46	370.9	81.56	371.04	85.42	370.91
91.5	370.8	96.65	370.74	108.4	370.09	110.41	370	112.14	369.8
112.78	369.76	116.9	369.37	121.06	369	125.02	368.8	128.66	368.54
132.43	368.4	135.47	368.11	138.27	368.07	140.86	368.14	143.7	368.03
150.81	367.6	154.5	367.24	157.37	366.85	163.04	366	174.59	362.82
217.65	358.92	236.4	357.65	236.42	357.65	237.46	357.58	243.76	354.29
251.5	353.5	252.56	353.49	255.1	356.69	266.5	357.28	266.52	357.28
271.38	357.54	301.23	358.52	327.76	358.95	350.57	360	371.84	361.19
386.87	362	399.91	363.11	404.12	363.54	410.91	364.18	416.03	364.61
421.73	365	428.74	365.37	429.75	365.39	438.84	365.39	440.51	365.38
443.31	365.3	444.17	365.29	449.76	365.05	455.01	364.86	460.03	365.2
465.28	365.49	469.1	365.73	472.03	365.86	472.64	365.86	474.82	366.04
496.26	366.8	498.97	366.85	515.31	366.69	518.73	366.8	522.16	366.85
525.33	367.02	526.96	367.04	534.8	367.32	549.03	368	554.32	368.52

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	237.46	.04	255.1	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

237.46	255.1	128.5	127.87	127.21	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
173.5	186.9	375	F
373.3	445.4	375	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
142.2	173.5	375

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3688

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	367.19	12.07	367.61	20.74	367.88	33.44	368.3	35.81	368.34
36.91	368.35	38.51	368.3	41.9	368.05	42.34	368	46.49	367.62
57.82	366.07	58.06	366	58.98	365.89	59.73	365.86	61.35	365.74
62.76	365.59	63.36	365.54	64.65	365.39	65.31	365.33	65.53	365.3
68.14	364.99	69.06	364.94	77.78	365.17	78.29	365.12	78.87	365.13
79.51	365.14	81.34	364.92	81.98	364.92	82.64	364.91	84.22	364.72
85.27	364.68	87.32	364.44	87.96	364.4	91.82	364	92.71	363.94
94.56	363.8	107.05	361.62	112.03	361.62	156.44	357.41	156.46	357.41
166.74	356.43	170.56	353.16	171.46	352.86	179.43	353.24	182.46	356.86
186.46	357	186.47	357.01	203.22	357.63	227.7	358.5	256.67	360
261.88	360.34	264.57	360.54	271.14	360.98	283.16	361.89	284.48	362
293.32	363.31	295.65	363.6	300.63	364.22	302.93	364.48	304.51	364.65
310.25	365.25	317.77	366.05	320.57	366.39	321.8	366.52	324.49	366.86
328.15	367.23	329.94	367.46	331.84	367.65	332.96	367.78	334.64	368
343.14	368.38	353.94	368.67						

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  166.74     .04  182.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        166.74  182.46           137.67  137.99   138.3             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    72.5   108.3     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   309.8   338.6     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3550

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.59   21.83     366   22.15  365.93   22.36  365.91   22.65  365.88
   24.81  365.75   34.15  365.49   36.08  365.41   36.47  365.41   56.33  364.39
   62.74  364.35   64.54  364.35   78.24  364.86   78.82  364.87   80.11   364.9
   92.13  365.45   95.39  365.49   97.19  365.52   98.79  365.54  111.29  364.66
  113.06  364.51  113.63  364.52  115.75  364.34  116.17  364.34  118.14  364.18
  118.26  364.18  120.55     364  125.47  363.66  128.06  363.49  130.87  363.32
  133.62  363.17  137.86  362.93  141.25  362.78  142.84  362.67  144.42  362.54
  144.88  362.52  147.11   362.3   147.6  362.27  150.07     362  168.07  360.18
  202.08  358.28  222.67  356.22  222.69  356.22  229.29  355.55  231.57  353.11
  237.67  352.85  241.52  353.14  245.66  357.02   252.8  357.45  270.01   358.5
  299.86  361.08  320.94  363.87  322.12  363.98  326.43  364.47  335.31     366
  338.09  366.52  340.43  367.05  344.77     368  352.58  368.68  357.63  369.11
  363.94  369.54  366.26  369.71  370.89     370  376.06  370.55  378.66  370.84
  385.91   371.5  387.76   371.7  391.56     372  393.08  372.13  393.26  372.12
  394.51   372.2  396.42  372.27  400.73  372.39  401.46  372.38

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  222.67     .04  245.66    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        222.67  245.66           121.58  121.96  122.09             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     132   172.9     370       F
   358.4  401.46     375       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3428

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.25     .08  366.25     .21  366.24    2.49  366.31    5.55  366.33
     6.5  366.31    6.69   366.3    6.85  366.29    6.95  366.28    7.02  366.27
    7.07  366.26    7.09  366.26    7.37  366.14     7.5  366.11    7.73  366.11
    7.81     366   17.71  365.88   17.76  365.88   35.41  362.54   54.26  359.25
   71.12  356.77   71.14  356.77   72.75  356.53   82.67  355.38    85.4  352.15
   86.22  352.06   88.74  351.86   91.45  352.09   93.89  352.39   98.94  357.17
  101.38  357.43  121.79  359.59   156.9  362.39  164.18  363.89  164.43  364.14
  168.22  363.93  172.23  363.84   172.9  363.86     176  363.96   177.1     364
  178.13   364.1  190.23  365.12  198.83  365.85  199.59  365.91  200.67     366
   208.9  367.19  214.54     368  221.01  368.41  227.99  368.94  228.59  368.95
  229.18  368.96  244.28  369.43

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   82.67     .04   98.94    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         82.67   98.94           131.85  132.32  132.95             .1       .3
Ineffective Flow     num=       1
```

Sta L	Sta R	Elev	Permanent
31.2	57.1	370	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
7.4	31.2	370	207.8	224.4	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3296

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.04	7.44	368.25	8.57	368.2	13.73	368	15.86	367.86
16.24	367.82	20.57	367.48	24.23	367.01	30.3	366.41	32.66	366
34.91	365.82	36.33	365.68	37.74	365.56	39.57	365.37	40.92	365.29
43.15	365.29	43.9	365.26	57.19	365.22	65.98	364.57	67.12	364.52
74.19	364	78.97	363.56	80.16	363.45	86.96	362.83	90.65	362.47
94.56	362.11	95.89	362	97.9	362.2	98.84	362.19	107.93	362.58
109.64	362.69	113.85	362.82	117.37	362.83	135.78	361.77	153.23	361.58
168.24	361.26	168.8	361.63	178.91	362.18	192.98	358.61	195.06	357.92
201.72	355.69	204.53	352.08	205.68	351.83	208.07	351.91	210.45	351.72
213.06	352.1	214.14	351.94	214.68	352.11	218.9	356.65	223.16	358.34
225.56	358.53	225.57	358.53	241.1	359.76	252.96	359.64	253.63	359.34
274.2	360.14	298.22	360.84	338.52	362	345.28	362.49	349.83	362.8
358.24	363.42	360.55	363.61	366.27	364	376.16	364.76	381.02	365.1
384.43	365.36	386.5	365.49	387.73	365.58	388.62	365.62	390.74	365.78
391.33	365.8	393.98	366	397.53	366.12	401.29	366.23		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	195.06	.04	223.16	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
195.06	223.16	117.57	116.94	115.99	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3179

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.99	2.92	366.32	4.49	366	7.03	365.74	10.65	365.61
11.25	365.55	16.84	365.58	20.65	365.55	33.69	365.26	37.05	365.27
37.83	365.19	39.74	365.22	40.57	365.13	41.71	365.14	42.29	365.07
42.83	365.07	44.3	364.91	44.81	364.89	52.54	364.19	59.05	363.73
59.96	363.72	64.43	364	81.81	364.24	90.25	364.43	92.01	364.4
99.97	364	104.37	363.32	108.33	362.78	110.63	362.49	114.3	362.12
115.81	362	120.17	361.84	122.87	361.79	123.54	361.75	128	361.77
128.34	361.74	133.43	361.84	133.74	361.82	143.14	361.87	149.1	361.65
164.07	359.25	179.76	356.13	194.67	355.75	202.4	355.27	206.08	354.62
206.1	354.62	214.08	353.21	222.22	351.72	224.4	350.87	225.57	350.64
226.07	350.5	226.87	350.39	227.28	351.49	228.52	356.98	237.22	357.51
237.24	357.52	245.5	358.02	261.13	358.56	278.43	358.68	287.56	359.19
290.34	359.37	293.7	359.56	297.36	359.67	300.98	359.87	307.03	360
313.84	360.92	321.07	362	329.79	363.01	342	364.37	355.84	366
363.77	366.33	385.35	367.64	391.11	368.04	397.46	368.33		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	179.76	.04	228.52	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
179.76	228.52	101.1	102.24	103.14	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	63.2	370	F
80.2	98	370	F
277.5	332.8	370	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
98	149	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3077

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.18	1.12	364.15	2.53	364.12	3.97	364.1	8.56	364.2
8.98	364.2	10.31	364.25	11.19	364.24	13.14	364.15	13.5	364.12
14.57	364	18.43	363.88	21.38	363.78	24.61	363.74	33.92	363.48
39.77	363.33	48.31	362.93	50.98	362.82	61.21	362.37	63.02	362.31
70.2	362	74.59	361.6	77.1	361.43	82.58	360.97	83.28	360.94
95.42	360.41	99.21	360.31	103.01	360.23	103.64	360.21	104.52	360.13
105.54	360	107.69	359.58	114.03	358	134.95	356.4	140.36	356
163.01	355.01	179.63	355.11	193.39	354.95	204.81	355.12	210.64	354.59
210.65	354.59	217	354.02	219.69	351.67	221.67	350.95	222.49	350.87
223.8	350.87	226.26	350.75	228.21	350.72	229.11	350.89	230.73	354.07
234.33	355.41	241.4	355.41	250.01	355.42	265.82	356.22	283.13	356.64
290.94	357.97	293.37	357.99	293.48	358	295.67	358.42	300.65	359.3
303.5	359.83	304.53	360	320.68	361.37	322.55	361.51	328.44	362
330.19	362.24	341.42	364	344.14	364.6	349.88	366	354.73	367.09

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	204.81	.04	234.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204.81	234.33	99.64	98.98	98.39	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2978

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	362.91	26.14	362.3	28.29	362.14	29.8	362.2	30.23	362.16
30.97	362	35.23	361.59	35.47	361.59	37.04	361.43	37.26	361.43
38.5	361.3	38.73	361.31	45.76	360.54	80.82	360.96	102.15	360.38
114.55	360.01	118.88	359.77	161.71	358.87	229.91	358	230.71	357.16
236.45	357.02	243.79	356.29	243.81	356.29	245.02	356.16	250.07	353.33
252.35	352.96	254.47	350.89	255.74	350.56	257.29	350.63	259.41	350.68
261.6	350.53	263.18	350.69	263.71	350.84	265.48	354.05	274.04	355.2
274.05	355.2	275.87	355.44	297.22	357.18	316.25	361.84	320.6	362.22
347.97	363.14	347.98	363.82	352.13	364	360.46	364.7	368.43	365.33
374.4	365.77	378.19	366	379.71	366.15	380.66	366.19	383.79	366.08
384.49	366.11	386.36	366	389.31	365.95	390.69	366	391.27	366.26
391.59	366.47	398.39	367.21	402.86	368	410.75	370	415.21	370.52
417.39	370.39	425.64	370.89	432.78	372	437.01	373.28	442.02	374.48
446.02	375.38	448.25	375.83	449.28	376	451.72	376.13	455.64	376.24
456.7	376.24	472.15	376.84	479.93	377.06	491.12	376.37		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	245.02	.04	274.04	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.02	274.04	61.85	60.74	60.21	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
436.4	487.3	370	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
23.3	86.1	370	160.1	223.6	370	343	389	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2917

INPUT

Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84
653.46	371.06	662.64	371.32	668.42	372	676.66	372.58	679.51	372.87

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	440.02	.04	471.92	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
440.02	471.92	89.63	90.26	89.98	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	409.3	359.42	F
485.9	679.51	359.42	F

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 2900

INPUT
Description: Frederick Road
Distance from Upstream XS = 32
Deck/Roadway Width = 33
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 15

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	368.5		23	368		86	366	
146	364		200	362		259	360	
337.5	359.415		380.1	359.626		407.4	359.923	
427.3	360.169		456.8	360.827		563.7	363.651	
590	364		641	366		679.51	367	

Upstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84
653.46	371.06	662.64	371.32	668.42	372	676.66	372.58	679.51	372.87

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	440.02	.04	471.92	.075

Bank Sta: Left	Right	Coeff Contr.	Expan.
440.02	471.92	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	409.3	359.42	F
485.9	679.51	359.42	F

```
Downstream  Deck/Roadway Coordinates
    num=      13
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0     368              60     366              120     364
     174     362             234     360           312.1 359.415
   354.5 359.626           382.1 359.923           401.6 360.169
   431.7 360.827           538.1 363.651             556     364
     615     366

Downstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   369.6    2.79  369.53    7.15  369.53   11.31  369.26   13.16  369.19
   29.03  369.08   30.88     369    36.7  368.66   39.93  368.57   49.72  368.38
   60.81     368    70.9  367.78   72.58  367.64    82.8  367.42   83.97  367.32
   85.38  367.24   87.77  367.18  103.95  366.38  107.73  366.28   112.2     366
   120.8  365.91  127.85  365.89  128.36  365.86  135.62  365.86  136.08  365.83
  142.61  365.76  143.72  365.66  148.33  365.55  150.36  365.39  156.37  365.12
  167.42  364.81  172.69  364.56  182.09  364.16  185.28     364  191.33   363.8
  196.54  363.59  198.83  363.62   204.7  363.42  205.45  363.36   212.4  363.01
  219.55  362.54  226.48     362  235.55  361.62  255.36     360  265.66  359.25
  278.67  358.18  280.71     358  313.84  356.42  337.03  355.63  363.87     355
  377.78   354.9  391.73  354.54   400.8  353.95  402.55  353.74  411.94  352.62
  421.34  350.08  422.54     352  426.28  353.73  432.62   354.3  432.64  354.31
  432.77  354.32  441.96   355.6  462.76  357.08  477.11  359.05  499.49  362.25
  513.76  363.04  527.63     362  539.48  362.57  551.98  362.82  561.27  363.13
  572.05  363.79   574.3     364  591.29  364.92   612.3  365.73  623.32  366.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   400.8     .04  432.64    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         400.8  432.64            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  395.05  356.75       F
   445.1  623.32  356.75       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch    8.25   12.78
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 20    56.5     .024     .024        0                  .5                1
Upstream   Elevation =  350.33
           Centerline Station =  456
Downstream Elevation =  350.16
           Centerline Station =  421

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        194.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          4.19
  Q Barrel (cfs)            194.00    Culv Vel DS (ft/s)          4.06
  E.G. US. (ft)             354.70    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             354.47    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              354.48    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              354.23    Culv Exit Loss (ft)         0.00
  Delta EG (ft)               0.21    Culv Entr Loss (ft)         0.14
  Delta WS (ft)               0.24    Q Weir (cfs)
  E.G. IC (ft)              353.57    Weir Sta Lft (ft)
  E.G. OC (ft)              354.70    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        354.29    Weir Max Depth (ft)
  Culv WS Outlet (ft)       354.23    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         3.11    Weir Flow Area (sq ft)
```

Culv Crt Depth (ft)	2.27	Min El Weir Flow (ft)	359.43

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	295.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.42
Q Barrel (cfs)	295.00	Culv Vel DS (ft/s)	5.35
E.G. US. (ft)	355.67	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	355.42	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	355.15	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	354.88	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.52	Culv Entr Loss (ft)	0.23
Delta WS (ft)	0.54	Q Weir (cfs)	
E.G. IC (ft)	354.58	Weir Sta Lft (ft)	
E.G. OC (ft)	355.67	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	354.98	Weir Max Depth (ft)	
Culv WS Outlet (ft)	354.88	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.06	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.84	Min El Weir Flow (ft)	359.43

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	741.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.42
Q Barrel (cfs)	741.00	Culv Vel DS (ft/s)	11.05
E.G. US. (ft)	359.18	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	359.01	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	356.68	Culv Frctn Ls (ft)	0.84
W.S. DS (ft)	356.04	Culv Exit Loss (ft)	1.26
Delta EG (ft)	2.50	Culv Entr Loss (ft)	0.84
Delta WS (ft)	2.97	Q Weir (cfs)	
E.G. IC (ft)	358.48	Weir Sta Lft (ft)	
E.G. OC (ft)	359.18	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	356.65	Weir Max Depth (ft)	
Culv WS Outlet (ft)	356.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	4.94	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	899.47	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.13
Q Barrel (cfs)	899.47	Culv Vel DS (ft/s)	11.59
E.G. US. (ft)	360.76	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.58	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	357.76	Culv Frctn Ls (ft)	0.69
W.S. DS (ft)	357.25	Culv Exit Loss (ft)	1.58
Delta EG (ft)	3.01	Culv Entr Loss (ft)	0.96
Delta WS (ft)	3.33	Q Weir (cfs)	495.53
E.G. IC (ft)	360.71	Weir Sta Lft (ft)	236.70
E.G. OC (ft)	360.76	Weir Sta Rgt (ft)	453.61
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	357.87	Weir Max Depth (ft)	1.34
Culv WS Outlet (ft)	357.25	Weir Avg Depth (ft)	0.88
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	191.44
Culv Crt Depth (ft)	5.51	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	913.11	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.07
Q Barrel (cfs)	913.11	Culv Vel DS (ft/s)	11.30
E.G. US. (ft)	361.14	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.91	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.27	Culv Frctn Ls (ft)	0.10

W.S. DS (ft)	357.71	Culv Exit Loss (ft)	1.43
Delta EG (ft)	2.88	Culv Entr Loss (ft)	0.95
Delta WS (ft)	3.19	Q Weir (cfs)	851.89
E.G. IC (ft)	361.09	Weir Sta Lft (ft)	224.76
E.G. OC (ft)	361.14	Weir Sta Rgt (ft)	469.43
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.28	Weir Max Depth (ft)	1.75
Culv WS Outlet (ft)	357.71	Weir Avg Depth (ft)	1.16
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	284.98
Culv Crt Depth (ft)	5.57	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	911.47	Culv Full Len (ft)	26.43
# Barrels	1	Culv Vel US (ft/s)	10.89
Q Barrel (cfs)	911.47	Culv Vel DS (ft/s)	11.02
E.G. US. (ft)	361.52	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	361.24	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.75	Culv Frctn Ls (ft)	0.25
W.S. DS (ft)	358.17	Culv Exit Loss (ft)	1.31
Delta EG (ft)	2.77	Culv Entr Loss (ft)	0.92
Delta WS (ft)	3.07	Q Weir (cfs)	1245.53
E.G. IC (ft)	361.44	Weir Sta Lft (ft)	214.07
E.G. OC (ft)	361.52	Weir Sta Rgt (ft)	483.14
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.58	Weir Max Depth (ft)	2.11
Culv WS Outlet (ft)	358.17	Weir Avg Depth (ft)	1.40
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	378.03
Culv Crt Depth (ft)	5.57	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2827

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
400.8	432.64	59.3	67.61	75.81	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	395.05	356.75	F
445.1	623.32	356.75	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2759

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	372.77	2.31	372.75	3.21	372.76	3.79	372.7	5.35	372.51
10.05	372	17.86	370.67	21.54	370	22.94	369.68	29.73	368
38.04	366	41.31	365.14	46.41	364	49.98	363.37	58.32	362
62.31	361.29	70.12	360	83.48	358.75	88.76	358.48	93.5	358.22
94.45	358.15	97.16	358	128.47	356.25	137.97	356	166.97	354.77
188.46	354.27	206.85	354.18	213.44	353.14	217.92	353.75	217.94	353.75
221.54	354.24	229.72	353.68	232.16	349.32	242.11	350.03	244.47	353.83
247.97	353.92	254.64	354.1	273.96	354.9	288.2	354.55	327.4	356
337.32	356.54	361.29	357.92	361.9	358	364.26	358.17	365.41	358.24
367	358.37	372.78	358.74	375.31	358.81	388.46	358.79	394.15	358.8
397.84	358.95	400.41	358.96	402.23	359.06	404.53	359.21	405.49	359.23
408.57	359.48	408.95	359.49	411.45	359.7	411.87	359.72	415.03	359.99
415.31	360	417.03	360.2	418.39	360.3	428.8	360.31	433.64	360.4
438.69	360.56	442.82	360.73	450.11	361.09	466.87	362	474.25	362.98
481.02	364	491.61	366	492.4	366.16	501.24	368		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	229.72	.04	244.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
229.72	244.47	166.79	169.71	170.1	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.5	6.39	370	8.12	369.55	9.88	369.06	13.59	368
15.68	366.43	16.18	366	16.5	365.69	18.44	364	19.42	363
20.51	362	21.74	361.02	22.67	360	27.21	358.55	28.42	358.17
28.89	358	48.8	356	56.94	355.65	62.31	355.06	97.9	354.08
104.04	353.91	106.64	349.71	112.07	349.9	114.29	352	118.86	352.08
128.02	352.48	129.83	352.56	142.4	352.11	158.46	352.06	163.77	353.31
176.98	353.81	195.26	354.09	212.76	355.32	219.91	355.94	220.06	355.97
220.33	356	220.34	356	220.77	356.04	224.36	356.3	227.8	356.43
228.59	356.43	235.01	356.02	235.26	356	235.49	356	244.56	356.04
247.2	356.04	248.45	356.03	254.75	356.02	257.6	356.01	259.1	356
259.88	356.04	262.22	356.13	262.67	356.15	272.42	356.42	274.41	356.5
275.87	356.57	277.84	356.65	283.08	356.9	287.67	357.1	289.83	357.2
291	357.25	295.04	357.45	305.68	358	327.61	359.52	335.25	360
342.18	360.46	349.91	360.96	357.47	361.46	361.02	361.68		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	104.04	.04	114.29	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.04	114.29	102.11	104.17	106.57	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2485

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.38	4.47	368.19	8.54	368.03	9.3	368	11.37	367.71
12.69	367.6	12.97	367.59	21.49	367.83	21.72	367.79	24.75	367.98
24.78	367.97	25.94	368.02	27.18	368.02	28.49	367.97	29.82	367.87
30.25	367.77	31.68	367.58	33.56	367.26	35	366.85	38.23	366
38.64	365.88	39.08	365.73	41.93	364.86	44.58	364	51.26	362.13
51.81	362	52.07	361.95	53.08	361.71	59.58	360.24	60.5	360

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   66.26  358.56   68.19     358   79.86  356.07    80.2     356  108.17   354.1
  116.73   353.3  136.32  353.03  148.67  352.95   152.4  351.89   153.8  351.49
  156.31  351.59  159.04  352.43  164.74  351.94  168.76   349.2  174.15  349.34
  176.14  352.31  183.78  352.86  185.84  353.01  202.53  353.09  228.12  353.77
  242.58     354  243.08  354.08  268.03  355.47   271.1  355.65  276.88     356
  279.61  356.42  290.09     358   293.7  358.35  295.16  358.52  296.99  358.71
  299.04  359.06  299.15  359.06  301.56  358.95  310.74  358.55  311.53  358.57
  326.08     360  343.08     362  362.94  363.92  363.84     364  373.86  364.98
  379.95  365.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  164.74     .04  176.14    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        164.74  176.14            153.6  154.59  153.42             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2331

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.49    6.68  364.41    7.02   364.4   14.19  364.07   14.82  364.03
   15.07     364   20.81  363.68   24.25  363.45   29.07  363.13   39.92  362.46
   45.16  362.09   46.53     362   47.28  361.49   49.54     360   52.15   358.3
   52.62     358   55.48  356.39   56.22     356   57.41  355.85   63.81  354.98
   71.45  353.58   95.41  352.52  117.31   352.1  137.93  352.42  139.13  352.39
  143.89  352.26   149.2  348.51  154.15   348.1  159.57  348.42  163.74  351.17
  170.01  352.12  172.55   352.5   187.7  353.21  192.26  353.51  195.07     354
  218.88  355.98  218.91  355.98   219.4  355.99  219.65     356  241.82  357.49
  246.88  357.84  249.17     358  261.51  359.33   265.1  359.63  265.64  359.68
  269.31     360  281.07  361.43  286.16     362  288.44  362.36  288.85  362.43
  290.52  362.72  297.61     364  300.67  364.91  304.17     366  307.87  366.43
     309   366.5  310.22  366.57  314.29  366.95  316.04   367.1  316.75  367.15
  319.13  367.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  143.89     .04  163.74    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        143.89  163.74           179.37   177.6  175.87             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2153

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.32    3.92  364.56    4.01  364.56     8.3   364.3   12.46  364.04
   12.76  364.02   13.08     364   13.25  363.87   13.45  363.73   16.05     362
   16.68  361.53   18.91     360   20.77  358.61    21.6     358   21.89  357.75
   24.09     356   30.84  354.47   33.11     354   52.92  352.32   74.07  351.81
  101.65  351.28  120.22  351.43  120.23  351.43   120.5  351.43  127.63  349.88
  130.12  350.05  131.34  346.86     142  346.39  144.29  352.45  150.56  352.61
  153.23  352.68  168.08  353.97  172.88   354.8  182.71     356  183.66  356.09
  183.87  356.11  184.85  356.22  185.07  356.24  187.04  356.46  193.55  357.16
  200.75     358  212.41  359.89  213.06     360  217.64  360.89  223.61     362
  228.58  363.12  232.74     364  234.97  364.51  241.92     366  244.79  366.58
  251.21     368   256.5  369.43   258.4     370   259.7  370.42  264.45     372
  269.94  372.39  273.44  372.63

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  130.12     .04  144.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.12  144.29           160.15  158.75  157.04             .1       .3

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 1994

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.16	1.03	359.27	6.73	358.67	10.37	358.29	12.97	358
17.14	356.63	19	356	24.53	354.42	26.07	354	48.12	352.4
57.17	351.28	75.62	351.28	92.39	351.14	101.12	350.8	106.95	350.57
106.96	350.57	116.46	350.19	118.2	346.45	127.95	346.81	131.85	351.13
136.96	351.29	150.75	351.72	165.28	352.31	177.37	352.98	196.01	354
199.93	354.72	201.85	354.82	202.83	354.87	204.78	354.98	212.96	355.47
214.68	355.8	216.21	355.53	218.47	355.7	222.42	356	236.41	357.33
243.08	358	253.87	359.4	258.55	360	260.61	360.31	272.91	362
275.22	362.56	277.16	363.07	277.31	363.11				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	116.46	.04	131.85	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
116.46	131.85	108.1	106.05	103.75	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1888

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.32	3.66	359.97	3.97	359.97	9.29	359.12	9.61	359.1
10.06	359.05	11.3	358.9	12.39	358.76	16.42	358	26.85	356.12
27.4	356	44.51	354.47	49.85	354	68.2	352.46	81.53	351.35
104.16	350.46	120.73	349.86	122.9	349.65	122.92	349.65	129.91	349
132.99	345.73	137.07	345.92	142.97	349.5	150.38	349.68	153.97	350.05
163.02	350.99	180.43	351.29	195.81	351.74	212.9	353.83	217.47	354.81
227.64	355.42	283.48	356	287.69	356.35	288.71	356.43	290.19	356.54
297.25	357.04	307.21	357.78	310.66	358	311.09	358.05	315.51	358.54
318.4	358.88	320.31	359.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	129.91	.04	142.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
129.91	142.97	61.13	58.24	54.2	.3	.5

BRIDGE

RIVER: Plumtree
REACH: Plumtree RS: 1850

INPUT
Description: Private Bridge
Distance from Upstream XS = 18.5
Deck/Roadway Width = 16
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 8

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
3.66	359.97		81.5	359.87	357.87	101.7	360.452	358.452
126.6	360.865	358.865	153	360.835	358.835	175.1	360.491	358.491
201	360.491	358.491	320.31	359.1				

Upstream Bridge Cross Section Data
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.32	3.66	359.97	3.97	359.97	9.29	359.12	9.61	359.1
10.06	359.05	11.3	358.9	12.39	358.76	16.42	358	26.85	356.12
27.4	356	44.51	354.47	49.85	354	68.2	352.46	81.53	351.35
104.16	350.46	120.73	349.86	122.9	349.65	122.92	349.65	129.91	349
132.99	345.73	137.07	345.92	142.97	349.5	150.38	349.68	153.97	350.05

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  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        129.91  142.97             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  359.24            91.4 359.823 357.823   114.8 360.523 358.523
   139.8  360.92  358.92     165 360.892 358.892   189.6 360.465 358.465
   211.7 359.771 357.771

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.24    2.43  358.98    4.52  358.77    8.77  358.35   11.48  358.04
   11.83     358   17.63  357.39   27.59  356.34   30.83     356    31.3  355.95
   50.96     354   66.68  349.58   82.55  349.15    94.6  350.53  103.53  350.29
  110.77  348.95  112.07  348.71  119.64  348.74   131.1  348.28  134.38  346.61
  143.36  346.68  149.09  351.02  155.33  350.92  161.76  350.82  177.15  351.12
  196.32  351.55  209.07  352.05  209.56  359.76  230.29  360.75  314.46  356.32
     319  356.67  323.81  357.07  332.17  357.73  334.02  357.88  335.57     358
  340.94  358.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   131.1     .04  149.09    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         131.1  149.09             .3       .5

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)               350.59    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               350.34    E.G. Elev (ft)              350.52        350.40
  Q Total (cfs)               194.00    W.S. Elev (ft)              350.24        350.28
  Q Bridge (cfs)              194.00    Crit W.S. (ft)              348.85        348.91
  Q Weir (cfs)                          Max Chl Dpth (ft)             4.51          3.67
  Weir Sta Lft (ft)                     Vel Total (ft/s)              3.36          2.17
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            57.76         89.58
  Weir Submerg                          Froude # Chl                  0.43          0.25
  Weir Max Depth (ft)                   Specif Force (cu ft)        106.49        130.09
  Min El Weir Flow (ft)       359.11    Hydr Depth (ft)               1.26          1.94
  Min El Prs (ft)             358.87    W.P. Total (ft)              48.21         48.10
  Delta EG (ft)                 0.24    Conv. Total (cfs)           3211.9        4621.8
```

Delta WS (ft)	0.09	Top Width (ft)	45.71	46.13
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.36	C & E Loss (ft)	0.08	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.27	0.20
BR Sel Method	Energy only	Power Total (lb/ft s)	0.92	0.44

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	351.29	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	351.00	E.G. Elev (ft)	351.21	351.09
Q Total (cfs)	295.00	W.S. Elev (ft)	350.89	350.93
Q Bridge (cfs)	295.00	Crit W.S. (ft)	349.70	349.40
Q Weir (cfs)		Max Chl Dpth (ft)	5.16	4.32
Weir Sta Lft (ft)		Vel Total (ft/s)	3.11	2.33
Weir Sta Rgt (ft)		Flow Area (sq ft)	94.94	126.41
Weir Submerg		Froude # Chl	0.44	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	169.88	210.88
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.38	1.77
Min El Prs (ft)	358.87	W.P. Total (ft)	71.41	74.18
Delta EG (ft)	0.27	Conv. Total (cfs)	4862.5	6624.2
Delta WS (ft)	0.09	Top Width (ft)	68.87	71.27
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.11	C & E Loss (ft)	0.09	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.31	0.21
BR Sel Method	Energy only	Power Total (lb/ft s)	0.95	0.49

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	352.85	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	352.55	E.G. Elev (ft)	352.79	352.69
Q Total (cfs)	741.00	W.S. Elev (ft)	352.45	352.46
Q Bridge (cfs)	741.00	Crit W.S. (ft)	351.71	350.92
Q Weir (cfs)		Max Chl Dpth (ft)	6.72	5.85
Weir Sta Lft (ft)		Vel Total (ft/s)	2.86	2.58
Weir Sta Rgt (ft)		Flow Area (sq ft)	258.85	287.00
Weir Submerg		Froude # Chl	0.32	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	491.20	571.01
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	2.15	2.43
Min El Prs (ft)	358.87	W.P. Total (ft)	124.09	123.03
Delta EG (ft)	0.26	Conv. Total (cfs)	12672.8	15746.4
Delta WS (ft)	0.08	Top Width (ft)	120.34	118.06
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.86	C & E Loss (ft)	0.06	0.05
BR Sluice Coef		Shear Total (lb/sq ft)	0.45	0.32
BR Sel Method	Energy only	Power Total (lb/ft s)	1.27	0.83

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	354.15	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	353.80	E.G. Elev (ft)	354.07	353.98
Q Total (cfs)	1395.00	W.S. Elev (ft)	353.67	353.65
Q Bridge (cfs)	1395.00	Crit W.S. (ft)	352.64	352.13
Q Weir (cfs)		Max Chl Dpth (ft)	7.94	7.04
Weir Sta Lft (ft)		Vel Total (ft/s)	3.44	3.26
Weir Sta Rgt (ft)		Flow Area (sq ft)	405.74	427.57
Weir Submerg		Froude # Chl	0.32	0.31
Weir Max Depth (ft)		Specif Force (cu ft)	997.13	1098.38
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.38	3.62
Min El Prs (ft)	358.87	W.P. Total (ft)	126.54	125.41
Delta EG (ft)	0.29	Conv. Total (cfs)	22970.5	26502.1
Delta WS (ft)	0.13	Top Width (ft)	120.16	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	3.44	C & E Loss (ft)	0.03	0.07
BR Sluice Coef		Shear Total (lb/sq ft)	0.74	0.59
BR Sel Method	Energy only	Power Total (lb/ft s)	2.54	1.92

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	354.74	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.38	E.G. Elev (ft)	354.65	354.57
Q Total (cfs)	1765.00	W.S. Elev (ft)	354.21	354.18

Q Bridge (cfs)	1765.00	Crit W.S. (ft)	353.00	352.54
Q Weir (cfs)		Max Chl Dpth (ft)	8.48	7.57
Weir Sta Lft (ft)		Vel Total (ft/s)	3.76	3.61
Weir Sta Rgt (ft)		Flow Area (sq ft)	469.96	489.39
Weir Submerg		Froude # Chl	0.32	0.32
Weir Max Depth (ft)		Specif Force (cu ft)	1298.22	1406.78
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.91	4.15
Min El Prs (ft)	358.87	W.P. Total (ft)	127.61	126.46
Delta EG (ft)	0.32	Conv. Total (cfs)	28299.4	32018.7
Delta WS (ft)	0.18	Top Width (ft)	120.09	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.06
BR Open Vel (ft/s)	3.76	C & E Loss (ft)	0.03	0.09
BR Sluice Coef		Shear Total (lb/sq ft)	0.89	0.73
BR Sel Method	Energy only	Power Total (lb/ft s)	3.36	2.65

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	355.33	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.96	E.G. Elev (ft)	355.23	355.15
Q Total (cfs)	2157.00	W.S. Elev (ft)	354.74	354.70
Q Bridge (cfs)	2157.00	Crit W.S. (ft)	353.33	352.91
Q Weir (cfs)		Max Chl Dpth (ft)	9.01	8.09
Weir Sta Lft (ft)		Vel Total (ft/s)	4.04	3.91
Weir Sta Rgt (ft)		Flow Area (sq ft)	533.72	551.12
Weir Submerg		Froude # Chl	0.33	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	1639.89	1755.90
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	4.45	4.67
Min El Prs (ft)	358.87	W.P. Total (ft)	128.68	127.51
Delta EG (ft)	0.34	Conv. Total (cfs)	34036.2	37958.7
Delta WS (ft)	0.22	Top Width (ft)	120.01	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.06	0.06
BR Open Vel (ft/s)	4.04	C & E Loss (ft)	0.02	0.10
BR Sluice Coef		Shear Total (lb/sq ft)	1.04	0.87
BR Sel Method	Energy only	Power Total (lb/ft s)	4.20	3.41

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1830

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.1	149.09	183.1	189.46	194.94	.3	.5

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1641

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.1	4.25	358	4.42	357.95	4.44	357.94	5.13	357.91
5.87	357.89	19.69	357.39	35.1	356.79	40.55	356.56	48.51	356.22
50.1	356.16	53.65	356	83.2	353.06	108.43	350.69	126.88	349.28
127.65	348.68	128.6	347.92	138.1	348.36	140.07	345.19	146.51	345.53
151.14	349.6	158.59	349.89	158.6	349.89	162.23	350.02	178.14	350
203.35	350.65	232.7	352	242.28	353.59	244.74	354	245.26	354.15

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  247.65  354.81  250.51   355.6  252.04     356  253.98  356.59  258.69     358
  258.77  358.02  262.44  359.03     266     360   266.2  360.05  268.14  360.44
  269.28  360.66  271.48  361.07  272.68  361.28   273.3  361.39

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   138.1     .04  151.14    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         138.1  151.14           176.17  177.29  178.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1463

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  356.46    5.61  356.33   11.71  356.19   16.33  356.06   18.18  356.02
   18.32  356.02   18.54     356    21.8  355.67   22.14  355.65   22.36  355.64
   22.69   355.6   22.89  355.58   27.15  355.19   29.24  355.09   30.76  355.02
    40.4  354.87   40.86  354.85   41.76   354.8   42.75  354.73   52.82     354
   69.61  352.87   75.51  352.42   79.43  352.14   79.72  352.12   81.65     352
   84.43  351.86   90.72  351.56   92.09  351.48   94.79  351.34   97.19  351.19
  107.32  350.52   111.7  350.26  115.41     350  138.29   349.1  159.11   349.1
  178.46  349.47  180.13  349.17   185.3  348.24  187.99  347.08  189.19  343.45
  196.87  343.35  197.98  346.06  206.54  348.53  210.52  348.75  210.53  348.75
  221.24  349.34  234.53  349.78  266.44  352.56  278.62     358  283.38  359.43
  285.38     360     287  360.55  290.28  361.58  291.64     362  294.58  362.89
  295.91  363.28  296.57  363.47  298.25     364   302.9  365.77  303.51     366
  309.02  367.06  310.22  367.29  310.97  367.42  314.74     368  315.87  368.18
  323.73  369.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  180.13     .04  206.54    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        180.13  206.54           172.51  172.28  171.74             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1291

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  363.49     2.9  363.09   10.68  362.14   11.86     362   19.26  360.55
   22.08     360   26.38  358.97   30.59     358    34.4  357.21   38.91     356
   43.26  354.82   46.23  354.17   47.03     354   49.14  353.62   58.14     352
   66.85  350.97    70.1  350.58   71.43  350.42   75.07     350  108.53  348.38
  120.68  348.74  128.48  348.81  133.87  347.09   136.5  346.81  137.71   345.2
  141.95  344.89  151.53  345.15  155.49  348.28  157.84   348.3  161.16  349.47
  178.09  349.55  199.34  350.93  214.63   351.7   228.4  351.81  242.53  351.32
  264.66  350.52  286.44  349.15  310.41  348.72  338.21     349  371.72  348.77
   400.9  348.48   416.8  348.59  427.74  348.67  430.58  344.68   431.8  344.26
  436.65  344.85  441.26  344.51  442.29  347.58  447.46  349.08  448.01  349.24
  458.85  350.67   471.3  352.75  481.29  354.33  491.23  357.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  427.74     .04  447.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        427.74  447.46           167.7  167.44  166.86             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1124

INPUT
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Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	365.04	4.51	364.72	9.16	364.27	9.25	364.27	12.12	364
15.5	363.29	21.22	362	23.39	361.54	30.93	360	35.95	358.97
39.85	358.17	50.58	356	54.08	355.4	62.03	354	62.65	353.83
63.34	353.65	73.01	352.9	74.16	352.78	80.64	352	83.69	351.62
99.16	350	114.6	348.69	124.02	348.63	131.1	347.62	149.71	348.01
162.72	347.51	168.53	347.49	170.35	344.49	173.71	344.74	179.87	343.88
182.52	344.16	184.05	346.89	186.24	347	189.68	348.23	195.55	348.19
207	347.6	214.71	347.82	233.96	347.66	252.64	348.2	276.32	348.2
304.29	347.84	332.45	347.91	346.81	348.51	347.97	348.3	348	348.3
350.12	347.92	353.36	347.9	355.26	348.34	360.2	343.58	367.1	344.05
375.37	349.26	378.03	349.7	378.05	349.7	380.33	350.08	392.73	351.02
398.58	351.56	403.03	351.81	420.09	354	435.53	356	439.63	356.61
442.77	357.02	450.32	358	455.33	358.77	457.5	359.06	460.77	359.47
461.87	359.63	462.18	359.68	465.1	360	473.65	361.11	476.71	361.53
479.97	362	480.72	362.12	480.94	362.16	483.56	362.62		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	355.26	.04	375.37	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
355.26	375.37	134.05	129.91	125.5	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
8.7	60.7	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 994

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.1	9.62	358	14.71	356.95	19.8	356	30.42	354.45
33.38	354	36.49	353.7	54.6	352	57.99	351.76	59.66	351.64
70.88	350.84	72.94	350.7	82.85	350	114.72	348.11	135.81	347.8
150.43	347.49	170.48	346.43	171.74	343.41	176.87	342.99	186.86	344.33
188.91	347.54	212.62	347.3	226.74	347	231.31	347.32	247.53	347.69
256.13	347.8	270.71	347.72	281.14	348.11	284.5	347.5	286.04	347.21
292.04	347.03	296.33	343.73	302.06	343.28	306.33	342.85	309.85	346.99
314.78	348.42	315.81	348.64	315.83	348.64	320.17	349.59	333.26	350.57
351	352.36	364.37	354	373	355.3	375.39	355.67	377.77	356
383.23	356.87	390.35	358	393.92	358.56	397.2	359.05	403.45	360
407.85	360.84	413.86	362	417.04	362.66				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	281.14	.04	315.83	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
281.14	315.83	82.93	82.66	81.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 911

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	2.24	358.56	3.51	358.32	5.22	358	12.31	356.66
15.03	356.09	15.46	356	22.75	354.09	23.08	354	23.55	353.96
24.83	353.84	24.92	353.83	25.43	353.83	29.76	353.58	30	353.57
30.58	353.5	31.25	353.48	33.98	353.69	35.3	353.7	36.97	353.98
37.02	353.98	37.13	354	37.9	354.04	38.06	354.05	38.27	354.04
38.32	354.04	38.42	354.03	38.82	354	38.99	353.95	39.2	353.82
44.56	353.53	50.12	353.05	56.89	352.42	59.95	352.14	61.41	352
82.47	350.57	91.08	350	100.51	349.7	117.56	348.31	130.96	347.87
157.71	347.03	178.22	347.23	181.99	344.27	189.47	343.55	196.66	344.12
201.78	347.5	223.44	347.06	243.05	346.93	252.46	346.76	252.6	346.85
292.54	347.06	306.34	347.38	312.43	347.51	317.18	343.33	321.46	342.92

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   325.5  343.21  332.27  348.29  337.05     349  337.06     349  351.26  351.11
  381.21  355.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  312.43     .04  332.27    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        312.43  332.27           138.48  148.66  157.22             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 762

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  357.13    2.35  357.03    6.48  356.67    7.69  356.61    9.39  356.51
   14.41     356   19.83  355.44      21  355.32   22.74  355.12   32.28     354
   34.37   353.8   35.36  353.71   51.57  352.14   52.81  352.02   53.01     352
   61.67  351.41   65.26  351.17   67.97  350.99   73.71  350.62   76.99  350.42
   81.35  350.17   81.78  350.14   84.01  350.03   84.52     350   108.7  348.46
  145.52  346.99  169.46  347.05  186.24  347.42  197.19  345.22  199.28  343.68
  205.18   343.3  208.29  343.86  210.89  346.07  228.95  347.18  235.77   347.3
  240.55  347.28  244.65  347.26  244.66  347.26   252.8  347.23   257.6  343.09
  259.66  342.54  263.98  342.94   271.9  344.77  276.21  346.65  276.24  346.66
  276.97  346.98  298.22  347.67  328.56  347.99  360.33  351.01  370.76  351.97
  371.89     352   373.6  352.14  375.07  352.27  376.35   352.4  384.34  353.82
  384.65  353.87  384.83   353.9  384.94  353.92   385.3     354     392  355.62
  393.35     356  395.32   356.4  403.54     358  408.28  358.51  410.83  358.82
  411.55  358.82  412.84   358.8  416.14  358.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   252.8     .04  276.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         252.8  276.97           101.69  104.14  104.96             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   366.8   407.4     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 658

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  358.95    2.26  358.79     5.3  358.55    9.28   358.2   11.48     358
   14.26  357.65   16.66  357.36   20.41  356.87   26.22  356.16   35.44  355.02
   41.74  354.15   42.79     354   59.31   352.1    59.6  352.07   59.76  352.05
    60.3     352   70.49  351.39    76.4  351.02   86.06  350.44   92.55     350
  118.81     348  200.75  346.51  222.09  346.42  240.58  346.42  240.59  346.42
   245.1  346.43  248.95  343.16  255.63  340.34   262.8   340.2  267.31  342.59
  270.68  343.91  277.89  346.74  301.79  346.57  332.03  346.36  388.47  347.88
  391.63  347.92  394.29  347.92  394.49  347.91  400.05     348  401.61  348.21
  402.93   348.4  404.42  348.65   405.7  348.87  406.58  349.04  407.19  349.17
  412.03     350  415.92  350.98  417.72  351.13  418.47  351.21  420.03  351.39
  422.64  351.75  422.86  351.79  424.26     352  426.31  352.71  429.22  353.83
  429.43  353.91  429.85  354.09  434.45     356  442.51  357.75  442.83  357.83
  443.54     358  450.24  358.39  464.98  359.29  465.18  359.32  466.53  359.48
  470.64     360  471.72  360.06  477.88   360.4  481.52  360.61  490.37  361.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   245.1     .04  277.89    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         245.1  277.89           129.48  132.55  137.52             .1       .3

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 526

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.29	9.33	356.07	9.88	356	15.36	355.41	18.93	355.03
21	354.81	28.17	354	30.46	353.79	34.1	353.48	42.62	352.81
46.05	352.53	47.8	352.4	49.22	352.29	53.02	352	59.04	351.42
61.87	351.16	67.63	350.62	73.95	350	93.12	348.67	121.73	346.39
157.75	346.18	186.76	345.79	188.34	345.18	188.36	345.17	195.28	342.48
203.56	341.63	212.23	342.05	213.87	346.6	218.56	346.44	218.57	346.44
237.47	345.8	275.28	345.64	307.64	346.39	309.73	346.39	311.5	346.41
313.11	346.41	314.75	346.4	329.39	346.38	337.83	346.31	340.98	346.28
350.53	346.19	372.03	346	378.64	346.57	382.54	346.9	390.22	347.56
395.28	348	402.02	349.12	407.12	350	408.46	350.19	409.19	350.29
409.96	350.41	415.16	351.21	417.91	351.63	420.21	352	425.22	352.92
430.26	354	432.81	354.65	434.33	355	437.88	355.74	438.42	355.87
439.17	356	441.01	356.24	446.9	356.96	448.95	357.26	452.86	357.84
453.18	357.89	453.89	358	458.07	358.55	459.62	358.79	462.41	359.19
467.23	360	483.54	360.76						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.76	.04	213.87	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.76	213.87	143.66	145.78	147.57	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
443	476.3	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 380

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.67	.48	366.64	10.41	366	17.37	364.74	21.25	364
25.91	363.14	31.6	362	37.28	360.91	41.95	360	46.91	359.56
63.27	358	71.54	357.11	76.74	356.56	81.96	356	84.51	355.63
95.36	354	101.45	352.61	104.07	352	106.08	351.38	110.9	350
116.69	348.33	117.74	348	119.59	347.7	121.4	347.41	126.04	346.65
130	346	133.26	346.1	135.45	346.16	138.15	346.24	146.78	346.47
149.42	346.45	150.34	346.44	151.1	346.43	151.57	346.42	155.44	346.29
164.04	345.66	193.28	345.53	212.79	346.39	212.81	346.39	215.37	346.51
219.06	341.92	227.8	342.05	238.17	343.21	243.49	346.6	243.7	346.6
243.72	346.59	260.79	346.48	291.92	346.27	304.59	346	319.84	347.43
322.97	347.65	328.49	348	330.64	348.16	332.41	348.38	334.7	348.61
337.77	348.94	346.14	350	350.1	350.95	354.1	352	360.75	353.66
362.11	354	365.83	354.84	369.98	355.77	370.39	355.85	371.06	356
372.08	356.17	382.09	358	386.28	358.59	390.61	359.14		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.37	.04	243.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.37	243.7	235.8	234.15	232.25	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10	44.6	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 146

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
       0     359    6.37  358.83   15.88  358.07   16.47  358.02   16.84     358
   21.14  357.01   25.77     356   28.06   355.5   30.16  355.06   34.73  354.18
    35.2  354.08   35.66     354   37.68  353.72    38.1  353.66    41.6  353.18
   44.05  352.85   45.88  352.61   50.58  352.01   50.71     352    52.8  351.88
   60.34   351.5   61.05  351.44    66.3  351.17    67.3  351.09   70.18  350.94
   72.76  350.72   76.24  350.54   81.27     350  100.43  348.85  105.06  348.54
  115.51     348  138.29   346.9  181.73  345.23  210.07  344.41  210.09  344.41
  215.13  344.26  220.35  341.19  225.41  340.73  231.22  340.96  236.01  344.28
  240.33  344.79  253.16  346.33  258.95  349.49  260.11  349.59  263.96  350.56
  267.35     352   269.7  353.13  271.51     354  273.55  355.07  275.21     356
  277.09  356.89  279.29     358  283.62  359.32   285.5  359.78  286.47     360
  291.06   360.4  294.96  360.73  299.25  361.08  301.38  361.31  304.13  361.54
  306.53  361.84  306.74  361.86  307.86     362  314.98  363.37   318.1     364
  325.64  365.64  327.27     366  335.18  367.64  336.93     368  339.58  368.18
  343.85  368.49  346.34  368.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  215.13     .04  236.01    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        215.13  236.01            88.09   82.88   77.62             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    15.2    56.5     365   296.2     338     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 63

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     354    7.34  353.26   12.41  352.73   16.79  352.29    19.4     352
    27.1  350.79   31.84     350   38.59  349.24   50.74     348   57.78  347.37
   58.67  347.29   60.21  347.18   62.82  346.94   66.66  346.68   68.29  346.54
   76.91     346   79.38  345.88   79.63  345.86      80  345.83   80.68  345.78
   83.85  345.58   87.55  345.35  103.02     344  108.36  342.62  114.01     342
  118.01     340  138.02     340  142.02     342   147.2  343.25  150.03     344
  151.66  344.32  153.16  344.61  153.93  344.74   155.1  344.92  156.66   345.2
  158.34  345.42  159.11  345.56  160.97  345.74  161.25  345.79   163.2  345.94
  163.62     346  170.72     346  174.59  346.47  175.77  346.56  176.48  346.66
  177.66  346.84  178.56  346.94  180.57  347.23  181.89   347.4   182.5  347.49
  185.96     348  187.92  348.58  193.03     350   195.4  350.82  198.31     352
  201.23  353.21  203.77     354   207.9  355.67  208.87     356  212.01  357.21
  214.25     358  216.21  358.46  223.24     360  225.85  360.29   227.5  360.52
  231.62  361.04  238.04     362  248.29  363.79  249.46     364  253.46   364.5
  253.68  364.53

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  103.02     .04  150.03    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        103.02  150.03               0       0       0             .1       .3



SUMMARY OF MANNING'S N VALUES

River:Plumtree

      Reach          River Sta.       n1        n2        n3

 Plumtree             10286            .085       .04      .085
 Plumtree             10044            .085       .04      .085
 Plumtree             9814             .085       .04      .085
 Plumtree             9762             .085       .04      .085
 Plumtree             9732             .075       .04      .075
 Plumtree             9650          Culvert
 Plumtree             9589             .075       .04      .075
 Plumtree             9499             .075       .04      .075
 Plumtree             9398             .085       .04      .085
 Plumtree             9301             .085       .04      .085
 Plumtree             9196             .085       .04      .085
 Plumtree             8987             .085       .04      .085
```

Plumtree	8753	.065	.04	.085
Plumtree	8579	.075	.04	.085
Plumtree	8374	.075	.04	.085
Plumtree	8229	.075	.04	.085
Plumtree	8094	.075	.04	.085
Plumtree	7954	.075	.04	.085
Plumtree	7800	.075	.04	.085
Plumtree	7548	.075	.04	.085
Plumtree	7367	.075	.04	.075
Plumtree	7216	.075	.04	.075
Plumtree	7030	.075	.04	.075
Plumtree	6893	.075	.04	.075
Plumtree	6766	.075	.04	.075
Plumtree	6663	.075	.04	.075
Plumtree	6568	.075	.04	.075
Plumtree	6454	.075	.04	.075
Plumtree	6350	.075	.04	.075
Plumtree	6296	.075	.04	.075
Plumtree	6250	Culvert		
Plumtree	6197	.075	.04	.075
Plumtree	6122	.075	.04	.075
Plumtree	6028	.075	.04	.075
Plumtree	5926	.075	.04	.075
Plumtree	5824	.075	.04	.075
Plumtree	5745	.075	.04	.075
Plumtree	5711	.075	.04	.075
Plumtree	5650	Culvert		
Plumtree	5614	.075	.04	.075
Plumtree	5560	.075	.04	.075
Plumtree	5510	.075	.04	.075
Plumtree	5500	Bridge		
Plumtree	5474	.075	.04	.075
Plumtree	5419	.075	.04	.075
Plumtree	5323	.075	.04	.075
Plumtree	5209	.075	.04	.075
Plumtree	5107	.075	.04	.075
Plumtree	5040	.075	.04	.075
Plumtree	5000	Culvert		
Plumtree	4932	.075	.04	.075
Plumtree	4845	.075	.04	.075
Plumtree	4745	.075	.04	.075
Plumtree	4636	.075	.04	.075
Plumtree	4550	.075	.04	.075
Plumtree	4400	Bridge		
Plumtree	4344	.075	.04	.075
Plumtree	4289	.075	.04	.075
Plumtree	4185	.075	.04	.075
Plumtree	4033	.075	.04	.075
Plumtree	3930	.075	.04	.075
Plumtree	3816	.075	.04	.075
Plumtree	3688	.075	.04	.075
Plumtree	3550	.075	.04	.075
Plumtree	3428	.075	.04	.075
Plumtree	3296	.075	.04	.075
Plumtree	3179	.075	.04	.075
Plumtree	3077	.075	.04	.075
Plumtree	2978	.075	.04	.075
Plumtree	2917	.075	.04	.075
Plumtree	2900	Culvert		
Plumtree	2827	.075	.04	.075
Plumtree	2759	.075	.04	.075
Plumtree	2589	.075	.04	.075
Plumtree	2485	.075	.04	.075
Plumtree	2331	.075	.04	.075
Plumtree	2153	.075	.04	.075
Plumtree	1994	.075	.04	.075
Plumtree	1888	.075	.04	.075
Plumtree	1850	Bridge		
Plumtree	1830	.075	.04	.075
Plumtree	1641	.075	.04	.075
Plumtree	1463	.075	.04	.075
Plumtree	1291	.075	.04	.075
Plumtree	1124	.075	.04	.075
Plumtree	994	.075	.04	.075
Plumtree	911	.075	.04	.075
Plumtree	762	.075	.04	.075
Plumtree	658	.075	.04	.075
Plumtree	526	.075	.04	.075
Plumtree	380	.075	.04	.075

Plumtree	146	.075	.04	.075
Plumtree	63	.075	.04	.075

SUMMARY OF REACH LENGTHS

River: Plumtree

Reach	River Sta.	Left	Channel	Right
Plumtree	10286	240.46	241.25	237.2
Plumtree	10044	233.9	230.57	222.97
Plumtree	9814	52.19	51.52	50.85
Plumtree	9762	32.64	30.09	27.57
Plumtree	9732	145.71	143.47	141.55
Plumtree	9650	Culvert		
Plumtree	9589	74.95	89.37	103.36
Plumtree	9499	98.65	101.8	104.92
Plumtree	9398	97.24	96.47	94.54
Plumtree	9301	109.84	105	100.42
Plumtree	9196	197.07	208.89	195.59
Plumtree	8987	233.38	233.77	226.61
Plumtree	8753	178.41	174.76	168.62
Plumtree	8579	198.29	204.23	206.04
Plumtree	8374	144.9	145.45	146.03
Plumtree	8229	135.27	135.16	134.66
Plumtree	8094	138.21	139.81	140.01
Plumtree	7954	155.28	153.64	152.99
Plumtree	7800	252.37	252.82	252.55
Plumtree	7548	174.12	180.41	186.79
Plumtree	7367	143.37	150.84	157.8
Plumtree	7216	190.28	186.42	181.46
Plumtree	7030	140.13	137.19	133.92
Plumtree	6893	124.46	126.53	128.02
Plumtree	6766	103.31	103.53	104.46
Plumtree	6663	90.58	94.53	97.72
Plumtree	6568	112.95	114.27	115.74
Plumtree	6454	102.69	103.78	104.74
Plumtree	6350	52.33	53.78	55.24
Plumtree	6296	98.47	99.02	99.58
Plumtree	6250	Culvert		
Plumtree	6197	75.78	74.81	73.83
Plumtree	6122	98.18	94.21	91.92
Plumtree	6028	100.93	101.91	101.19
Plumtree	5926	102.11	102.54	102.93
Plumtree	5824	75.62	79.21	82.75
Plumtree	5745	34.07	34.02	34.04
Plumtree	5711	96.24	96.18	98.71
Plumtree	5650	Culvert		
Plumtree	5614	60.47	54.67	45.26
Plumtree	5560	56.62	49.74	41.3
Plumtree	5510	36.56	36.42	38.18
Plumtree	5500	Bridge		
Plumtree	5474	54.4	54.86	54.94
Plumtree	5419	93.04	95.36	97.65
Plumtree	5323	116.69	114.31	111.9
Plumtree	5209	111.42	101.59	91.47
Plumtree	5107	67.29	67.07	66.86
Plumtree	5040	104.82	108.2	107.53
Plumtree	5000	Culvert		
Plumtree	4932	86.54	87.15	87.5
Plumtree	4845	89.54	100.49	110.66
Plumtree	4745	111.08	108.67	106.25
Plumtree	4636	90.09	85.72	81.01
Plumtree	4550	205.67	206.54	206.28
Plumtree	4400	Bridge		
Plumtree	4344	54.24	54.2	54.21
Plumtree	4289	104.83	104.42	103.52
Plumtree	4185	151.73	151.97	152.24
Plumtree	4033	105.3	103.27	101.24
Plumtree	3930	112.01	113.72	114.59
Plumtree	3816	128.5	127.87	127.21
Plumtree	3688	137.67	137.99	138.3
Plumtree	3550	121.58	121.96	122.09
Plumtree	3428	131.85	132.32	132.95
Plumtree	3296	117.57	116.94	115.99
Plumtree	3179	101.1	102.24	103.14

Plumtree	3077	99.64	98.98	98.39
Plumtree	2978	61.85	60.74	60.21
Plumtree	2917	89.63	90.26	89.98
Plumtree	2900	Culvert		
Plumtree	2827	59.3	67.61	75.81
Plumtree	2759	166.79	169.71	170.1
Plumtree	2589	102.11	104.17	106.57
Plumtree	2485	153.6	154.59	153.42
Plumtree	2331	179.37	177.6	175.87
Plumtree	2153	160.15	158.75	157.04
Plumtree	1994	108.1	106.05	103.75
Plumtree	1888	61.13	58.24	54.2
Plumtree	1850	Bridge		
Plumtree	1830	183.1	189.46	194.94
Plumtree	1641	176.17	177.29	178.52
Plumtree	1463	172.51	172.28	171.74
Plumtree	1291	167.7	167.44	166.86
Plumtree	1124	134.05	129.91	125.5
Plumtree	994	82.93	82.66	81.8
Plumtree	911	138.48	148.66	157.22
Plumtree	762	101.69	104.14	104.96
Plumtree	658	129.48	132.55	137.52
Plumtree	526	143.66	145.78	147.57
Plumtree	380	235.8	234.15	232.25
Plumtree	146	88.09	82.88	77.62
Plumtree	63	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Plumtree

Reach	River Sta.	Contr.	Expan.
Plumtree	10286	.1	.3
Plumtree	10044	.1	.3
Plumtree	9814	.1	.3
Plumtree	9762	.1	.3
Plumtree	9732	.3	.5
Plumtree	9650	Culvert	
Plumtree	9589	.3	.5
Plumtree	9499	.1	.3
Plumtree	9398	.1	.3
Plumtree	9301	.1	.3
Plumtree	9196	.1	.3
Plumtree	8987	.1	.3
Plumtree	8753	.1	.3
Plumtree	8579	.1	.3
Plumtree	8374	.1	.3
Plumtree	8229	.1	.3
Plumtree	8094	.1	.3
Plumtree	7954	.1	.3
Plumtree	7800	.1	.3
Plumtree	7548	.1	.3
Plumtree	7367	.1	.3
Plumtree	7216	.1	.3
Plumtree	7030	.1	.3
Plumtree	6893	.1	.3
Plumtree	6766	.1	.3
Plumtree	6663	.1	.3
Plumtree	6568	.1	.3
Plumtree	6454	.1	.3
Plumtree	6350	.1	.3
Plumtree	6296	.3	.5
Plumtree	6250	Culvert	
Plumtree	6197	.3	.5
Plumtree	6122	.1	.3
Plumtree	6028	.1	.3
Plumtree	5926	.1	.3
Plumtree	5824	.1	.3
Plumtree	5745	.1	.3
Plumtree	5711	.3	.5
Plumtree	5650	Culvert	
Plumtree	5614	.3	.5
Plumtree	5560	.1	.3
Plumtree	5510	.3	.5
Plumtree	5500	Bridge	

Plumtree	5474		.3	.5
Plumtree	5419		.1	.3
Plumtree	5323		.1	.3
Plumtree	5209		.1	.3
Plumtree	5107		.1	.3
Plumtree	5040		.3	.5
Plumtree	5000	Culvert		
Plumtree	4932		.3	.5
Plumtree	4845		.1	.3
Plumtree	4745		.1	.3
Plumtree	4636		.1	.3
Plumtree	4550		.3	.5
Plumtree	4400	Bridge		
Plumtree	4344		.3	.5
Plumtree	4289		.1	.3
Plumtree	4185		.1	.3
Plumtree	4033		.1	.3
Plumtree	3930		.1	.3
Plumtree	3816		.1	.3
Plumtree	3688		.1	.3
Plumtree	3550		.1	.3
Plumtree	3428		.1	.3
Plumtree	3296		.1	.3
Plumtree	3179		.1	.3
Plumtree	3077		.1	.3
Plumtree	2978		.1	.3
Plumtree	2917		.3	.5
Plumtree	2900	Culvert		
Plumtree	2827		.3	.5
Plumtree	2759		.1	.3
Plumtree	2589		.1	.3
Plumtree	2485		.1	.3
Plumtree	2331		.1	.3
Plumtree	2153		.1	.3
Plumtree	1994		.1	.3
Plumtree	1888		.3	.5
Plumtree	1850	Bridge		
Plumtree	1830		.3	.5
Plumtree	1641		.1	.3
Plumtree	1463		.1	.3
Plumtree	1291		.1	.3
Plumtree	1124		.1	.3
Plumtree	994		.1	.3
Plumtree	911		.1	.3
Plumtree	762		.1	.3
Plumtree	658		.1	.3
Plumtree	526		.1	.3
Plumtree	380		.1	.3
Plumtree	146		.1	.3
Plumtree	63		.1	.3

HEC-RAS Plan: A River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	10286	1-YR	223.00	395.09	396.81	396.59	396.90	0.008138	3.23	121.42	150.01	0.58
Plumtree	10286	2-YR	307.00	395.09	396.98	396.60	397.10	0.008539	3.69	147.05	154.15	0.62
Plumtree	10286	10-YR	596.00	395.09	397.61	396.95	397.76	0.006496	4.33	248.53	169.55	0.58
Plumtree	10286	50-YR	995.00	395.09	398.01	397.34	398.27	0.008537	5.71	319.43	179.33	0.69
Plumtree	10286	100-YR	1200.00	395.09	398.12	397.51	398.46	0.010361	6.50	338.93	180.10	0.76
Plumtree	10286	7-30-2016	1333.00	395.09	398.20	397.62	398.58	0.011255	6.93	353.34	180.66	0.80
Plumtree	10044	1-YR	223.00	392.49	394.38	394.17	394.55	0.012033	4.01	95.57	160.05	0.71
Plumtree	10044	2-YR	307.00	392.49	394.57	394.26	394.76	0.011181	4.31	128.56	181.74	0.71
Plumtree	10044	10-YR	596.00	392.49	394.81	394.81	395.21	0.019905	6.42	174.65	200.40	0.97
Plumtree	10044	50-YR	995.00	392.49	395.39		395.77	0.013023	6.57	298.66	234.36	0.83
Plumtree	10044	100-YR	1200.00	392.49	395.74		396.07	0.009631	6.31	384.50	255.68	0.73
Plumtree	10044	7-30-2016	1333.00	392.49	395.95		396.26	0.008317	6.22	439.55	268.46	0.69
Plumtree	9814	1-YR	223.00	388.76	391.65	391.32	391.94	0.010722	4.30	51.91	43.53	0.69
Plumtree	9814	2-YR	307.00	388.76	392.01	391.61	392.32	0.010098	4.47	68.69	52.14	0.69
Plumtree	9814	10-YR	596.00	388.76	393.97	392.33	394.04	0.000995	2.52	424.51	272.22	0.25
Plumtree	9814	50-YR	995.00	388.76	395.24	393.16	395.30	0.000598	2.45	789.29	304.39	0.20
Plumtree	9814	100-YR	1200.00	388.76	395.55	393.38	395.62	0.000647	2.66	886.02	315.10	0.21
Plumtree	9814	7-30-2016	1333.00	388.76	395.75	393.50	395.82	0.000664	2.77	948.65	317.79	0.22
Plumtree	9762	1-YR	223.00	388.00	390.84		391.29	0.014433	5.36	41.63	30.27	0.81
Plumtree	9762	2-YR	307.00	388.00	391.35	390.95	391.76	0.011221	5.15	64.36	69.09	0.73
Plumtree	9762	10-YR	596.00	388.00	393.94		394.00	0.000648	2.21	479.19	228.01	0.20
Plumtree	9762	50-YR	995.00	388.00	395.21		395.27	0.000538	2.45	796.83	286.90	0.19
Plumtree	9762	100-YR	1200.00	388.00	395.52		395.59	0.000598	2.69	890.46	322.87	0.21
Plumtree	9762	7-30-2016	1333.00	388.00	395.71		395.79	0.000658	2.89	954.17	331.68	0.22
Plumtree	9732	1-YR	223.00	387.00	390.89	389.66	391.03	0.002737	3.09	72.07	34.50	0.38
Plumtree	9732	2-YR	307.00	387.00	391.35	389.99	391.54	0.002877	3.45	88.96	37.49	0.39
Plumtree	9732	10-YR	596.00	387.00	393.80	390.90	393.96	0.000990	3.21	193.79	166.87	0.26
Plumtree	9732	50-YR	995.00	387.00	395.11	391.80	395.24	0.000765	3.32	527.11	223.95	0.24
Plumtree	9732	100-YR	1200.00	387.00	395.40	392.18	395.56	0.000880	3.68	593.49	235.24	0.26
Plumtree	9732	7-30-2016	1333.00	387.00	395.59	392.40	395.76	0.000934	3.86	638.82	241.96	0.27
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	223.00	386.27	389.31	388.43	389.52	0.004152	3.67	61.60	35.83	0.46
Plumtree	9589	2-YR	307.00	386.27	389.99	388.79	390.20	0.002856	3.72	85.70	43.20	0.40
Plumtree	9589	10-YR	596.00	386.27	391.04	389.65	391.43	0.003384	5.07	123.56	63.32	0.47
Plumtree	9589	50-YR	995.00	386.27	392.07	390.53	392.59	0.003515	6.09	227.25	135.97	0.50
Plumtree	9589	100-YR	1200.00	386.27	392.60	390.93	393.12	0.003223	6.26	327.48	245.13	0.48
Plumtree	9589	7-30-2016	1333.00	386.27	392.89	391.32	393.38	0.002996	6.26	402.44	267.37	0.47
Plumtree	9499	1-YR	204.00	385.35	388.97		389.15	0.003898	3.51	70.65	50.97	0.44
Plumtree	9499	2-YR	321.00	385.35	389.75		389.92	0.002934	3.58	125.38	124.78	0.40
Plumtree	9499	10-YR	719.00	385.35	390.88		391.08	0.002582	4.32	294.26	158.77	0.40
Plumtree	9499	50-YR	1263.00	385.35	391.97		392.20	0.002314	4.88	474.75	171.09	0.40
Plumtree	9499	100-YR	1578.00	385.35	392.51		392.74	0.002216	5.13	567.74	175.97	0.40
Plumtree	9499	7-30-2016	1757.00	385.35	392.79		393.03	0.002177	5.27	617.40	178.49	0.40
Plumtree	9398	1-YR	204.00	384.42	388.37		388.70	0.004701	4.54	44.89	15.87	0.48
Plumtree	9398	2-YR	321.00	384.42	388.92	387.78	389.45	0.006779	5.86	65.41	97.70	0.58
Plumtree	9398	10-YR	719.00	384.42	390.45		390.76	0.003626	5.57	289.42	167.13	0.45
Plumtree	9398	50-YR	1263.00	384.42	391.67		391.93	0.002885	5.79	503.70	182.79	0.42
Plumtree	9398	100-YR	1578.00	384.42	392.22		392.49	0.002794	6.05	606.79	192.69	0.42
Plumtree	9398	7-30-2016	1757.00	384.42	392.51		392.78	0.002729	6.16	664.04	196.97	0.42
Plumtree	9301	1-YR	204.00	383.31	388.11		388.33	0.002680	3.80	62.04	32.60	0.37
Plumtree	9301	2-YR	321.00	383.31	388.50		388.89	0.004323	5.16	81.35	69.83	0.48
Plumtree	9301	10-YR	719.00	383.31	389.23	389.18	390.17	0.009143	8.49	142.78	91.28	0.72
Plumtree	9301	50-YR	1263.00	383.31	390.17	390.17	391.36	0.010478	10.35	232.10	100.36	0.80
Plumtree	9301	100-YR	1578.00	383.31	390.59	390.59	391.91	0.011035	11.19	275.72	104.50	0.83
Plumtree	9301	7-30-2016	1757.00	383.31	390.79	390.79	392.19	0.011514	11.69	296.68	106.44	0.85
Plumtree	9196	1-YR	204.00	383.81	387.40	387.40	387.81	0.010238	5.48	61.09	107.80	0.69
Plumtree	9196	2-YR	321.00	383.81	387.74	387.73	388.20	0.010946	6.21	99.99	121.59	0.73
Plumtree	9196	10-YR	719.00	383.81	388.82		389.17	0.006723	6.33	246.23	143.82	0.61
Plumtree	9196	50-YR	1263.00	383.81	389.79	389.01	390.16	0.005917	7.03	390.74	154.81	0.60
Plumtree	9196	100-YR	1578.00	383.81	390.24	389.28	390.64	0.005766	7.42	461.97	159.38	0.60
Plumtree	9196	7-30-2016	1757.00	383.81	390.48	389.44	390.89	0.005701	7.62	500.52	161.92	0.60
Plumtree	8987	1-YR	204.00	382.77	386.54	385.23	386.67	0.002345	3.34	119.75	115.30	0.34
Plumtree	8987	2-YR	321.00	382.77	387.00		387.15	0.002549	3.84	174.45	121.03	0.37
Plumtree	8987	10-YR	719.00	382.77	387.95		388.19	0.003433	5.25	295.29	132.81	0.44
Plumtree	8987	50-YR	1263.00	382.77	388.79		389.13	0.004364	6.66	410.83	141.71	0.52
Plumtree	8987	100-YR	1578.00	382.77	389.19		389.58	0.004762	7.31	467.81	145.45	0.54
Plumtree	8987	7-30-2016	1757.00	382.77	389.40		389.82	0.004958	7.64	498.21	147.40	0.56

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	8753	1-YR	204.00	381.99	385.24	385.24	385.66	0.009692	5.85	60.16	79.52	0.66
Plumtree	8753	2-YR	321.00	381.99	385.62	385.55	386.06	0.010043	6.55	91.63	87.32	0.69
Plumtree	8753	10-YR	719.00	381.99	386.73		387.08	0.006968	6.81	225.01	174.86	0.61
Plumtree	8753	50-YR	1263.00	381.99	387.83		388.07	0.004512	6.46	448.27	231.04	0.51
Plumtree	8753	100-YR	1578.00	381.99	388.33		388.55	0.003768	6.29	569.25	245.93	0.47
Plumtree	8753	7-30-2016	1757.00	381.99	388.59		388.80	0.003460	6.22	634.06	251.24	0.46
Plumtree	8579	1-YR	204.00	381.13	384.21	383.48	384.40	0.004728	4.12	88.21	90.48	0.48
Plumtree	8579	2-YR	321.00	381.13	384.75		384.94	0.003945	4.34	141.08	101.78	0.46
Plumtree	8579	10-YR	719.00	381.13	385.97		386.19	0.003546	5.22	276.06	121.09	0.46
Plumtree	8579	50-YR	1263.00	381.13	387.05		387.34	0.003765	6.30	417.89	143.41	0.49
Plumtree	8579	100-YR	1578.00	381.13	387.55		387.87	0.003821	6.76	491.56	151.07	0.50
Plumtree	8579	7-30-2016	1757.00	381.13	387.81		388.15	0.003835	6.98	531.31	154.43	0.51
Plumtree	8374	1-YR	204.00	380.31	383.79		383.88	0.001467	2.73	125.40	87.23	0.28
Plumtree	8374	2-YR	321.00	380.31	384.29		384.40	0.001770	3.25	170.67	94.20	0.32
Plumtree	8374	10-YR	719.00	380.31	385.42		385.60	0.002339	4.48	286.79	111.54	0.38
Plumtree	8374	50-YR	1263.00	380.31	386.39		386.67	0.002922	5.73	401.35	123.87	0.44
Plumtree	8374	100-YR	1578.00	380.31	386.83		387.17	0.003216	6.33	456.77	130.00	0.47
Plumtree	8374	7-30-2016	1757.00	380.31	387.05		387.42	0.003372	6.65	486.33	133.64	0.48
Plumtree	8229	1-YR	204.00	379.79	382.85	382.85	383.38	0.010607	6.43	55.07	65.24	0.72
Plumtree	8229	2-YR	321.00	379.79	383.45	383.29	383.89	0.008132	6.50	101.18	86.73	0.65
Plumtree	8229	10-YR	719.00	379.79	384.50		385.00	0.008159	7.90	207.07	116.52	0.68
Plumtree	8229	50-YR	1263.00	379.79	385.40		385.97	0.008374	9.13	323.88	136.34	0.72
Plumtree	8229	100-YR	1578.00	379.79	385.82		386.43	0.008442	9.66	381.90	142.15	0.73
Plumtree	8229	7-30-2016	1757.00	379.79	386.02		386.65	0.008655	10.01	410.04	144.93	0.74
Plumtree	8094	1-YR	204.00	378.24	381.72	380.86	382.12	0.007250	5.29	52.91	63.21	0.57
Plumtree	8094	2-YR	321.00	378.24	382.06	381.98	382.66	0.010033	6.70	79.41	93.32	0.68
Plumtree	8094	10-YR	719.00	378.24	382.97	382.97	383.69	0.011307	8.47	178.49	125.63	0.75
Plumtree	8094	50-YR	1263.00	378.24	383.69	383.69	384.56	0.012929	10.14	277.14	145.63	0.83
Plumtree	8094	100-YR	1578.00	378.24	384.01	384.01	384.96	0.013794	10.94	324.44	153.05	0.87
Plumtree	8094	7-30-2016	1757.00	378.24	384.19	384.19	385.16	0.013852	11.24	353.17	157.07	0.87
Plumtree	7954	1-YR	204.00	377.79	381.03	380.76	381.13	0.005744	3.86	126.50	155.83	0.50
Plumtree	7954	2-YR	321.00	377.79	381.31	380.96	381.43	0.006207	4.41	171.27	160.64	0.53
Plumtree	7954	10-YR	719.00	377.79	382.00	381.39	382.18	0.007322	5.76	286.22	176.84	0.60
Plumtree	7954	50-YR	1263.00	377.79	382.67	381.85	382.91	0.007892	6.89	408.25	187.43	0.65
Plumtree	7954	100-YR	1578.00	377.79	383.00	382.11	383.28	0.008071	7.39	470.73	192.59	0.66
Plumtree	7954	7-30-2016	1757.00	377.79	383.18	382.22	383.47	0.008137	7.65	504.66	195.28	0.67
Plumtree	7800	1-YR	204.00	378.73	379.84		379.92	0.011082	3.70	118.96	173.24	0.67
Plumtree	7800	2-YR	321.00	378.73	380.07		380.17	0.011140	4.28	159.11	178.65	0.70
Plumtree	7800	10-YR	719.00	378.73	380.69		380.85	0.010299	5.45	272.82	188.61	0.72
Plumtree	7800	50-YR	1263.00	378.73	381.38		381.59	0.009271	6.42	405.50	199.61	0.72
Plumtree	7800	100-YR	1578.00	378.73	381.72		381.96	0.008875	6.85	475.26	205.15	0.72
Plumtree	7800	7-30-2016	1757.00	378.73	381.92		382.17	0.008574	7.04	515.52	208.28	0.71
Plumtree	7548	1-YR	204.00	375.57	378.60		378.65	0.002822	3.01	196.75	273.00	0.37
Plumtree	7548	2-YR	321.00	375.57	378.91		378.95	0.002633	3.18	281.31	279.96	0.36
Plumtree	7548	10-YR	719.00	375.57	379.71		379.76	0.002262	3.57	513.54	299.67	0.35
Plumtree	7548	50-YR	1263.00	375.57	380.52		380.59	0.002064	3.96	764.39	313.76	0.35
Plumtree	7548	100-YR	1578.00	375.57	380.89		380.96	0.002081	4.22	879.84	318.65	0.35
Plumtree	7548	7-30-2016	1757.00	375.57	381.13		381.20	0.001984	4.27	957.36	321.83	0.35
Plumtree	7367	1-YR	204.00	378.30	377.68		377.74	0.010709		102.04	116.77	0.00
Plumtree	7367	2-YR	321.00	378.30	378.00		378.08	0.010867		144.63	149.03	0.00
Plumtree	7367	10-YR	719.00	378.30	379.07		379.14	0.005740	1.57	356.70	253.88	0.42
Plumtree	7367	50-YR	1263.00	378.30	380.03		380.09	0.003787	2.45	688.75	402.02	0.40
Plumtree	7367	100-YR	1578.00	378.30	380.45		380.51	0.002975	2.67	859.19	409.55	0.38
Plumtree	7367	7-30-2016	1757.00	378.30	380.75		380.80	0.002435	2.71	981.14	414.83	0.35
Plumtree	7216	1-YR	204.00	375.26	377.08	376.50	377.12	0.002049	1.88	169.34	193.43	0.30
Plumtree	7216	2-YR	321.00	375.26	377.38	376.67	377.43	0.002162	2.25	229.74	210.49	0.33
Plumtree	7216	10-YR	719.00	375.26	378.84	377.10	378.88	0.000779	2.13	586.00	271.23	0.22
Plumtree	7216	50-YR	1263.00	375.26	379.80	377.53	379.86	0.000803	2.61	861.54	301.03	0.23
Plumtree	7216	100-YR	1578.00	375.26	380.22	377.75	380.29	0.000841	2.85	990.24	311.71	0.24
Plumtree	7216	7-30-2016	1757.00	375.26	380.53	377.86	380.60	0.000790	2.90	1089.18	318.37	0.24
Plumtree	7030	1-YR	204.00	373.43	376.00	376.00	376.26	0.015907	6.07	87.90	152.85	0.83
Plumtree	7030	2-YR	321.00	373.43	376.99		377.04	0.002068	2.99	258.09	193.67	0.32
Plumtree	7030	10-YR	719.00	373.43	378.70		378.73	0.000785	2.57	617.70	224.24	0.22
Plumtree	7030	50-YR	1263.00	373.43	379.64		379.69	0.000974	3.26	835.26	236.79	0.25
Plumtree	7030	100-YR	1578.00	373.43	380.04		380.10	0.001132	3.69	933.11	251.48	0.27
Plumtree	7030	7-30-2016	1757.00	373.43	380.36		380.43	0.001115	3.80	1014.98	260.26	0.27

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	6893	1-YR	204.00	370.68	374.17	373.50	374.35	0.004877	3.94	91.06	108.17	0.49
Plumtree	6893	2-YR	321.00	370.68	376.96		376.97	0.000163	1.29	527.96	195.20	0.10
Plumtree	6893	10-YR	719.00	370.68	378.66		378.68	0.000197	1.73	893.39	232.44	0.12
Plumtree	6893	50-YR	1263.00	370.68	379.58		379.61	0.000331	2.45	1115.15	249.92	0.16
Plumtree	6893	100-YR	1578.00	370.68	379.96		380.01	0.000409	2.82	1213.32	257.11	0.18
Plumtree	6893	7-30-2016	1757.00	370.68	380.28		380.33	0.000421	2.94	1295.97	262.05	0.18
Plumtree	6766	1-YR	204.00	369.76	373.74		373.86	0.002973	3.10	104.68	103.18	0.38
Plumtree	6766	2-YR	321.00	369.76	376.95		376.95	0.000097	1.06	631.31	226.69	0.08
Plumtree	6766	10-YR	719.00	369.76	378.64		378.66	0.000131	1.48	1062.96	285.23	0.10
Plumtree	6766	50-YR	1263.00	369.76	379.55		379.58	0.000233	2.14	1343.84	333.10	0.14
Plumtree	6766	100-YR	1578.00	369.76	379.93		379.97	0.000291	2.47	1474.17	350.00	0.15
Plumtree	6766	7-30-2016	1757.00	369.76	380.25		380.29	0.000297	2.56	1587.13	358.55	0.15
Plumtree	6663	1-YR	204.00	369.26	373.55		373.65	0.001425	2.76	111.00	93.79	0.28
Plumtree	6663	2-YR	321.00	369.26	376.94		376.94	0.000077	1.05	712.72	267.97	0.07
Plumtree	6663	10-YR	719.00	369.26	378.63		378.64	0.000100	1.40	1228.46	329.60	0.09
Plumtree	6663	50-YR	1263.00	369.26	379.53		379.55	0.000170	1.95	1533.45	346.77	0.11
Plumtree	6663	100-YR	1578.00	369.26	379.91		379.94	0.000213	2.24	1665.69	354.87	0.13
Plumtree	6663	7-30-2016	1757.00	369.26	380.23		380.26	0.000218	2.32	1779.21	358.22	0.13
Plumtree	6568	1-YR	209.00	368.65	373.37		373.50	0.001738	3.26	108.67	88.02	0.29
Plumtree	6568	2-YR	334.00	368.65	376.93		376.94	0.000089	1.14	704.22	235.26	0.07
Plumtree	6568	10-YR	772.00	368.65	378.62		378.63	0.000135	1.62	1144.01	281.83	0.09
Plumtree	6568	50-YR	1391.00	368.65	379.51		379.53	0.000254	2.36	1403.70	303.26	0.13
Plumtree	6568	100-YR	1736.00	368.65	379.87		379.91	0.000325	2.73	1517.89	315.53	0.15
Plumtree	6568	7-30-2016	2002.00	368.65	380.19		380.23	0.000368	2.96	1617.71	325.83	0.16
Plumtree	6454	1-YR	209.00	368.30	373.20		373.31	0.001465	2.82	92.88	60.63	0.29
Plumtree	6454	2-YR	334.00	368.30	376.92		376.93	0.000068	1.04	670.05	196.78	0.07
Plumtree	6454	10-YR	772.00	368.30	378.60		378.62	0.000118	1.58	1024.54	237.15	0.10
Plumtree	6454	50-YR	1391.00	368.30	379.46		379.50	0.000237	2.39	1243.83	268.53	0.14
Plumtree	6454	100-YR	1736.00	368.30	379.82		379.87	0.000308	2.80	1341.87	282.85	0.16
Plumtree	6454	7-30-2016	2002.00	368.30	380.12		380.19	0.000358	3.08	1429.12	297.48	0.17
Plumtree	6350	1-YR	209.00	366.97	373.12	370.05	373.19	0.000797	2.17	96.85	29.92	0.21
Plumtree	6350	2-YR	334.00	366.97	376.89	370.82	376.92	0.000125	1.40	351.79	116.59	0.09
Plumtree	6350	10-YR	772.00	366.97	378.53	372.46	378.60	0.000250	2.27	606.81	223.78	0.14
Plumtree	6350	50-YR	1391.00	366.97	379.33	374.07	379.46	0.000519	3.47	776.56	258.31	0.20
Plumtree	6350	100-YR	1736.00	366.97	379.64	374.85	379.82	0.000680	4.06	850.82	270.96	0.23
Plumtree	6350	7-30-2016	2002.00	366.97	379.92	375.41	380.12	0.000772	4.40	919.57	278.78	0.24
Plumtree	6296	1-YR	209.00	367.41	373.02	370.57	373.13	0.001217	2.97	93.14	32.95	0.25
Plumtree	6296	2-YR	334.00	367.41	376.87	371.29	376.91	0.000231	1.97	276.39	105.98	0.12
Plumtree	6296	10-YR	772.00	367.41	378.48	373.00	378.57	0.000508	3.29	529.86	160.37	0.18
Plumtree	6296	50-YR	1391.00	367.41	379.18	374.71	379.41	0.001144	5.16	660.58	227.56	0.28
Plumtree	6296	100-YR	1736.00	367.41	379.46	375.85	379.75	0.001497	6.01	724.21	242.28	0.32
Plumtree	6296	7-30-2016	2002.00	367.41	379.71	376.25	380.05	0.001710	6.52	787.73	260.69	0.35
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	209.00	366.39	371.05	368.06	371.11	0.000478	1.92	110.52	30.77	0.17
Plumtree	6197	2-YR	334.00	366.39	371.95	368.60	372.04	0.000610	2.48	139.14	33.30	0.20
Plumtree	6197	10-YR	772.00	366.39	373.86	370.01	374.10	0.001035	4.04	207.93	38.73	0.27
Plumtree	6197	50-YR	1391.00	366.39	375.30	371.43	375.83	0.001722	5.93	275.03	61.69	0.37
Plumtree	6197	100-YR	1736.00	366.39	375.92	372.13	376.60	0.002045	6.78	318.14	77.96	0.40
Plumtree	6197	7-30-2016	2002.00	366.39	376.34	372.64	377.14	0.002289	7.40	354.81	102.83	0.43
Plumtree	6122	1-YR	209.00	366.62	369.71	369.68	370.72	0.023394	8.05	25.96	12.69	0.99
Plumtree	6122	2-YR	334.00	366.62	370.81	370.60	371.68	0.015779	7.51	46.76	30.99	0.86
Plumtree	6122	10-YR	772.00	366.62	372.25	372.25	373.59	0.014182	9.75	101.86	45.52	0.88
Plumtree	6122	50-YR	1391.00	366.62	373.71	373.71	375.25	0.011977	11.12	185.68	77.96	0.85
Plumtree	6122	100-YR	1736.00	366.62	374.24	374.24	375.97	0.012288	12.00	219.27	86.02	0.88
Plumtree	6122	7-30-2016	2002.00	366.62	374.61	374.61	376.49	0.012534	12.63	243.03	89.74	0.90
Plumtree	6028	1-YR	209.00	365.53	369.78	368.84	369.92	0.002497	3.31	95.96	72.11	0.36
Plumtree	6028	2-YR	334.00	365.53	371.12	369.37	371.20	0.000998	2.77	215.13	105.88	0.25
Plumtree	6028	10-YR	772.00	365.53	372.79	370.39	372.91	0.001066	3.63	435.39	161.36	0.27
Plumtree	6028	50-YR	1391.00	365.53	373.90	371.34	374.07	0.001357	4.62	618.59	210.30	0.31
Plumtree	6028	100-YR	1736.00	365.53	374.39	371.79	374.59	0.001481	5.06	705.82	221.83	0.33
Plumtree	6028	7-30-2016	2002.00	365.53	374.77	372.05	374.98	0.001521	5.31	774.89	229.06	0.34
Plumtree	5926	1-YR	209.00	365.38	369.18	368.48	369.52	0.006099	5.21	57.66	36.13	0.54
Plumtree	5926	2-YR	334.00	365.38	370.90	369.08	371.06	0.001907	3.99	150.08	109.08	0.33
Plumtree	5926	10-YR	772.00	365.38	372.53	370.49	372.75	0.002101	5.14	295.41	157.01	0.36
Plumtree	5926	50-YR	1391.00	365.38	373.44	371.84	373.84	0.003430	7.19	387.28	166.19	0.48
Plumtree	5926	100-YR	1736.00	365.38	373.82	372.25	374.32	0.004106	8.15	429.03	170.11	0.52
Plumtree	5926	7-30-2016	2002.00	365.38	374.14	372.56	374.70	0.004422	8.69	464.75	172.61	0.55

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5824	1-YR	209.00	365.08	368.67		368.92	0.005100	3.99	52.34	27.16	0.51
Plumtree	5824	2-YR	334.00	365.08	370.79		370.91	0.000975	2.76	146.86	83.54	0.25
Plumtree	5824	10-YR	772.00	365.08	372.42		372.59	0.001075	3.67	361.49	160.72	0.28
Plumtree	5824	50-YR	1391.00	365.08	373.28		373.56	0.001657	5.02	504.21	169.73	0.35
Plumtree	5824	100-YR	1736.00	365.08	373.65		373.99	0.001943	5.65	567.81	173.59	0.39
Plumtree	5824	7-30-2016	2002.00	365.08	373.98		374.35	0.002050	5.99	624.12	177.02	0.40
Plumtree	5745	1-YR	209.00	363.03	368.61	366.10	368.71	0.001136	2.54	83.40	30.63	0.25
Plumtree	5745	2-YR	334.00	363.03	370.77	366.79	370.84	0.000463	2.21	179.79	81.96	0.17
Plumtree	5745	10-YR	772.00	363.03	372.34	368.46	372.51	0.000840	3.56	294.93	103.81	0.24
Plumtree	5745	50-YR	1391.00	363.03	373.00	370.09	373.41	0.001844	5.62	350.83	120.91	0.37
Plumtree	5745	100-YR	1736.00	363.03	373.20	370.82	373.79	0.002558	6.74	369.24	137.39	0.43
Plumtree	5745	7-30-2016	2002.00	363.03	373.39	371.32	374.11	0.003073	7.51	386.07	144.47	0.48
Plumtree	5711	1-YR	209.00	362.51	368.60	365.31	368.67	0.000654	2.14	102.37	36.70	0.19
Plumtree	5711	2-YR	334.00	362.51	370.77	366.07	370.83	0.000312	1.97	219.71	72.30	0.14
Plumtree	5711	10-YR	772.00	362.51	372.33	367.80	372.48	0.000638	3.30	363.55	132.66	0.21
Plumtree	5711	50-YR	1391.00	362.51	373.00	369.54	373.33	0.001412	5.20	467.56	173.96	0.32
Plumtree	5711	100-YR	1736.00	362.51	373.21	370.33	373.68	0.001944	6.21	505.36	180.30	0.38
Plumtree	5711	7-30-2016	2002.00	362.51	373.42	370.79	373.97	0.002249	6.79	543.79	184.66	0.41
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	209.00	361.81	366.73	364.14	366.80	0.000832	2.19	95.48	30.34	0.22
Plumtree	5614	2-YR	334.00	361.81	367.81	364.74	367.91	0.000818	2.54	142.13	53.84	0.22
Plumtree	5614	10-YR	772.00	361.81	371.25	366.22	371.33	0.000358	2.51	510.67	177.07	0.16
Plumtree	5614	50-YR	1391.00	361.81	372.35	367.83	372.49	0.000589	3.53	721.31	207.88	0.21
Plumtree	5614	100-YR	1736.00	361.81	372.78	368.51	372.96	0.000731	4.06	815.89	228.81	0.24
Plumtree	5614	7-30-2016	2002.00	361.81	373.12	368.95	373.32	0.000800	4.36	895.67	238.24	0.25
Plumtree	5560	1-YR	209.00	362.08	366.63		366.74	0.001389	2.66	78.61	26.15	0.27
Plumtree	5560	2-YR	334.00	362.08	367.70		367.84	0.001327	3.05	117.87	60.95	0.28
Plumtree	5560	10-YR	772.00	362.08	371.24		371.31	0.000361	2.47	659.94	271.10	0.16
Plumtree	5560	50-YR	1391.00	362.08	372.34		372.43	0.000498	3.18	982.29	308.87	0.19
Plumtree	5560	100-YR	1736.00	362.08	372.78		372.89	0.000577	3.54	1120.98	326.40	0.21
Plumtree	5560	7-30-2016	2002.00	362.08	373.12		373.24	0.000611	3.74	1235.45	338.32	0.22
Plumtree	5510	1-YR	209.00	362.16	366.24	365.15	366.59	0.005689	4.73	44.17	17.61	0.53
Plumtree	5510	2-YR	334.00	362.16	367.27	365.92	367.70	0.005338	5.22	63.97	20.78	0.52
Plumtree	5510	10-YR	772.00	362.16	371.11	367.79	371.28	0.000963	3.72	395.83	218.76	0.25
Plumtree	5510	50-YR	1391.00	362.16	372.14	369.75	372.38	0.001403	4.94	579.29	245.53	0.31
Plumtree	5510	100-YR	1736.00	362.16	372.54	370.70	372.82	0.001624	5.50	658.35	251.27	0.34
Plumtree	5510	7-30-2016	2002.00	362.16	372.87	370.96	373.17	0.001720	5.81	724.29	255.91	0.35
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	209.00	361.52	366.16	364.20	366.35	0.002415	3.47	60.23	19.99	0.35
Plumtree	5474	2-YR	334.00	361.52	367.16	364.96	367.42	0.002703	4.08	81.82	22.97	0.38
Plumtree	5474	10-YR	772.00	361.52	371.13	366.82	371.25	0.000640	3.21	444.47	171.54	0.21
Plumtree	5474	50-YR	1391.00	361.52	372.14	368.93	372.35	0.001031	4.44	632.24	200.64	0.27
Plumtree	5474	100-YR	1736.00	361.52	372.54	369.78	372.79	0.001230	5.00	713.13	205.43	0.30
Plumtree	5474	7-30-2016	2002.00	361.52	372.86	370.28	373.14	0.001333	5.33	779.74	209.28	0.31
Plumtree	5419	1-YR	209.00	361.46	365.95	364.24	366.18	0.003101	3.87	53.95	17.98	0.39
Plumtree	5419	2-YR	334.00	361.46	366.90	365.00	367.23	0.003607	4.64	71.99	20.19	0.43
Plumtree	5419	10-YR	772.00	361.46	371.10	366.90	371.21	0.000626	3.22	458.50	190.14	0.20
Plumtree	5419	50-YR	1391.00	361.46	372.09	369.36	372.29	0.001073	4.56	620.41	218.67	0.27
Plumtree	5419	100-YR	1736.00	361.46	372.47	369.91	372.72	0.001299	5.17	689.82	223.06	0.30
Plumtree	5419	7-30-2016	2002.00	361.46	372.78	370.30	373.06	0.001425	5.54	746.95	226.65	0.32
Plumtree	5323	1-YR	209.00	361.32	365.60		365.85	0.003804	4.06	52.02	26.78	0.43
Plumtree	5323	2-YR	334.00	361.32	366.64		366.89	0.003007	4.26	103.03	62.35	0.40
Plumtree	5323	10-YR	772.00	361.32	371.10		371.15	0.000342	2.46	606.92	149.95	0.15
Plumtree	5323	50-YR	1391.00	361.32	372.07		372.18	0.000636	3.62	759.45	163.21	0.21
Plumtree	5323	100-YR	1736.00	361.32	372.45		372.59	0.000816	4.22	821.71	169.73	0.24
Plumtree	5323	7-30-2016	2002.00	361.32	372.75		372.92	0.000932	4.60	873.54	174.72	0.26
Plumtree	5209	1-YR	209.00	361.10	364.78	363.87	365.24	0.007547	5.43	38.50	14.92	0.60
Plumtree	5209	2-YR	334.00	361.10	366.12	364.69	366.49	0.003960	5.09	92.89	67.39	0.46
Plumtree	5209	10-YR	772.00	361.10	371.07	366.77	371.12	0.000280	2.36	695.06	168.00	0.14
Plumtree	5209	50-YR	1391.00	361.10	372.03	367.88	372.11	0.000521	3.45	862.59	189.29	0.20
Plumtree	5209	100-YR	1736.00	361.10	372.39	368.36	372.50	0.000680	4.04	931.54	199.17	0.22
Plumtree	5209	7-30-2016	2002.00	361.10	372.68	368.67	372.81	0.000794	4.44	989.78	208.16	0.24
Plumtree	5107	1-YR	209.00	359.92	363.78	363.13	364.33	0.010634	5.92	35.30	15.80	0.70
Plumtree	5107	2-YR	334.00	359.92	365.80	364.00	366.10	0.003417	4.41	78.78	32.96	0.43
Plumtree	5107	10-YR	772.00	359.92	370.97	365.89	371.07	0.000451	2.89	412.85	222.63	0.18

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5107	50-YR	1391.00	359.92	371.81	367.56	372.03	0.000902	4.36	548.38	263.30	0.26
Plumtree	5107	100-YR	1736.00	359.92	372.10	368.16	372.39	0.001192	5.12	602.30	275.82	0.30
Plumtree	5107	7-30-2016	2002.00	359.92	372.34	368.59	372.68	0.001392	5.63	650.97	294.65	0.32
Plumtree	5040	1-YR	209.00	359.23	363.34	362.44	363.72	0.006685	4.94	42.33	18.30	0.57
Plumtree	5040	2-YR	334.00	359.23	365.71	363.18	365.90	0.001897	3.49	95.70	26.81	0.33
Plumtree	5040	10-YR	772.00	359.23	370.95	364.95	371.05	0.000358	2.74	494.43	226.94	0.16
Plumtree	5040	50-YR	1391.00	359.23	371.78	366.55	371.97	0.000678	4.01	700.84	270.40	0.23
Plumtree	5040	100-YR	1736.00	359.23	372.06	367.27	372.31	0.000879	4.65	779.60	283.27	0.26
Plumtree	5040	7-30-2016	2002.00	359.23	372.30	367.79	372.59	0.000999	5.04	849.53	291.60	0.28
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	209.00	359.04	362.04	361.42	362.45	0.008247	5.18	40.32	19.65	0.64
Plumtree	4932	2-YR	334.00	359.04	362.92	362.06	363.42	0.007246	5.67	58.91	22.51	0.62
Plumtree	4932	10-YR	772.00	359.04	364.75	363.70	365.53	0.006486	7.19	119.18	40.84	0.63
Plumtree	4932	50-YR	1391.00	359.04	366.21	365.28	367.40	0.006901	9.09	181.61	44.51	0.68
Plumtree	4932	100-YR	1736.00	359.04	366.95	365.92	368.32	0.006781	9.80	215.42	46.38	0.69
Plumtree	4932	7-30-2016	2002.00	359.04	367.51	366.37	368.98	0.006611	10.24	241.64	47.77	0.69
Plumtree	4845	1-YR	209.00	357.81	361.69	360.24	361.92	0.003403	3.93	53.20	19.40	0.42
Plumtree	4845	2-YR	334.00	357.81	362.54	360.93	362.89	0.003952	4.73	70.66	21.53	0.46
Plumtree	4845	10-YR	772.00	357.81	364.23	362.69	364.97	0.005792	6.93	119.13	72.58	0.58
Plumtree	4845	50-YR	1391.00	357.81	365.80	364.94	366.71	0.005885	8.11	227.09	96.54	0.60
Plumtree	4845	100-YR	1736.00	357.81	366.71	365.55	367.57	0.004835	8.13	296.90	107.66	0.56
Plumtree	4845	7-30-2016	2002.00	357.81	367.38	365.93	368.21	0.004238	8.12	352.80	113.78	0.53
Plumtree	4745	1-YR	209.00	357.45	361.27		361.52	0.004775	4.03	51.89	23.91	0.48
Plumtree	4745	2-YR	334.00	357.45	362.14		362.45	0.004556	4.48	74.53	28.30	0.49
Plumtree	4745	10-YR	772.00	357.45	364.01		364.42	0.003636	5.36	192.94	127.91	0.47
Plumtree	4745	50-YR	1391.00	357.45	365.96		366.22	0.001738	4.81	540.66	211.01	0.35
Plumtree	4745	100-YR	1736.00	357.45	366.96		367.15	0.001233	4.49	762.70	236.13	0.30
Plumtree	4745	7-30-2016	2002.00	357.45	367.65		367.82	0.001013	4.33	932.65	253.05	0.27
Plumtree	4636	1-YR	209.00	357.61	360.93		361.12	0.002753	3.50	59.69	22.30	0.38
Plumtree	4636	2-YR	334.00	357.61	361.75		362.03	0.003160	4.24	78.84	24.13	0.41
Plumtree	4636	10-YR	772.00	357.61	363.73		364.08	0.002540	5.12	260.90	183.54	0.40
Plumtree	4636	50-YR	1391.00	357.61	365.89		366.05	0.001056	4.17	726.08	251.38	0.27
Plumtree	4636	100-YR	1736.00	357.61	366.91		367.03	0.000779	3.90	1003.33	289.17	0.24
Plumtree	4636	7-30-2016	2002.00	357.61	367.61		367.72	0.000652	3.77	1215.93	327.63	0.22
Plumtree	4550	1-YR	209.00	357.24	360.58	359.44	360.83	0.004099	3.96	52.72	23.05	0.46
Plumtree	4550	2-YR	334.00	357.24	361.38	360.09	361.71	0.004397	4.62	72.34	26.38	0.49
Plumtree	4550	10-YR	772.00	357.24	363.24	361.66	363.78	0.004178	5.95	139.34	176.31	0.51
Plumtree	4550	50-YR	1391.00	357.24	365.13	363.21	365.84	0.003511	6.99	234.87	255.53	0.50
Plumtree	4550	100-YR	1736.00	357.24	366.09	363.83	366.85	0.003163	7.32	299.03	293.94	0.49
Plumtree	4550	7-30-2016	2002.00	357.24	366.80	364.29	367.55	0.002846	7.40	355.89	327.49	0.47
Plumtree	4400 US 40		Bridge									
Plumtree	4344	1-YR	209.00	351.69	359.43	354.77	359.47	0.000250	1.52	137.65	27.67	0.12
Plumtree	4344	2-YR	334.00	351.69	360.24	355.38	360.31	0.000415	2.08	160.48	28.92	0.16
Plumtree	4344	10-YR	772.00	351.69	361.83	357.00	362.04	0.000980	3.69	218.71	58.33	0.25
Plumtree	4344	50-YR	1391.00	351.69	363.08	358.66	363.53	0.001742	5.50	282.26	117.38	0.34
Plumtree	4344	100-YR	1736.00	351.69	363.63	359.42	364.23	0.002125	6.34	310.57	130.86	0.38
Plumtree	4344	7-30-2016	2002.00	351.69	364.22	359.97	364.89	0.002219	6.76	340.38	143.19	0.39
Plumtree	4289	1-YR	209.00	352.78	359.42		359.45	0.000258	1.45	144.48	33.55	0.12
Plumtree	4289	2-YR	334.00	352.78	360.22		360.28	0.000409	1.94	172.55	36.52	0.16
Plumtree	4289	10-YR	772.00	352.78	361.80		361.96	0.000859	3.27	264.37	115.93	0.24
Plumtree	4289	50-YR	1391.00	352.78	363.09		363.36	0.001215	4.43	448.17	164.09	0.29
Plumtree	4289	100-YR	1736.00	352.78	363.69		364.00	0.001300	4.83	550.43	175.91	0.30
Plumtree	4289	7-30-2016	2002.00	352.78	364.32		364.62	0.001197	4.88	664.57	190.18	0.30
Plumtree	4185	1-YR	194.00	354.77	359.13		359.37	0.004168	3.91	49.58	21.83	0.46
Plumtree	4185	2-YR	295.00	354.77	359.85		360.16	0.004244	4.45	66.28	24.22	0.47
Plumtree	4185	10-YR	741.00	354.77	361.23	360.72	361.75	0.005360	6.20	186.39	134.81	0.56
Plumtree	4185	50-YR	1395.00	354.77	362.85		363.17	0.002844	5.73	503.98	237.18	0.43
Plumtree	4185	100-YR	1765.00	354.77	363.53		363.81	0.002386	5.67	673.35	266.30	0.40
Plumtree	4185	7-30-2016	2157.00	354.77	364.19		364.44	0.002000	5.56	859.48	290.08	0.38
Plumtree	4033	1-YR	194.00	355.05	358.59		358.80	0.003219	3.69	52.60	20.78	0.41
Plumtree	4033	2-YR	295.00	355.05	359.34		359.59	0.003173	4.14	90.76	99.22	0.42
Plumtree	4033	10-YR	741.00	355.05	360.95		361.16	0.002173	4.51	323.97	176.80	0.37
Plumtree	4033	50-YR	1395.00	355.05	362.63		362.82	0.001606	4.76	696.38	290.81	0.33
Plumtree	4033	100-YR	1765.00	355.05	363.35		363.51	0.001302	4.61	913.17	308.43	0.31
Plumtree	4033	7-30-2016	2157.00	355.05	364.05		364.19	0.001106	4.52	1133.44	324.67	0.29

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	3930	1-YR	194.00	354.49	357.91	357.18	358.31	0.007228	5.04	38.76	19.95	0.60
Plumtree	3930	2-YR	295.00	354.49	358.60	357.79	359.10	0.006973	5.72	54.90	27.15	0.61
Plumtree	3930	10-YR	741.00	354.49	360.72	359.88	360.93	0.002285	4.79	348.14	200.88	0.38
Plumtree	3930	50-YR	1395.00	354.49	362.53	360.71	362.66	0.001189	4.27	749.79	240.24	0.29
Plumtree	3930	100-YR	1765.00	354.49	363.26	361.01	363.38	0.001071	4.34	929.34	254.37	0.28
Plumtree	3930	7-30-2016	2157.00	354.49	363.96	361.30	364.07	0.000969	4.39	1110.03	267.00	0.27
Plumtree	3816	1-YR	194.00	353.49	357.44	356.09	357.69	0.003718	4.05	52.55	31.80	0.43
Plumtree	3816	2-YR	295.00	353.49	358.23	356.72	358.51	0.003242	4.44	89.59	64.56	0.42
Plumtree	3816	10-YR	741.00	353.49	360.54	358.81	360.71	0.001501	4.25	366.80	160.40	0.31
Plumtree	3816	50-YR	1395.00	353.49	362.39	360.02	362.53	0.001056	4.29	699.73	212.12	0.27
Plumtree	3816	100-YR	1765.00	353.49	363.12	360.43	363.26	0.001010	4.46	835.16	226.46	0.27
Plumtree	3816	7-30-2016	2157.00	353.49	363.81	360.80	363.96	0.000979	4.63	965.21	233.53	0.27
Plumtree	3688	1-YR	194.00	352.86	357.03	355.33	357.27	0.002913	3.86	52.30	26.75	0.38
Plumtree	3688	2-YR	295.00	352.86	357.83	355.99	358.12	0.002868	4.45	85.57	56.92	0.39
Plumtree	3688	10-YR	741.00	352.86	360.30	358.41	360.51	0.001602	4.59	328.72	135.19	0.32
Plumtree	3688	50-YR	1395.00	352.86	362.18	359.76	362.37	0.001310	4.92	627.32	181.85	0.30
Plumtree	3688	100-YR	1765.00	352.86	362.92	360.27	363.11	0.001260	5.11	759.68	191.03	0.30
Plumtree	3688	7-30-2016	2157.00	352.86	363.62	360.71	363.82	0.001224	5.29	889.88	200.22	0.30
Plumtree	3550	1-YR	194.00	352.85	356.59	355.13	356.81	0.003779	3.72	52.73	26.24	0.43
Plumtree	3550	2-YR	295.00	352.85	357.47	355.87	357.71	0.002925	4.00	81.45	42.83	0.40
Plumtree	3550	10-YR	741.00	352.85	360.06	357.67	360.29	0.001523	4.32	288.27	117.95	0.32
Plumtree	3550	50-YR	1395.00	352.85	361.95	359.30	362.19	0.001318	4.86	524.35	155.83	0.31
Plumtree	3550	100-YR	1765.00	352.85	362.65	360.04	362.92	0.001369	5.25	620.56	168.72	0.32
Plumtree	3550	7-30-2016	2157.00	352.85	363.33	360.47	363.62	0.001417	5.63	716.34	186.19	0.33
Plumtree	3428	1-YR	194.00	351.86	356.15	354.43	356.39	0.003057	3.95	51.24	21.82	0.39
Plumtree	3428	2-YR	295.00	351.86	357.02	355.11	357.33	0.003184	4.55	73.72	29.36	0.41
Plumtree	3428	10-YR	741.00	351.86	359.66	357.34	360.04	0.002392	5.55	202.10	70.72	0.38
Plumtree	3428	50-YR	1395.00	351.86	361.38	359.36	361.93	0.002813	7.04	333.45	102.15	0.43
Plumtree	3428	100-YR	1765.00	351.86	361.97	360.02	362.64	0.003221	7.90	387.22	112.97	0.47
Plumtree	3428	7-30-2016	2157.00	351.86	362.57	360.65	363.32	0.003486	8.58	445.59	122.48	0.49
Plumtree	3296	1-YR	194.00	351.72	355.75		355.98	0.003120	3.85	50.42	16.51	0.39
Plumtree	3296	2-YR	295.00	351.72	356.54		356.86	0.003903	4.55	64.77	19.62	0.44
Plumtree	3296	10-YR	741.00	351.72	359.17		359.66	0.003511	5.58	138.74	42.94	0.45
Plumtree	3296	50-YR	1395.00	351.72	360.61		361.44	0.004479	7.54	246.54	105.36	0.54
Plumtree	3296	100-YR	1765.00	351.72	360.92	359.75	362.03	0.005803	8.86	280.44	117.06	0.62
Plumtree	3296	7-30-2016	2157.00	351.72	361.20	360.77	362.62	0.007125	10.11	315.47	128.11	0.69
Plumtree	3179	1-YR	194.00	350.39	355.46	353.81	355.60	0.002853	3.05	63.53	28.81	0.36
Plumtree	3179	2-YR	295.00	350.39	356.22	354.39	356.38	0.003535	3.18	92.78	49.06	0.41
Plumtree	3179	10-YR	741.00	350.39	359.25	356.25	359.37	0.000821	2.86	320.16	124.48	0.23
Plumtree	3179	50-YR	1395.00	350.39	360.86	357.30	361.04	0.000939	3.70	509.99	159.31	0.25
Plumtree	3179	100-YR	1765.00	350.39	361.26	357.85	361.51	0.001177	4.31	560.69	164.61	0.29
Plumtree	3179	7-30-2016	2157.00	350.39	361.66	358.38	361.97	0.001402	4.88	611.69	169.81	0.32
Plumtree	3077	1-YR	194.00	350.72	355.09		355.27	0.003712	3.37	59.60	65.72	0.42
Plumtree	3077	2-YR	295.00	350.72	355.99		356.11	0.001865	3.00	146.99	120.83	0.31
Plumtree	3077	10-YR	741.00	350.72	359.26		359.30	0.000301	2.01	691.71	191.49	0.14
Plumtree	3077	50-YR	1395.00	350.72	360.88		360.94	0.000393	2.68	1024.49	230.37	0.17
Plumtree	3077	100-YR	1765.00	350.72	361.30		361.38	0.000499	3.13	1123.79	241.30	0.19
Plumtree	3077	7-30-2016	2157.00	350.72	361.72		361.82	0.000597	3.54	1226.76	251.83	0.21
Plumtree	2978	1-YR	194.00	350.53	354.72	352.92	354.91	0.003428	3.56	54.56	22.85	0.41
Plumtree	2978	2-YR	295.00	350.53	355.66	353.66	355.88	0.002916	3.71	80.45	32.70	0.39
Plumtree	2978	10-YR	741.00	350.53	359.07	355.64	359.24	0.000935	3.52	292.37	89.36	0.25
Plumtree	2978	50-YR	1395.00	350.53	360.58	357.38	360.86	0.001268	4.75	479.28	152.96	0.30
Plumtree	2978	100-YR	1765.00	350.53	360.90	357.99	361.27	0.001683	5.62	529.08	162.80	0.35
Plumtree	2978	7-30-2016	2157.00	350.53	361.21	358.59	361.68	0.002088	6.42	579.74	164.06	0.39
Plumtree	2917	1-YR	194.00	350.36	354.47	352.82	354.70	0.003637	3.82	50.85	19.74	0.42
Plumtree	2917	2-YR	295.00	350.36	355.42	353.56	355.67	0.003963	4.02	73.47	29.70	0.45
Plumtree	2917	10-YR	741.00	350.36	359.01	355.69	359.18	0.000949	3.48	276.73	176.96	0.25
Plumtree	2917	50-YR	1395.00	350.36	360.58	357.13	360.76	0.000952	4.08	685.37	268.01	0.26
Plumtree	2917	100-YR	1765.00	350.36	360.91	357.92	361.14	0.001198	4.71	776.16	285.43	0.30
Plumtree	2917	7-30-2016	2157.00	350.36	361.24	358.60	361.52	0.001413	5.26	873.48	302.99	0.33
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	194.00	350.08	354.23	353.52	354.48	0.007196	4.05	48.48	35.30	0.57
Plumtree	2827	2-YR	295.00	350.08	354.88	354.06	355.15	0.005011	4.22	74.03	58.20	0.51
Plumtree	2827	10-YR	741.00	350.08	356.04	355.31	356.68	0.006890	6.60	127.69	123.18	0.64
Plumtree	2827	50-YR	1395.00	350.08	357.25	356.57	357.76	0.004757	6.74	366.06	167.47	0.56
Plumtree	2827	100-YR	1765.00	350.08	357.71	356.93	358.27	0.004799	7.23	447.05	180.62	0.57
Plumtree	2827	7-30-2016	2157.00	350.08	358.17	357.31	358.75	0.004711	7.59	532.77	191.93	0.57

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	2759	1-YR	194.00	349.32	354.01		354.20	0.002303	3.53	60.63	38.10	0.32
Plumtree	2759	2-YR	295.00	349.32	354.65		354.90	0.002644	4.21	105.51	102.66	0.36
Plumtree	2759	10-YR	741.00	349.32	355.89		356.20	0.003356	5.61	292.40	183.88	0.42
Plumtree	2759	50-YR	1395.00	349.32	357.12		357.39	0.002978	6.04	552.04	234.40	0.41
Plumtree	2759	100-YR	1765.00	349.32	357.60		357.88	0.002992	6.34	669.71	251.48	0.41
Plumtree	2759	7-30-2016	2157.00	349.32	358.08		358.35	0.002928	6.54	793.97	267.31	0.41
Plumtree	2589	1-YR	194.00	349.71	353.61		353.74	0.002925	3.59	99.38	67.53	0.36
Plumtree	2589	2-YR	295.00	349.71	354.29		354.42	0.002643	3.83	157.33	107.81	0.35
Plumtree	2589	10-YR	741.00	349.71	355.38		355.57	0.003679	5.37	303.05	153.99	0.43
Plumtree	2589	50-YR	1395.00	349.71	356.49		356.77	0.004617	6.91	508.37	230.38	0.50
Plumtree	2589	100-YR	1765.00	349.71	357.03		357.28	0.004134	6.92	635.35	247.37	0.48
Plumtree	2589	7-30-2016	2157.00	349.71	357.55		357.79	0.003720	6.92	769.08	263.57	0.46
Plumtree	2485	1-YR	194.00	349.20	352.27	352.17	353.06	0.016590	7.27	30.07	22.59	0.85
Plumtree	2485	2-YR	295.00	349.20	352.96	352.80	353.81	0.013429	7.80	51.13	38.34	0.80
Plumtree	2485	10-YR	741.00	349.20	354.61		355.05	0.006343	7.21	240.23	152.00	0.59
Plumtree	2485	50-YR	1395.00	349.20	355.97		356.29	0.004374	7.11	476.91	195.79	0.51
Plumtree	2485	100-YR	1765.00	349.20	356.57		356.86	0.003799	7.06	596.21	203.74	0.49
Plumtree	2485	7-30-2016	2157.00	349.20	357.13		357.41	0.003453	7.11	712.00	210.83	0.47
Plumtree	2331	1-YR	194.00	348.10	351.56		351.81	0.003863	4.04	48.42	21.42	0.45
Plumtree	2331	2-YR	295.00	348.10	352.38		352.69	0.003579	4.54	73.39	64.53	0.45
Plumtree	2331	10-YR	741.00	348.10	353.98		354.35	0.003255	5.66	239.48	125.68	0.45
Plumtree	2331	50-YR	1395.00	348.10	355.28		355.71	0.003258	6.65	418.02	148.91	0.47
Plumtree	2331	100-YR	1765.00	348.10	355.84		356.30	0.003329	7.12	504.14	159.72	0.49
Plumtree	2331	7-30-2016	2157.00	348.10	356.39		356.87	0.003306	7.48	594.77	169.96	0.49
Plumtree	2153	1-YR	194.00	346.39	351.13		351.30	0.002037	3.41	61.97	21.90	0.30
Plumtree	2153	2-YR	295.00	346.39	351.90		352.15	0.002475	4.11	100.30	73.87	0.33
Plumtree	2153	10-YR	741.00	346.39	353.46		353.77	0.003077	5.44	257.98	122.71	0.38
Plumtree	2153	50-YR	1395.00	346.39	354.74		355.09	0.003391	6.47	429.96	142.84	0.42
Plumtree	2153	100-YR	1765.00	346.39	355.28		355.67	0.003548	6.93	509.05	149.50	0.43
Plumtree	2153	7-30-2016	2157.00	346.39	355.83		356.23	0.003575	7.27	593.34	156.45	0.44
Plumtree	1994	1-YR	194.00	346.45	350.69		350.92	0.002877	3.81	53.72	27.63	0.37
Plumtree	1994	2-YR	295.00	346.45	351.33		351.66	0.003627	4.72	79.90	81.53	0.42
Plumtree	1994	10-YR	741.00	346.45	352.86		353.23	0.003655	5.90	246.07	133.39	0.45
Plumtree	1994	50-YR	1395.00	346.45	354.14		354.53	0.003654	6.79	442.60	171.19	0.46
Plumtree	1994	100-YR	1765.00	346.45	354.72		355.11	0.003450	6.97	544.64	176.56	0.45
Plumtree	1994	7-30-2016	2157.00	346.45	355.30		355.68	0.003318	7.19	649.26	188.61	0.45
Plumtree	1888	1-YR	194.00	345.73	350.34	348.84	350.59	0.003215	4.17	62.39	49.34	0.40
Plumtree	1888	2-YR	295.00	345.73	351.00	349.69	351.29	0.003216	4.71	102.75	73.28	0.42
Plumtree	1888	10-YR	741.00	345.73	352.55	351.73	352.85	0.003116	5.77	278.83	135.25	0.43
Plumtree	1888	50-YR	1395.00	345.73	353.80	352.63	354.15	0.003278	6.79	464.37	160.47	0.46
Plumtree	1888	100-YR	1765.00	345.73	354.38	353.02	354.74	0.003247	7.14	560.70	170.01	0.46
Plumtree	1888	7-30-2016	2157.00	345.73	354.96	353.34	355.33	0.003190	7.44	661.28	180.95	0.47
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	194.00	346.61	350.25		350.35	0.001595	2.87	108.32	72.27	0.29
Plumtree	1830	2-YR	295.00	346.61	350.92		351.02	0.001553	3.13	163.67	98.15	0.30
Plumtree	1830	10-YR	741.00	346.61	352.47		352.60	0.001499	3.92	375.28	152.68	0.31
Plumtree	1830	50-YR	1395.00	346.61	353.67		353.86	0.001791	4.96	562.31	157.05	0.35
Plumtree	1830	100-YR	1765.00	346.61	354.21		354.42	0.001949	5.47	646.65	160.33	0.37
Plumtree	1830	7-30-2016	2157.00	346.61	354.74		354.99	0.002076	5.94	733.31	165.72	0.39
Plumtree	1641	1-YR	194.00	345.19	349.67		349.90	0.003214	4.03	60.67	31.21	0.39
Plumtree	1641	2-YR	295.00	345.19	350.10		350.47	0.004626	5.24	79.12	65.80	0.48
Plumtree	1641	10-YR	741.00	345.19	351.34		351.94	0.006536	7.53	195.70	116.71	0.60
Plumtree	1641	50-YR	1395.00	345.19	352.60		353.18	0.005962	8.36	365.80	148.16	0.59
Plumtree	1641	100-YR	1765.00	345.19	353.18		353.74	0.005567	8.58	455.21	157.83	0.58
Plumtree	1641	7-30-2016	2157.00	345.19	353.80		354.33	0.004984	8.60	556.44	167.82	0.56
Plumtree	1463	1-YR	194.00	343.35	349.50		349.57	0.000925	2.19	108.95	98.09	0.22
Plumtree	1463	2-YR	295.00	343.35	349.89		350.00	0.001284	2.79	151.37	117.70	0.26
Plumtree	1463	10-YR	741.00	343.35	350.98		351.20	0.002198	4.35	296.10	147.91	0.35
Plumtree	1463	50-YR	1395.00	343.35	352.13		352.42	0.002596	5.46	484.84	181.84	0.40
Plumtree	1463	100-YR	1765.00	343.35	352.72		353.03	0.002525	5.74	596.80	195.20	0.40
Plumtree	1463	7-30-2016	2157.00	343.35	353.39		353.69	0.002250	5.80	732.26	206.47	0.38
Plumtree	1291	1-YR	408.00	344.26	349.04		349.21	0.003520	4.08	193.90	220.05	0.41
Plumtree	1291	2-YR	581.00	344.26	349.38		349.56	0.003912	4.59	270.83	239.14	0.44
Plumtree	1291	10-YR	1316.00	344.26	350.50		350.68	0.003558	5.29	588.35	314.30	0.44
Plumtree	1291	50-YR	2351.00	344.26	351.76		351.92	0.002747	5.47	1032.24	396.89	0.40
Plumtree	1291	100-YR	2995.00	344.26	352.42		352.57	0.002276	5.35	1304.94	413.55	0.37

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	1291	7-30-2016	3782.00	344.26	353.15		353.29	0.001931	5.29	1608.39	422.07	0.35
Plumtree	1124	1-YR	408.00	343.58	348.35		348.57	0.004100	4.55	207.91	243.41	0.46
Plumtree	1124	2-YR	581.00	343.58	348.81		348.96	0.003188	4.30	323.04	261.49	0.41
Plumtree	1124	10-YR	1316.00	343.58	350.07		350.19	0.002297	4.40	663.42	281.73	0.36
Plumtree	1124	50-YR	2351.00	343.58	351.41		351.53	0.001865	4.71	1061.23	311.21	0.34
Plumtree	1124	100-YR	2995.00	343.58	352.10		352.23	0.001742	4.91	1282.29	325.49	0.34
Plumtree	1124	7-30-2016	3782.00	343.58	352.85		352.99	0.001658	5.14	1529.32	337.57	0.33
Plumtree	994	1-YR	408.00	342.85	347.96		348.08	0.003020	3.47	217.30	183.00	0.39
Plumtree	994	2-YR	581.00	342.85	348.47		348.58	0.002459	3.40	320.58	206.46	0.36
Plumtree	994	10-YR	1316.00	342.85	349.75		349.89	0.002182	4.09	602.67	235.38	0.36
Plumtree	994	50-YR	2351.00	342.85	351.11		351.28	0.001954	4.70	947.57	271.54	0.36
Plumtree	994	100-YR	2995.00	342.85	351.81		351.99	0.001883	5.01	1142.33	288.19	0.36
Plumtree	994	7-30-2016	3782.00	342.85	352.55		352.75	0.001825	5.33	1363.37	303.86	0.36
Plumtree	911	1-YR	408.00	342.92	347.65		347.82	0.003134	4.12	214.38	193.54	0.40
Plumtree	911	2-YR	581.00	342.92	348.27		348.39	0.002179	3.76	340.96	213.59	0.34
Plumtree	911	10-YR	1316.00	342.92	349.59		349.71	0.002009	4.41	638.16	239.09	0.35
Plumtree	911	50-YR	2351.00	342.92	350.96		351.11	0.001899	5.04	992.45	273.53	0.35
Plumtree	911	100-YR	2995.00	342.92	351.66		351.83	0.001852	5.33	1190.22	288.71	0.35
Plumtree	911	7-30-2016	3782.00	342.92	352.42		352.60	0.001816	5.65	1413.08	303.31	0.36
Plumtree	762	1-YR	408.00	342.54	347.00		347.27	0.004547	4.67	123.45	66.72	0.49
Plumtree	762	2-YR	581.00	342.54	347.52		347.89	0.005295	5.60	187.99	161.19	0.55
Plumtree	762	10-YR	1316.00	342.54	349.12		349.36	0.002899	5.41	528.88	242.04	0.43
Plumtree	762	50-YR	2351.00	342.54	350.58		350.81	0.002265	5.70	912.56	281.55	0.40
Plumtree	762	100-YR	2995.00	342.54	351.31		351.54	0.002109	5.91	1124.41	300.48	0.39
Plumtree	762	7-30-2016	3782.00	342.54	352.09		352.32	0.001979	6.14	1363.28	314.67	0.39
Plumtree	658	1-YR	408.00	340.20	346.92		347.04	0.000944	2.81	191.04	174.69	0.24
Plumtree	658	2-YR	581.00	340.20	347.48		347.62	0.001039	3.21	302.33	225.88	0.26
Plumtree	658	10-YR	1316.00	340.20	349.02		349.16	0.001028	3.84	730.33	301.02	0.27
Plumtree	658	50-YR	2351.00	340.20	350.49		350.64	0.000974	4.29	1193.92	328.76	0.27
Plumtree	658	100-YR	2995.00	340.20	351.22		351.38	0.000975	4.56	1438.89	345.31	0.27
Plumtree	658	7-30-2016	3782.00	340.20	351.99		352.16	0.000985	4.86	1712.84	363.75	0.28
Plumtree	526	1-YR	408.00	341.63	346.78		346.90	0.001213	2.99	267.08	264.39	0.26
Plumtree	526	2-YR	581.00	341.63	347.38		347.47	0.000981	2.94	428.29	278.77	0.24
Plumtree	526	10-YR	1316.00	341.63	348.94		349.02	0.000822	3.28	891.18	311.73	0.23
Plumtree	526	50-YR	2351.00	341.63	350.41		350.50	0.000804	3.74	1371.74	340.24	0.24
Plumtree	526	100-YR	2995.00	341.63	351.14		351.24	0.000812	3.99	1623.66	352.63	0.24
Plumtree	526	7-30-2016	3782.00	341.63	351.91		352.02	0.000828	4.27	1900.65	365.72	0.25
Plumtree	380	1-YR	408.00	341.92	346.39		346.63	0.002737	4.07	136.62	138.09	0.39
Plumtree	380	2-YR	581.00	341.92	347.04	345.26	347.25	0.002220	4.07	255.24	192.08	0.36
Plumtree	380	10-YR	1316.00	341.92	348.66		348.84	0.001693	4.47	590.20	219.66	0.33
Plumtree	380	50-YR	2351.00	341.92	350.13		350.33	0.001622	5.11	923.92	236.20	0.34
Plumtree	380	100-YR	2995.00	341.92	350.84		351.06	0.001632	5.46	1094.45	241.67	0.35
Plumtree	380	7-30-2016	3782.00	341.92	351.59		351.84	0.001669	5.88	1277.89	247.14	0.36
Plumtree	146	1-YR	408.00	340.73	343.98	343.98	345.17	0.019900	8.74	46.71	19.97	1.01
Plumtree	146	2-YR	581.00	340.73	344.79	344.79	346.05	0.015185	9.06	69.34	43.36	0.92
Plumtree	146	10-YR	1316.00	340.73	346.75	346.75	347.96	0.009277	9.88	226.83	111.86	0.78
Plumtree	146	50-YR	2351.00	340.73	348.05	348.05	349.45	0.009370	11.57	391.46	141.74	0.81
Plumtree	146	100-YR	2995.00	340.73	348.63	348.63	350.16	0.009716	12.50	477.06	153.62	0.84
Plumtree	146	7-30-2016	3782.00	340.73	349.23	349.23	350.91	0.010101	13.47	572.07	164.30	0.87
Plumtree	63	1-YR	408.00	340.00	343.55	342.21	343.79	0.003500	3.88	105.20	43.59	0.44
Plumtree	63	2-YR	581.00	340.00	344.18	342.75	344.47	0.003507	4.34	134.24	50.01	0.45
Plumtree	63	10-YR	1316.00	340.00	345.91	344.22	346.45	0.003506	5.95	247.63	84.16	0.49
Plumtree	63	50-YR	2351.00	340.00	347.54	345.72	348.29	0.003501	7.28	427.06	127.03	0.52
Plumtree	63	100-YR	2995.00	340.00	348.33	346.61	349.17	0.003500	7.89	532.16	139.56	0.53
Plumtree	63	7-30-2016	3782.00	340.00	349.16	347.39	350.11	0.003503	8.50	652.88	150.66	0.54

HEC-RAS Plan: A River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	10286	1-YR	396.90	396.81	0.09	2.35	0.01	2.21	100.81	119.97	150.01	0.48
Plumtree	10286	2-YR	397.10	396.98	0.12	2.33	0.01	4.42	135.53	167.05	154.15	0.59
Plumtree	10286	10-YR	397.76	397.61	0.15	2.52	0.03	19.19	248.06	328.76	169.55	0.71
Plumtree	10286	50-YR	398.27	398.01	0.26	2.49	0.01	43.78	402.92	548.31	179.33	1.14
Plumtree	10286	100-YR	398.46	398.12	0.34	2.39	0.00	57.95	481.80	660.25	180.10	1.46
Plumtree	10286	7-30-2016	398.58	398.20	0.38	2.30	0.02	68.34	532.05	732.61	180.66	1.64
Plumtree	10044	1-YR	394.55	394.38	0.18	2.60	0.01		152.30	70.70	160.05	0.73
Plumtree	10044	2-YR	394.76	394.57	0.19	2.43	0.01		195.94	111.06	181.74	0.80
Plumtree	10044	10-YR	395.21	394.81	0.41	0.61	0.10	0.00	352.99	243.01	200.40	1.68
Plumtree	10044	50-YR	395.77	395.39	0.38	0.37	0.10	0.61	514.78	479.61	234.36	1.57
Plumtree	10044	100-YR	396.07	395.74	0.34	0.37	0.08	1.81	583.54	614.65	255.68	1.37
Plumtree	10044	7-30-2016	396.26	395.95	0.32	0.37	0.07	2.89	627.52	702.59	268.46	1.29
Plumtree	9814	1-YR	391.94	391.65	0.29	0.64	0.02		223.00		43.53	0.79
Plumtree	9814	2-YR	392.32	392.01	0.31	0.55	0.01	0.00	307.00		52.14	0.83
Plumtree	9814	10-YR	394.04	393.97	0.08	0.04	0.01	25.02	446.62	124.36	272.22	0.20
Plumtree	9814	50-YR	395.30	395.24	0.06	0.03	0.00	75.79	606.57	312.63	304.39	0.16
Plumtree	9814	100-YR	395.62	395.55	0.07	0.03	0.00	98.45	706.39	395.16	315.10	0.19
Plumtree	9814	7-30-2016	395.82	395.75	0.07	0.03	0.00	113.34	765.72	453.95	317.79	0.20
Plumtree	9762	1-YR	391.29	390.84	0.45	0.16	0.09		223.00		30.27	1.18
Plumtree	9762	2-YR	391.76	391.35	0.41	0.15	0.07		303.99	3.01	69.09	1.05
Plumtree	9762	10-YR	394.00	393.94	0.05	0.02	0.01	13.36	401.79	180.85	228.01	0.14
Plumtree	9762	50-YR	395.27	395.21	0.06	0.02	0.01	47.85	598.77	348.37	286.90	0.16
Plumtree	9762	100-YR	395.59	395.52	0.07	0.02	0.01	63.60	697.60	438.80	322.87	0.19
Plumtree	9762	7-30-2016	395.79	395.71	0.08	0.02	0.01	76.36	777.04	479.60	331.68	0.22
Plumtree	9732	1-YR	391.03	390.89	0.15				223.00		34.50	0.34
Plumtree	9732	2-YR	391.54	391.35	0.19				307.00		37.49	0.41
Plumtree	9732	10-YR	393.96	393.80	0.16			3.49	589.51	3.00	166.87	0.28
Plumtree	9732	50-YR	395.24	395.11	0.14			35.62	777.35	182.02	223.95	0.28
Plumtree	9732	100-YR	395.56	395.40	0.16			49.78	900.87	249.34	235.24	0.33
Plumtree	9732	7-30-2016	395.76	395.59	0.17			60.62	974.98	297.39	241.96	0.37
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	389.52	389.31	0.21	0.36	0.02	0.20	222.44	0.37	35.83	0.49
Plumtree	9589	2-YR	390.20	389.99	0.21	0.26	0.02	1.69	303.05	2.26	43.20	0.46
Plumtree	9589	10-YR	391.43	391.04	0.39	0.26	0.09	6.73	579.96	9.31	63.32	0.76
Plumtree	9589	50-YR	392.59	392.07	0.52	0.25	0.15	71.72	891.33	31.95	135.97	1.01
Plumtree	9589	100-YR	393.12	392.60	0.52	0.23	0.14	109.22	1018.77	72.02	245.13	1.03
Plumtree	9589	7-30-2016	393.38	392.89	0.49	0.22	0.12	135.67	1074.75	122.59	267.37	1.01
Plumtree	9499	1-YR	389.15	388.97	0.18	0.44	0.01		186.11	17.89	50.97	0.45
Plumtree	9499	2-YR	389.92	389.75	0.17	0.44	0.04	0.93	271.86	48.21	124.78	0.44
Plumtree	9499	10-YR	391.08	390.88	0.20	0.31	0.01	83.22	476.71	159.07	158.77	0.56
Plumtree	9499	50-YR	392.20	391.97	0.23	0.26	0.00	241.62	702.09	319.29	171.09	0.65
Plumtree	9499	100-YR	392.74	392.51	0.24	0.25	0.00	342.65	822.44	412.91	175.97	0.70
Plumtree	9499	7-30-2016	393.03	392.79	0.25	0.25	0.00	401.05	889.30	466.65	178.49	0.72
Plumtree	9398	1-YR	388.70	388.37	0.32	0.34	0.03		204.00		15.87	0.70
Plumtree	9398	2-YR	389.45	388.92	0.53	0.52	0.04	3.60	316.02	1.38	97.70	1.12
Plumtree	9398	10-YR	390.76	390.45	0.31	0.53	0.06	157.50	444.27	117.23	167.13	0.89
Plumtree	9398	50-YR	391.93	391.67	0.26	0.48	0.09	396.08	581.21	285.71	182.79	0.89
Plumtree	9398	100-YR	392.49	392.22	0.27	0.48	0.10	541.61	663.78	372.61	192.69	0.94
Plumtree	9398	7-30-2016	392.78	392.51	0.27	0.48	0.11	624.90	706.22	425.88	196.97	0.96
Plumtree	9301	1-YR	388.33	388.11	0.22	0.49	0.02	6.54	197.46		32.60	0.46
Plumtree	9301	2-YR	388.89	388.50	0.39	0.69	0.01	18.16	300.68	2.16	69.83	0.83
Plumtree	9301	10-YR	390.17	389.23	0.94	0.82	0.18	67.49	595.00	56.51	91.28	2.11
Plumtree	9301	50-YR	391.36	390.17	1.19	0.82	0.25	159.72	881.60	221.69	100.36	2.94
Plumtree	9301	100-YR	391.91	390.59	1.32	0.82	0.28	218.07	1030.05	329.88	104.50	3.34
Plumtree	9301	7-30-2016	392.19	390.79	1.40	0.83	0.30	251.64	1114.14	391.22	106.44	3.61
Plumtree	9196	1-YR	387.81	387.40	0.42	0.89	0.09	21.05	181.15	1.80	107.80	1.13
Plumtree	9196	2-YR	388.20	387.74	0.46	0.95	0.09	70.58	241.26	9.16	121.59	1.38
Plumtree	9196	10-YR	389.17	388.82	0.34	0.95	0.03	283.70	363.76	71.53	143.82	1.26
Plumtree	9196	50-YR	390.16	389.79	0.37	1.02	0.01	567.90	521.03	174.06	154.81	1.43
Plumtree	9196	100-YR	390.64	390.24	0.39	1.05	0.00	735.39	607.63	234.98	159.38	1.54
Plumtree	9196	7-30-2016	390.89	390.48	0.41	1.07	0.00	831.04	655.76	270.20	161.92	1.59
Plumtree	8987	1-YR	386.67	386.54	0.13	0.98	0.03	16.01	152.73	35.26	115.30	0.37
Plumtree	8987	2-YR	387.15	387.00	0.15	1.05	0.03	36.74	203.26	81.00	121.03	0.47
Plumtree	8987	10-YR	388.19	387.95	0.23	1.10	0.01	116.82	356.06	246.12	132.81	0.80
Plumtree	8987	50-YR	389.13	388.79	0.34	1.03	0.03	243.69	538.75	480.56	141.71	1.22
Plumtree	8987	100-YR	389.58	389.19	0.39	0.98	0.05	323.10	636.32	618.58	145.45	1.43
Plumtree	8987	7-30-2016	389.82	389.40	0.42	0.95	0.06	369.48	689.99	697.53	147.40	1.54
Plumtree	8753	1-YR	385.66	385.24	0.42	1.15	0.07	44.58	157.65	1.76	79.52	1.22

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	8753	2-YR	386.06	385.62	0.45	1.05	0.08	109.65	203.90	7.45	87.32	1.46
Plumtree	8753	10-YR	387.08	386.73	0.35	0.85	0.04	388.16	295.62	35.22	174.86	1.42
Plumtree	8753	50-YR	388.07	387.83	0.24	0.72	0.00	838.10	358.54	66.36	231.04	1.17
Plumtree	8753	100-YR	388.55	388.33	0.22	0.67	0.01	1114.25	384.34	79.40	245.93	1.08
Plumtree	8753	7-30-2016	388.80	388.59	0.21	0.64	0.01	1259.31	397.65	100.04	251.24	1.04
Plumtree	8579	1-YR	384.40	384.21	0.19	0.49	0.03	52.18	145.55	6.26	90.48	0.60
Plumtree	8579	2-YR	384.94	384.75	0.19	0.51	0.02	108.00	190.09	22.91	101.78	0.62
Plumtree	8579	10-YR	386.19	385.97	0.22	0.57	0.01	294.81	326.95	97.24	121.09	0.80
Plumtree	8579	50-YR	387.34	387.05	0.29	0.67	0.00	554.02	500.11	208.87	143.41	1.08
Plumtree	8579	100-YR	387.87	387.55	0.33	0.71	0.00	703.84	588.35	285.81	151.07	1.20
Plumtree	8579	7-30-2016	388.15	387.81	0.34	0.72	0.00	791.63	635.54	329.83	154.43	1.26
Plumtree	8374	1-YR	383.88	383.79	0.09	0.45	0.04	54.74	149.26		87.23	0.24
Plumtree	8374	2-YR	384.40	384.29	0.11	0.48	0.03	112.10	208.90		94.20	0.33
Plumtree	8374	10-YR	385.60	385.42	0.19	0.58	0.03	329.51	388.54	0.96	111.54	0.57
Plumtree	8374	50-YR	386.67	386.39	0.29	0.67	0.03	646.21	607.80	9.00	123.87	0.88
Plumtree	8374	100-YR	387.17	386.83	0.34	0.71	0.03	834.08	727.45	16.47	130.00	1.05
Plumtree	8374	7-30-2016	387.42	387.05	0.37	0.74	0.03	941.50	793.82	21.68	133.64	1.14
Plumtree	8229	1-YR	383.38	382.85	0.53	1.17	0.04	31.07	165.38	7.55	65.24	1.44
Plumtree	8229	2-YR	383.89	383.45	0.44	1.22	0.02	87.03	206.90	27.07	86.73	1.37
Plumtree	8229	10-YR	385.00	384.50	0.50	1.29	0.02	267.02	335.99	115.98	116.52	1.84
Plumtree	8229	50-YR	385.97	385.40	0.57	1.39	0.03	519.16	473.34	270.50	136.34	2.30
Plumtree	8229	100-YR	386.43	385.82	0.61	1.44	0.03	668.78	542.25	366.97	142.15	2.51
Plumtree	8229	7-30-2016	386.65	386.02	0.64	1.46	0.03	753.29	582.19	421.52	144.93	2.67
Plumtree	8094	1-YR	382.12	381.72	0.40	0.90	0.09	12.66	189.37	1.97	63.21	0.98
Plumtree	8094	2-YR	382.66	382.06	0.59	1.08	0.14	38.77	271.27	10.95	93.32	1.51
Plumtree	8094	10-YR	383.69	382.97	0.72	1.25	0.16	165.12	445.07	108.81	125.63	2.22
Plumtree	8094	50-YR	384.56	383.69	0.87	1.39	0.19	351.85	630.88	280.28	145.63	3.00
Plumtree	8094	100-YR	384.96	384.01	0.95	1.44	0.20	461.02	727.35	389.63	153.05	3.42
Plumtree	8094	7-30-2016	385.16	384.19	0.97	1.45	0.20	527.26	774.79	454.95	157.07	3.56
Plumtree	7954	1-YR	381.13	381.03	0.10	1.20	0.01	84.35	76.38	43.27	155.83	0.58
Plumtree	7954	2-YR	381.43	381.31	0.12	1.25	0.01	135.00	100.37	85.63	160.64	0.72
Plumtree	7954	10-YR	382.18	382.00	0.18	1.33	0.01	301.75	173.10	244.15	176.84	1.12
Plumtree	7954	50-YR	382.91	382.67	0.24	1.31	0.01	547.71	255.58	459.71	187.43	1.49
Plumtree	7954	100-YR	383.28	383.00	0.27	1.30	0.01	692.79	299.98	585.23	192.59	1.66
Plumtree	7954	7-30-2016	383.47	383.18	0.29	1.29	0.01	776.06	324.38	656.56	195.28	1.75
Plumtree	7800	1-YR	379.92	379.84	0.08	1.26	0.01	47.75	51.02	105.23	173.24	0.64
Plumtree	7800	2-YR	380.17	380.07	0.10	1.20	0.02	79.11	73.26	168.63	178.65	0.79
Plumtree	7800	10-YR	380.85	380.69	0.16	1.06	0.03	194.39	142.57	382.04	188.61	1.12
Plumtree	7800	50-YR	381.59	381.38	0.22	0.96	0.05	361.14	231.58	670.28	199.61	1.39
Plumtree	7800	100-YR	381.96	381.72	0.24	0.95	0.05	461.17	281.49	835.35	205.15	1.52
Plumtree	7800	7-30-2016	382.17	381.92	0.26	0.91	0.06	519.29	309.22	928.49	208.28	1.57
Plumtree	7548	1-YR	378.65	378.60	0.05	0.91	0.00	45.78	61.92	96.30	273.00	0.33
Plumtree	7548	2-YR	378.95	378.91	0.05	0.87	0.00	103.55	74.97	142.48	279.96	0.35
Plumtree	7548	10-YR	379.76	379.71	0.05	0.62	0.00	320.89	112.14	285.98	299.67	0.41
Plumtree	7548	50-YR	380.59	380.52	0.06	0.50	0.00	629.11	156.13	477.76	313.76	0.46
Plumtree	7548	100-YR	380.96	380.89	0.07	0.45	0.00	808.31	181.16	588.53	318.65	0.51
Plumtree	7548	7-30-2016	381.20	381.13	0.07	0.40	0.01	913.35	193.44	650.21	321.83	0.51
Plumtree	7367	1-YR	377.74	377.68	0.06	0.61	0.01	0.59		203.41	116.77	
Plumtree	7367	2-YR	378.08	378.00	0.08	0.63	0.01	8.22		312.78	149.03	
Plumtree	7367	10-YR	379.14	379.07	0.07	0.25	0.01	105.67	4.95	608.38	253.88	0.15
Plumtree	7367	50-YR	380.09	380.03	0.06	0.23	0.00	302.44	30.36	930.20	402.02	0.26
Plumtree	7367	100-YR	380.51	380.45	0.06	0.22	0.00	434.96	45.12	1097.92	409.55	0.28
Plumtree	7367	7-30-2016	380.80	380.75	0.05	0.19	0.00	517.13	54.38	1185.49	414.83	0.27
Plumtree	7216	1-YR	377.12	377.08	0.04	0.83	0.02	57.16	127.66	19.18	193.43	0.15
Plumtree	7216	2-YR	377.43	377.38	0.05	0.40	0.00	92.39	190.87	37.74	210.49	0.20
Plumtree	7216	10-YR	378.88	378.84	0.04	0.15	0.00	224.60	357.76	136.64	271.23	0.14
Plumtree	7216	50-YR	379.86	379.80	0.06	0.17	0.00	410.24	582.65	270.11	301.03	0.20
Plumtree	7216	100-YR	380.29	380.22	0.07	0.18	0.00	524.71	706.65	346.63	311.71	0.23
Plumtree	7216	7-30-2016	380.60	380.53	0.07	0.17	0.00	595.16	770.12	391.73	318.37	0.23
Plumtree	7030	1-YR	376.26	376.00	0.26	1.12	0.02	112.49	83.91	7.60	152.85	1.47
Plumtree	7030	2-YR	377.04	376.99	0.04	0.06	0.01	224.53	65.99	30.47	193.67	0.30
Plumtree	7030	10-YR	378.73	378.70	0.03	0.05	0.00	506.48	93.22	119.30	224.24	0.19
Plumtree	7030	50-YR	379.69	379.64	0.05	0.07	0.00	889.30	144.04	229.65	236.79	0.29
Plumtree	7030	100-YR	380.10	380.04	0.06	0.09	0.00	1127.48	175.42	275.10	251.48	0.36
Plumtree	7030	7-30-2016	380.43	380.36	0.06	0.09	0.00	1250.41	190.66	315.93	260.26	0.37
Plumtree	6893	1-YR	374.35	374.17	0.19	0.47	0.02	47.72	153.74	2.53	108.17	0.57
Plumtree	6893	2-YR	376.97	376.96	0.01	0.02	0.00	169.06	119.79	32.15	195.20	0.05
Plumtree	6893	10-YR	378.68	378.66	0.02	0.02	0.00	410.51	218.10	90.39	232.44	0.07
Plumtree	6893	50-YR	379.61	379.58	0.04	0.03	0.00	740.52	351.86	170.62	249.92	0.14

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	6893	100-YR	380.01	379.96	0.05	0.04	0.00	933.38	425.93	218.69	257.11	0.19
Plumtree	6893	7-30-2016	380.33	380.28	0.05	0.04	0.00	1047.56	461.90	247.53	262.05	0.20
Plumtree	6766	1-YR	373.86	373.74	0.12	0.21	0.00	44.89	158.05	1.05	103.18	0.35
Plumtree	6766	2-YR	376.95	376.95	0.01	0.01	0.00	150.51	139.47	31.01	226.69	0.03
Plumtree	6766	10-YR	378.66	378.64	0.01	0.01	0.00	356.32	259.10	103.58	285.23	0.05
Plumtree	6766	50-YR	379.58	379.55	0.03	0.02	0.00	639.26	424.62	199.12	333.10	0.11
Plumtree	6766	100-YR	379.97	379.93	0.04	0.03	0.00	802.38	512.96	262.66	350.00	0.14
Plumtree	6766	7-30-2016	380.29	380.25	0.04	0.03	0.00	896.53	552.37	308.11	358.55	0.15
Plumtree	6663	1-YR	373.65	373.55	0.10	0.15	0.00	26.20	177.77	0.04	93.79	0.25
Plumtree	6663	2-YR	376.94	376.94	0.01	0.01	0.00	144.56	140.91	35.53	267.97	0.03
Plumtree	6663	10-YR	378.64	378.63	0.01	0.01	0.00	358.30	236.95	123.75	329.60	0.05
Plumtree	6663	50-YR	379.55	379.53	0.02	0.02	0.00	642.35	367.25	253.41	346.77	0.09
Plumtree	6663	100-YR	379.94	379.91	0.03	0.02	0.00	806.47	439.22	332.31	354.87	0.11
Plumtree	6663	7-30-2016	380.26	380.23	0.03	0.03	0.00	905.96	470.13	380.91	358.22	0.12
Plumtree	6568	1-YR	373.50	373.37	0.13	0.18	0.01	38.14	167.21	3.66	88.02	0.33
Plumtree	6568	2-YR	376.94	376.93	0.01	0.01	0.00	156.03	113.36	64.60	235.26	0.03
Plumtree	6568	10-YR	378.63	378.62	0.01	0.01	0.00	399.44	197.29	175.27	281.83	0.06
Plumtree	6568	50-YR	379.53	379.51	0.03	0.03	0.00	744.16	315.88	330.96	303.26	0.13
Plumtree	6568	100-YR	379.91	379.87	0.04	0.04	0.00	933.59	379.52	422.89	315.53	0.17
Plumtree	6568	7-30-2016	380.23	380.19	0.04	0.04	0.00	1077.81	424.42	499.77	325.83	0.19
Plumtree	6454	1-YR	373.31	373.20	0.12	0.11	0.01	6.07	195.99	6.94	60.63	0.26
Plumtree	6454	2-YR	376.93	376.92	0.01	0.01	0.00	58.32	160.11	115.57	196.78	0.03
Plumtree	6454	10-YR	378.62	378.60	0.02	0.02	0.00	145.97	304.98	321.05	237.15	0.06
Plumtree	6454	50-YR	379.50	379.46	0.04	0.04	0.01	277.77	508.63	604.59	268.53	0.13
Plumtree	6454	100-YR	379.87	379.82	0.05	0.05	0.01	353.81	617.10	765.09	282.85	0.17
Plumtree	6454	7-30-2016	380.19	380.12	0.06	0.05	0.01	405.51	699.89	896.61	297.48	0.20
Plumtree	6350	1-YR	373.19	373.12	0.07	0.05	0.00		208.91	0.09	29.92	0.15
Plumtree	6350	2-YR	376.92	376.89	0.03	0.01	0.00	34.22	288.58	11.20	116.59	0.05
Plumtree	6350	10-YR	378.60	378.53	0.06	0.02	0.00	144.15	577.46	50.40	223.78	0.12
Plumtree	6350	50-YR	379.46	379.33	0.13	0.04	0.01	308.90	961.76	120.34	258.31	0.27
Plumtree	6350	100-YR	379.82	379.64	0.18	0.05	0.01	411.06	1161.09	163.86	270.96	0.36
Plumtree	6350	7-30-2016	380.12	379.92	0.20	0.06	0.01	504.52	1295.85	201.64	278.78	0.42
Plumtree	6296	1-YR	373.13	373.02	0.12			36.39	171.66	0.95	32.95	0.26
Plumtree	6296	2-YR	376.91	376.87	0.04			100.27	213.62	20.11	105.98	0.09
Plumtree	6296	10-YR	378.57	378.48	0.10			287.44	426.36	58.20	160.37	0.25
Plumtree	6296	50-YR	379.41	379.18	0.23			591.02	718.34	81.65	227.56	0.60
Plumtree	6296	100-YR	379.75	379.46	0.30			757.27	857.56	121.17	242.28	0.80
Plumtree	6296	7-30-2016	380.05	379.71	0.34			890.52	952.41	159.07	260.69	0.93
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	371.11	371.05	0.06	0.11	0.29	0.30	208.58	0.13	30.77	0.11
Plumtree	6197	2-YR	372.04	371.95	0.10	0.13	0.23	1.61	331.64	0.75	33.30	0.17
Plumtree	6197	10-YR	374.10	373.86	0.25	0.19	0.33	12.46	753.40	6.14	38.73	0.40
Plumtree	6197	50-YR	375.83	375.30	0.53	0.27	0.30	29.13	1343.07	18.80	61.69	0.81
Plumtree	6197	100-YR	376.60	375.92	0.68	0.31	0.31	50.03	1652.33	33.64	77.96	1.04
Plumtree	6197	7-30-2016	377.14	376.34	0.80	0.34	0.32	64.02	1889.14	48.84	102.83	1.21
Plumtree	6122	1-YR	370.72	369.71	1.01	0.54	0.26		209.00		12.69	2.46
Plumtree	6122	2-YR	371.68	370.81	0.87	0.24	0.24	0.43	331.78	1.79	30.99	2.01
Plumtree	6122	10-YR	373.59	372.25	1.33	0.25	0.37	25.08	691.11	55.81	45.52	2.90
Plumtree	6122	50-YR	375.25	373.71	1.54	0.29	0.41	138.43	1087.85	164.72	77.96	3.38
Plumtree	6122	100-YR	375.97	374.24	1.73	0.31	0.46	216.18	1293.53	226.29	86.02	3.82
Plumtree	6122	7-30-2016	376.49	374.61	1.87	0.32	0.50	278.81	1447.28	275.92	89.74	4.14
Plumtree	6028	1-YR	369.92	369.78	0.14	0.38	0.02	39.35	167.45	2.19	72.11	0.37
Plumtree	6028	2-YR	371.20	371.12	0.08	0.14	0.01	105.29	213.64	15.07	105.88	0.23
Plumtree	6028	10-YR	372.91	372.79	0.12	0.15	0.01	301.25	399.83	70.92	161.36	0.34
Plumtree	6028	50-YR	374.07	373.90	0.17	0.21	0.02	624.41	609.38	157.21	210.30	0.52
Plumtree	6028	100-YR	374.59	374.39	0.20	0.23	0.03	807.72	716.94	211.35	221.83	0.62
Plumtree	6028	7-30-2016	374.98	374.77	0.21	0.25	0.03	948.36	791.66	261.98	229.06	0.67
Plumtree	5926	1-YR	369.52	369.18	0.34	0.57	0.03	46.97	160.62	1.41	36.13	0.92
Plumtree	5926	2-YR	371.06	370.90	0.16	0.14	0.01	106.56	197.17	30.28	109.08	0.46
Plumtree	5926	10-YR	372.75	372.53	0.22	0.15	0.02	243.27	344.93	183.80	157.01	0.69
Plumtree	5926	50-YR	373.84	373.44	0.40	0.24	0.04	424.79	553.15	413.06	166.19	1.29
Plumtree	5926	100-YR	374.32	373.82	0.50	0.28	0.05	522.59	660.99	552.43	170.11	1.62
Plumtree	5926	7-30-2016	374.70	374.14	0.56	0.30	0.06	594.25	735.56	672.18	172.61	1.82
Plumtree	5824	1-YR	368.92	368.67	0.25	0.17	0.04		209.00		27.16	0.59
Plumtree	5824	2-YR	370.91	370.79	0.11	0.05	0.01	7.37	318.54	8.09	83.54	0.22
Plumtree	5824	10-YR	372.59	372.42	0.17	0.08	0.00	76.03	603.93	92.04	160.72	0.35
Plumtree	5824	50-YR	373.56	373.28	0.28	0.14	0.01	185.29	958.68	247.03	169.73	0.63
Plumtree	5824	100-YR	373.99	373.65	0.34	0.18	0.03	251.56	1141.58	342.86	173.59	0.78

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5824	7-30-2016	374.35	373.98	0.37	0.20	0.04	308.08	1268.22	425.70	177.02	0.86
Plumtree	5745	1-YR	368.71	368.61	0.10	0.03	0.01		208.73	0.27	30.63	0.20
Plumtree	5745	2-YR	370.84	370.77	0.07	0.01	0.00	4.44	313.83	15.73	81.96	0.13
Plumtree	5745	10-YR	372.51	372.34	0.17	0.02	0.01	54.34	663.70	53.96	103.81	0.32
Plumtree	5745	50-YR	373.41	373.00	0.41	0.05	0.02	133.74	1151.88	105.38	120.91	0.76
Plumtree	5745	100-YR	373.79	373.20	0.59	0.08	0.04	180.76	1421.11	134.13	137.39	1.09
Plumtree	5745	7-30-2016	374.11	373.39	0.73	0.09	0.05	222.63	1622.21	157.16	144.47	1.34
Plumtree	5711	1-YR	368.67	368.60	0.07				207.11	1.89	36.70	0.14
Plumtree	5711	2-YR	370.83	370.77	0.05			4.11	302.72	27.17	72.30	0.10
Plumtree	5711	10-YR	372.48	372.33	0.14			37.12	644.58	90.29	132.66	0.26
Plumtree	5711	50-YR	373.33	373.00	0.34			90.21	1106.98	193.81	173.96	0.63
Plumtree	5711	100-YR	373.68	373.21	0.47			125.60	1356.99	253.41	180.30	0.90
Plumtree	5711	7-30-2016	373.97	373.42	0.55			159.01	1522.17	320.82	184.66	1.06
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	366.80	366.73	0.07	0.06	0.01		209.00		30.34	0.15
Plumtree	5614	2-YR	367.91	367.81	0.10	0.06	0.01	5.03	328.97		53.84	0.19
Plumtree	5614	10-YR	371.33	371.25	0.08	0.02	0.01	114.11	611.71	46.18	177.07	0.15
Plumtree	5614	50-YR	372.49	372.35	0.14	0.03	0.03	246.70	988.51	155.79	207.88	0.28
Plumtree	5614	100-YR	372.96	372.78	0.18	0.04	0.04	301.80	1197.80	236.39	228.81	0.37
Plumtree	5614	7-30-2016	373.32	373.12	0.20	0.04	0.04	362.80	1334.30	304.90	238.24	0.42
Plumtree	5560	1-YR	366.74	366.63	0.11	0.12	0.02		209.00		26.15	0.23
Plumtree	5560	2-YR	367.84	367.70	0.14	0.12	0.03	1.38	330.85	1.77	60.95	0.28
Plumtree	5560	10-YR	371.31	371.24	0.06	0.03	0.01	173.36	515.48	83.16	271.10	0.15
Plumtree	5560	50-YR	372.43	372.34	0.09	0.04	0.02	422.38	763.50	205.12	308.87	0.23
Plumtree	5560	100-YR	372.89	372.78	0.11	0.05	0.02	558.16	893.95	283.90	326.40	0.28
Plumtree	5560	7-30-2016	373.24	373.12	0.12	0.05	0.02	672.58	980.90	348.51	338.32	0.31
Plumtree	5510	1-YR	366.59	366.24	0.35	0.05	0.01		209.00		17.61	0.78
Plumtree	5510	2-YR	367.70	367.27	0.42	0.05	0.02		334.00		20.78	0.89
Plumtree	5510	10-YR	371.28	371.11	0.16			108.25	554.75	109.00	218.76	0.35
Plumtree	5510	50-YR	372.38	372.14	0.24			266.09	849.36	275.55	245.53	0.59
Plumtree	5510	100-YR	372.82	372.54	0.29			353.88	994.86	387.26	251.27	0.71
Plumtree	5510	7-30-2016	373.17	372.87	0.31			425.95	1093.69	482.37	255.91	0.79
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	366.35	366.16	0.19	0.15	0.01		209.00		19.99	0.40
Plumtree	5474	2-YR	367.42	367.16	0.26	0.17	0.02		334.00		22.97	0.52
Plumtree	5474	10-YR	371.25	371.13	0.12	0.03	0.00	137.38	568.82	65.80	171.54	0.25
Plumtree	5474	50-YR	372.35	372.14	0.20	0.06	0.00	318.90	894.62	177.48	200.64	0.46
Plumtree	5474	100-YR	372.79	372.54	0.25	0.07	0.00	421.38	1055.79	258.83	205.43	0.58
Plumtree	5474	7-30-2016	373.14	372.86	0.27	0.08	0.00	504.63	1167.23	330.15	209.28	0.65
Plumtree	5419	1-YR	366.18	365.95	0.23	0.33	0.00		209.00		17.98	0.50
Plumtree	5419	2-YR	367.23	366.90	0.33	0.31	0.02		334.00		20.19	0.68
Plumtree	5419	10-YR	371.21	371.10	0.11	0.04	0.02	140.41	511.64	119.95	190.14	0.25
Plumtree	5419	50-YR	372.29	372.09	0.20	0.08	0.03	326.93	819.15	244.92	218.67	0.49
Plumtree	5419	100-YR	372.72	372.47	0.25	0.10	0.03	431.83	969.10	335.07	223.06	0.62
Plumtree	5419	7-30-2016	373.06	372.78	0.28	0.11	0.03	517.40	1073.54	411.06	226.65	0.70
Plumtree	5323	1-YR	365.85	365.60	0.26	0.59	0.02	0.13	208.87		26.78	0.56
Plumtree	5323	2-YR	366.89	366.64	0.26	0.39	0.01	28.47	305.31	0.22	62.35	0.57
Plumtree	5323	10-YR	371.15	371.10	0.05	0.04	0.00	293.61	396.16	82.23	149.95	0.15
Plumtree	5323	50-YR	372.18	372.07	0.11	0.07	0.01	558.14	653.19	179.68	163.21	0.30
Plumtree	5323	100-YR	372.59	372.45	0.15	0.09	0.01	711.56	791.72	232.72	169.73	0.40
Plumtree	5323	7-30-2016	372.92	372.75	0.17	0.10	0.01	833.83	891.81	276.36	174.72	0.48
Plumtree	5209	1-YR	365.24	364.78	0.46	0.90	0.01		209.00		14.92	1.03
Plumtree	5209	2-YR	366.49	366.12	0.37	0.37	0.02	25.72	301.94	6.34	67.39	0.80
Plumtree	5209	10-YR	371.12	371.07	0.04	0.04	0.01	289.78	321.72	160.50	168.00	0.13
Plumtree	5209	50-YR	372.11	372.03	0.08	0.07	0.01	563.37	520.75	306.88	189.29	0.27
Plumtree	5209	100-YR	372.50	372.39	0.11	0.09	0.02	709.19	632.22	394.59	199.17	0.36
Plumtree	5209	7-30-2016	372.81	372.68	0.13	0.11	0.02	818.27	716.31	467.42	208.16	0.43
Plumtree	5107	1-YR	364.33	363.78	0.54	0.56	0.05		209.00		15.80	1.28
Plumtree	5107	2-YR	366.10	365.80	0.30	0.17	0.03		332.09	1.91	32.96	0.62
Plumtree	5107	10-YR	371.07	370.97	0.10	0.03	0.00	43.46	582.31	146.23	222.63	0.20
Plumtree	5107	50-YR	372.03	371.81	0.22	0.05	0.01	153.43	969.17	268.40	263.30	0.44
Plumtree	5107	100-YR	372.39	372.10	0.29	0.07	0.01	226.31	1173.90	335.80	275.82	0.59
Plumtree	5107	7-30-2016	372.68	372.34	0.35	0.08	0.02	288.80	1323.94	389.26	294.65	0.71
Plumtree	5040	1-YR	363.72	363.34	0.38				209.00		18.30	0.86
Plumtree	5040	2-YR	365.90	365.71	0.19				334.00		26.81	0.38
Plumtree	5040	10-YR	371.05	370.95	0.10			80.35	660.86	30.79	226.94	0.17
Plumtree	5040	50-YR	371.97	371.78	0.19			247.65	1059.09	84.26	270.40	0.36

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5040	100-YR	372.31	372.06	0.25			352.19	1266.72	117.09	283.27	0.48
Plumtree	5040	7-30-2016	372.59	372.30	0.28			449.15	1406.51	146.35	291.60	0.55
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	362.45	362.04	0.42	0.44	0.09		209.00		19.65	0.98
Plumtree	4932	2-YR	363.42	362.92	0.50	0.46	0.08		334.00		22.51	1.09
Plumtree	4932	10-YR	365.53	364.75	0.78	0.53	0.02	23.23	748.38	0.39	40.84	1.51
Plumtree	4932	50-YR	367.40	366.21	1.19	0.55	0.14	100.98	1283.87	6.14	44.51	2.18
Plumtree	4932	100-YR	368.32	366.95	1.36	0.50	0.25	154.20	1568.88	12.91	46.38	2.43
Plumtree	4932	7-30-2016	368.98	367.51	1.47	0.46	0.32	198.34	1783.66	19.99	47.77	2.57
Plumtree	4845	1-YR	361.92	361.69	0.24	0.40	0.00		209.00		19.40	0.52
Plumtree	4845	2-YR	362.89	362.54	0.35	0.43	0.01		334.00		21.53	0.71
Plumtree	4845	10-YR	364.97	364.23	0.74	0.45	0.10	6.44	765.56		72.58	1.39
Plumtree	4845	50-YR	366.71	365.80	0.91	0.29	0.20	168.91	1221.96	0.13	96.54	1.76
Plumtree	4845	100-YR	367.57	366.71	0.86	0.22	0.20	306.30	1423.53	6.18	107.66	1.69
Plumtree	4845	7-30-2016	368.21	367.38	0.83	0.18	0.20	415.40	1567.53	19.07	113.78	1.63
Plumtree	4745	1-YR	361.52	361.27	0.25	0.39	0.02		209.00		23.91	0.59
Plumtree	4745	2-YR	362.45	362.14	0.31	0.41	0.01		334.00		28.30	0.68
Plumtree	4745	10-YR	364.42	364.01	0.42	0.33	0.02	37.61	716.86	17.54	127.91	0.84
Plumtree	4745	50-YR	366.22	365.96	0.25	0.14	0.03	185.95	951.19	253.87	211.01	0.59
Plumtree	4745	100-YR	367.15	366.96	0.20	0.10	0.02	277.66	1032.02	426.33	236.13	0.49
Plumtree	4745	7-30-2016	367.82	367.65	0.17	0.09	0.02	349.08	1094.02	558.91	253.05	0.44
Plumtree	4636	1-YR	361.12	360.93	0.19	0.29	0.01		209.00		22.30	0.41
Plumtree	4636	2-YR	362.03	361.75	0.28	0.32	0.01		334.00		24.13	0.57
Plumtree	4636	10-YR	364.08	363.73	0.35	0.27	0.02	10.45	653.84	107.71	183.54	0.72
Plumtree	4636	50-YR	366.05	365.89	0.16	0.15	0.06	58.83	755.67	576.50	251.38	0.42
Plumtree	4636	100-YR	367.03	366.91	0.12	0.12	0.06	100.96	806.61	828.42	289.17	0.36
Plumtree	4636	7-30-2016	367.72	367.61	0.11	0.10	0.06	136.31	844.58	1021.11	327.63	0.32
Plumtree	4550	1-YR	360.83	360.58	0.24	0.42	0.17		209.00		23.05	0.55
Plumtree	4550	2-YR	361.71	361.38	0.33	0.43	0.20		334.00		26.38	0.70
Plumtree	4550	10-YR	363.78	363.24	0.54	0.40	0.27	0.38	757.68	13.94	176.31	1.02
Plumtree	4550	50-YR	365.84	365.13	0.71	0.35	0.39	17.79	1292.97	80.23	255.53	1.24
Plumtree	4550	100-YR	366.85	366.09	0.76	0.32	0.46	45.65	1566.56	123.79	293.94	1.29
Plumtree	4550	7-30-2016	367.55	366.80	0.75	0.29	0.51	100.35	1745.18	156.47	327.49	1.28
Plumtree	4400 US 40		Bridge									
Plumtree	4344	1-YR	359.47	359.43	0.04	0.01	0.00		209.00		27.67	0.06
Plumtree	4344	2-YR	360.31	360.24	0.07	0.02	0.00		334.00		28.92	0.12
Plumtree	4344	10-YR	362.04	361.83	0.21	0.05	0.02	0.84	765.60	5.55	58.33	0.35
Plumtree	4344	50-YR	363.53	363.08	0.45	0.08	0.09	21.28	1343.71	26.00	117.38	0.73
Plumtree	4344	100-YR	364.23	363.63	0.60	0.09	0.14	40.28	1654.90	40.82	130.86	0.95
Plumtree	4344	7-30-2016	364.89	364.22	0.67	0.09	0.18	62.97	1882.50	56.54	143.19	1.05
Plumtree	4289	1-YR	359.45	359.42	0.03	0.07	0.02		209.00		33.55	0.06
Plumtree	4289	2-YR	360.28	360.22	0.06	0.09	0.02		334.00		36.52	0.11
Plumtree	4289	10-YR	361.96	361.80	0.16	0.18	0.04	2.29	760.65	9.06	115.93	0.28
Plumtree	4289	50-YR	363.36	363.09	0.28	0.19	0.00	62.16	1253.70	75.14	164.09	0.48
Plumtree	4289	100-YR	364.00	363.69	0.31	0.18	0.01	119.73	1479.88	136.39	175.91	0.56
Plumtree	4289	7-30-2016	364.62	364.32	0.30	0.16	0.02	189.72	1614.68	197.61	190.18	0.55
Plumtree	4185	1-YR	359.37	359.13	0.24	0.55	0.01		194.00		21.83	0.54
Plumtree	4185	2-YR	360.16	359.85	0.31	0.55	0.02		295.00		24.22	0.66
Plumtree	4185	10-YR	361.75	361.23	0.52	0.49	0.09	106.46	633.73	0.81	134.81	1.15
Plumtree	4185	50-YR	363.17	362.85	0.32	0.32	0.04	466.16	833.83	95.00	237.18	0.87
Plumtree	4185	100-YR	363.81	363.53	0.28	0.26	0.04	655.96	927.87	181.18	266.30	0.82
Plumtree	4185	7-30-2016	364.44	364.19	0.25	0.22	0.03	858.61	1009.48	288.92	290.08	0.76
Plumtree	4033	1-YR	358.80	358.59	0.21	0.48	0.02		194.00		20.78	0.47
Plumtree	4033	2-YR	359.59	359.34	0.26	0.47	0.02		284.33	10.67	99.22	0.55
Plumtree	4033	10-YR	361.16	360.95	0.21	0.23	0.00	16.61	475.19	249.20	176.80	0.57
Plumtree	4033	50-YR	362.82	362.63	0.19	0.14	0.02	124.49	683.08	587.43	290.81	0.57
Plumtree	4033	100-YR	363.51	363.35	0.15	0.12	0.01	188.14	736.81	840.06	308.43	0.52
Plumtree	4033	7-30-2016	364.19	364.05	0.14	0.11	0.01	256.49	794.37	1106.14	324.67	0.48
Plumtree	3930	1-YR	358.31	357.91	0.39	0.57	0.04	0.14	193.86		19.95	0.91
Plumtree	3930	2-YR	359.10	358.60	0.50	0.52	0.07	4.06	290.94		27.15	1.09
Plumtree	3930	10-YR	360.93	360.72	0.22	0.21	0.01	55.12	433.14	252.74	200.88	0.63
Plumtree	3930	50-YR	362.66	362.53	0.13	0.13	0.00	171.80	531.60	691.60	240.24	0.45
Plumtree	3930	100-YR	363.38	363.26	0.12	0.12	0.00	247.62	599.38	918.00	254.37	0.45
Plumtree	3930	7-30-2016	364.07	363.96	0.12	0.11	0.00	348.30	663.17	1145.53	267.00	0.45
Plumtree	3816	1-YR	357.69	357.44	0.25	0.42	0.01		190.57	3.43	31.80	0.55
Plumtree	3816	2-YR	358.51	358.23	0.28	0.39	0.00	1.67	271.09	22.24	64.56	0.62
Plumtree	3816	10-YR	360.71	360.54	0.17	0.20	0.00	62.32	432.52	246.16	160.40	0.48

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	3816	50-YR	362.53	362.39	0.14	0.15	0.01	190.02	577.09	627.89	212.12	0.44
Plumtree	3816	100-YR	363.26	363.12	0.14	0.14	0.01	270.23	657.03	837.75	226.46	0.46
Plumtree	3816	7-30-2016	363.96	363.81	0.15	0.14	0.01	356.97	739.24	1060.79	233.53	0.49
Plumtree	3688	1-YR	357.27	357.03	0.23	0.46	0.00	0.92	192.99	0.09	26.75	0.49
Plumtree	3688	2-YR	358.12	357.83	0.29	0.40	0.01	8.61	278.06	8.33	56.92	0.60
Plumtree	3688	10-YR	360.51	360.30	0.21	0.22	0.00	96.43	464.21	180.37	135.19	0.54
Plumtree	3688	50-YR	362.37	362.18	0.19	0.18	0.00	258.95	643.92	492.13	181.85	0.57
Plumtree	3688	100-YR	363.11	362.92	0.19	0.18	0.01	366.63	727.45	670.91	191.03	0.60
Plumtree	3688	7-30-2016	363.82	363.62	0.20	0.18	0.01	482.31	812.23	862.46	200.22	0.63
Plumtree	3550	1-YR	356.81	356.59	0.22	0.41	0.00	0.27	193.73		26.24	0.49
Plumtree	3550	2-YR	357.71	357.47	0.24	0.37	0.01	6.04	288.32	0.65	42.83	0.51
Plumtree	3550	10-YR	360.29	360.06	0.23	0.23	0.02	95.93	569.13	75.94	117.95	0.49
Plumtree	3550	50-YR	362.19	361.95	0.24	0.23	0.03	304.35	850.14	240.51	155.83	0.56
Plumtree	3550	100-YR	362.92	362.65	0.27	0.24	0.04	417.69	1004.61	342.70	168.72	0.64
Plumtree	3550	7-30-2016	363.62	363.33	0.29	0.26	0.05	532.42	1164.39	460.18	186.19	0.71
Plumtree	3428	1-YR	356.39	356.15	0.24	0.41	0.00	1.47	192.53		21.82	0.51
Plumtree	3428	2-YR	357.33	357.02	0.31	0.47	0.00	11.44	283.56		29.36	0.64
Plumtree	3428	10-YR	360.04	359.66	0.39	0.38	0.01	124.66	583.93	32.41	70.72	0.80
Plumtree	3428	50-YR	361.93	361.38	0.55	0.46	0.03	311.58	938.31	145.11	102.15	1.19
Plumtree	3428	100-YR	362.64	361.97	0.66	0.56	0.04	412.08	1127.89	225.03	112.97	1.46
Plumtree	3428	7-30-2016	363.32	362.57	0.76	0.64	0.07	517.83	1308.86	330.31	122.48	1.68
Plumtree	3296	1-YR	355.98	355.75	0.23	0.35	0.03		194.00		16.51	0.49
Plumtree	3296	2-YR	356.86	356.54	0.32	0.43	0.05		295.00		19.62	0.67
Plumtree	3296	10-YR	359.66	359.17	0.48	0.17	0.11	2.01	736.12	2.87	42.94	0.89
Plumtree	3296	50-YR	361.44	360.61	0.82	0.21	0.19	19.56	1298.84	76.60	105.36	1.48
Plumtree	3296	100-YR	362.03	360.92	1.11	0.26	0.26	30.02	1602.86	132.12	117.06	2.01
Plumtree	3296	7-30-2016	362.62	361.20	1.41	0.31	0.33	42.85	1909.43	204.72	128.11	2.57
Plumtree	3179	1-YR	355.60	355.46	0.14	0.33	0.00		194.00		28.81	0.34
Plumtree	3179	2-YR	356.38	356.22	0.16	0.26	0.01	0.00	295.00		49.06	0.38
Plumtree	3179	10-YR	359.37	359.25	0.12	0.05	0.03	18.49	688.59	33.92	124.48	0.23
Plumtree	3179	50-YR	361.04	360.86	0.18	0.06	0.04	59.39	1177.18	158.44	159.31	0.34
Plumtree	3179	100-YR	361.51	361.26	0.24	0.07	0.05	83.49	1457.88	223.63	164.61	0.46
Plumtree	3179	7-30-2016	361.97	361.66	0.31	0.09	0.06	112.14	1746.71	298.15	169.81	0.58
Plumtree	3077	1-YR	355.27	355.09	0.18	0.35	0.00	0.41	193.59		65.72	0.42
Plumtree	3077	2-YR	356.11	355.99	0.12	0.23	0.01	37.10	251.63	6.27	120.83	0.30
Plumtree	3077	10-YR	359.30	359.26	0.04	0.05	0.01	250.92	362.19	127.89	191.49	0.10
Plumtree	3077	50-YR	360.94	360.88	0.06	0.06	0.02	494.61	612.70	287.69	230.37	0.17
Plumtree	3077	100-YR	361.38	361.30	0.08	0.08	0.03	637.60	753.92	373.48	241.30	0.23
Plumtree	3077	7-30-2016	361.82	361.72	0.10	0.10	0.04	793.92	896.41	466.67	251.83	0.29
Plumtree	2978	1-YR	354.91	354.72	0.20	0.21	0.00		194.00		22.85	0.45
Plumtree	2978	2-YR	355.88	355.66	0.21	0.21	0.00		294.65	0.35	32.70	0.46
Plumtree	2978	10-YR	359.24	359.07	0.17	0.06	0.00	35.78	627.06	78.16	89.36	0.32
Plumtree	2978	50-YR	360.86	360.58	0.27	0.07	0.03	145.67	1054.02	195.31	152.96	0.54
Plumtree	2978	100-YR	361.27	360.90	0.37	0.09	0.04	211.10	1298.16	255.74	162.80	0.74
Plumtree	2978	7-30-2016	361.68	361.21	0.47	0.10	0.06	295.16	1540.82	321.02	164.06	0.96
Plumtree	2917	1-YR	354.70	354.47	0.23				194.00		19.74	0.50
Plumtree	2917	2-YR	355.67	355.42	0.25			0.00	295.00		29.70	0.56
Plumtree	2917	10-YR	359.18	359.01	0.17			47.58	653.77	39.65	176.96	0.31
Plumtree	2917	50-YR	360.76	360.58	0.18			312.65	970.43	111.92	268.01	0.40
Plumtree	2917	100-YR	361.14	360.91	0.24			448.57	1169.34	147.09	285.43	0.52
Plumtree	2917	7-30-2016	361.52	361.24	0.28			609.44	1361.55	186.01	302.99	0.65
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	354.48	354.23	0.25	0.25	0.03	0.27	193.73		35.30	0.65
Plumtree	2827	2-YR	355.15	354.88	0.27	0.24	0.01	4.90	289.37	0.73	58.20	0.64
Plumtree	2827	10-YR	356.68	356.04	0.64	0.31	0.16	27.61	696.35	17.04	123.18	1.35
Plumtree	2827	50-YR	357.76	357.25	0.51	0.25	0.12	359.53	970.41	65.06	167.47	1.27
Plumtree	2827	100-YR	358.27	357.71	0.55	0.25	0.14	513.02	1147.52	104.46	180.62	1.41
Plumtree	2827	7-30-2016	358.75	358.17	0.58	0.24	0.15	689.72	1316.63	150.65	191.93	1.51
Plumtree	2759	1-YR	354.20	354.01	0.19	0.44	0.02	3.00	190.89	0.11	38.10	0.40
Plumtree	2759	2-YR	354.90	354.65	0.25	0.45	0.04	20.74	267.81	6.45	102.66	0.54
Plumtree	2759	10-YR	356.20	355.89	0.31	0.59	0.03	175.08	459.67	106.25	183.88	0.88
Plumtree	2759	50-YR	357.39	357.12	0.27	0.62	0.00	453.73	603.97	337.30	234.40	0.96
Plumtree	2759	100-YR	357.88	357.60	0.28	0.59	0.01	614.78	679.23	471.00	251.48	1.03
Plumtree	2759	7-30-2016	358.35	358.08	0.27	0.56	0.01	788.54	747.32	621.14	267.31	1.07
Plumtree	2589	1-YR	353.74	353.61	0.13	0.61	0.07		112.49	81.51	67.53	0.44
Plumtree	2589	2-YR	354.42	354.29	0.13	0.53	0.07	0.88	146.53	147.60	107.81	0.47
Plumtree	2589	10-YR	355.57	355.38	0.20	0.50	0.02	40.39	264.85	435.76	153.99	0.84
Plumtree	2589	50-YR	356.77	356.49	0.28	0.47	0.00	178.14	420.08	796.77	230.38	1.31

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	2589	100-YR	357.28	357.03	0.25	0.42	0.00	261.33	458.65	1045.02	247.37	1.27
Plumtree	2589	7-30-2016	357.79	357.55	0.24	0.38	0.00	352.56	495.32	1309.12	263.57	1.24
Plumtree	2485	1-YR	353.06	352.27	0.80	1.09	0.16	6.08	187.92		22.59	1.94
Plumtree	2485	2-YR	353.81	352.96	0.85	0.96	0.16	28.25	263.54	3.21	38.34	2.05
Plumtree	2485	10-YR	355.05	354.61	0.44	0.68	0.02	207.96	378.91	154.14	152.00	1.51
Plumtree	2485	50-YR	356.29	355.97	0.32	0.58	0.01	464.35	483.94	446.71	195.79	1.34
Plumtree	2485	100-YR	356.86	356.57	0.29	0.55	0.02	615.25	528.59	621.16	203.74	1.28
Plumtree	2485	7-30-2016	357.41	357.13	0.28	0.52	0.02	774.13	577.37	805.50	210.83	1.27
Plumtree	2331	1-YR	351.81	351.56	0.25	0.49	0.02		193.80	0.20	21.42	0.56
Plumtree	2331	2-YR	352.69	352.38	0.31	0.52	0.02	1.47	289.48	4.04	64.53	0.65
Plumtree	2331	10-YR	354.35	353.98	0.37	0.56	0.02	147.73	541.51	51.77	125.68	0.89
Plumtree	2331	50-YR	355.71	355.28	0.42	0.59	0.02	430.34	807.42	157.24	148.91	1.13
Plumtree	2331	100-YR	356.30	355.84	0.46	0.61	0.02	592.92	943.96	228.11	159.72	1.26
Plumtree	2331	7-30-2016	356.87	356.39	0.48	0.61	0.02	777.07	1073.12	306.81	169.96	1.35
Plumtree	2153	1-YR	351.30	351.13	0.18	0.38	0.00	4.88	189.12		21.90	0.37
Plumtree	2153	2-YR	352.15	351.90	0.24	0.47	0.01	23.02	271.98		73.87	0.51
Plumtree	2153	10-YR	353.77	353.46	0.31	0.53	0.01	251.79	479.82	9.39	122.71	0.82
Plumtree	2153	50-YR	355.09	354.74	0.36	0.56	0.00	644.59	687.32	63.09	142.84	1.09
Plumtree	2153	100-YR	355.67	355.28	0.39	0.56	0.00	873.68	789.67	101.66	149.50	1.23
Plumtree	2153	7-30-2016	356.23	355.83	0.41	0.55	0.01	1121.77	885.20	150.03	156.45	1.32
Plumtree	1994	1-YR	350.92	350.69	0.22	0.32	0.00	1.34	192.66		27.63	0.48
Plumtree	1994	2-YR	351.66	351.33	0.33	0.36	0.01	10.53	284.30	0.17	81.53	0.69
Plumtree	1994	10-YR	353.23	352.86	0.37	0.36	0.02	197.57	494.04	49.40	133.39	0.97
Plumtree	1994	50-YR	354.53	354.14	0.39	0.37	0.01	499.27	702.12	193.62	171.19	1.20
Plumtree	1994	100-YR	355.11	354.72	0.38	0.36	0.01	681.49	784.28	299.23	176.56	1.23
Plumtree	1994	7-30-2016	355.68	355.30	0.38	0.35	0.00	882.09	872.17	402.74	188.61	1.28
Plumtree	1888	1-YR	350.59	350.34	0.25	0.06	0.01	8.36	179.81	5.83	49.34	0.56
Plumtree	1888	2-YR	351.29	351.00	0.29	0.06	0.01	31.39	243.68	19.93	73.28	0.67
Plumtree	1888	10-YR	352.85	352.55	0.31	0.06	0.01	187.40	415.36	138.25	135.25	0.90
Plumtree	1888	50-YR	354.15	353.80	0.35	0.06	0.02	432.89	599.77	362.34	160.47	1.17
Plumtree	1888	100-YR	354.74	354.38	0.36	0.07	0.03	578.55	685.11	501.34	170.01	1.26
Plumtree	1888	7-30-2016	355.33	354.96	0.37	0.07	0.04	742.13	770.00	644.86	180.95	1.33
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	350.35	350.25	0.10	0.41	0.04	50.19	143.81		72.27	0.27
Plumtree	1830	2-YR	351.02	350.92	0.11	0.47	0.08	102.00	192.94	0.06	98.15	0.30
Plumtree	1830	10-YR	352.60	352.47	0.13	0.52	0.14	326.73	351.04	63.23	152.68	0.42
Plumtree	1830	50-YR	353.86	353.67	0.19	0.56	0.12	627.90	551.27	215.83	157.05	0.63
Plumtree	1830	100-YR	354.42	354.21	0.22	0.58	0.10	792.89	660.11	312.00	160.33	0.74
Plumtree	1830	7-30-2016	354.99	354.74	0.25	0.58	0.08	961.38	773.57	422.05	165.72	0.85
Plumtree	1641	1-YR	349.90	349.67	0.23	0.28	0.05	19.94	174.05	0.01	31.21	0.53
Plumtree	1641	2-YR	350.47	350.10	0.37	0.39	0.08	37.56	255.59	1.84	65.80	0.86
Plumtree	1641	10-YR	351.94	351.34	0.60	0.62	0.12	140.57	489.06	111.36	116.71	1.62
Plumtree	1641	50-YR	353.18	352.60	0.58	0.67	0.08	311.85	680.45	402.70	148.16	1.85
Plumtree	1641	100-YR	353.74	353.18	0.56	0.64	0.08	413.25	763.30	588.45	157.83	1.89
Plumtree	1641	7-30-2016	354.33	353.80	0.52	0.57	0.07	528.34	835.19	793.48	167.82	1.85
Plumtree	1463	1-YR	349.57	349.50	0.07	0.36	0.01	3.92	187.01	3.07	98.09	0.16
Plumtree	1463	2-YR	350.00	349.89	0.11	0.43	0.01	18.80	266.47	9.73	117.70	0.24
Plumtree	1463	10-YR	351.20	350.98	0.22	0.51	0.01	135.65	539.98	65.37	147.91	0.54
Plumtree	1463	50-YR	352.42	352.13	0.30	0.46	0.04	367.52	844.27	183.21	181.84	0.79
Plumtree	1463	100-YR	353.03	352.72	0.31	0.41	0.05	522.58	977.65	264.78	195.20	0.85
Plumtree	1463	7-30-2016	353.69	353.39	0.29	0.35	0.05	696.93	1089.60	370.47	206.47	0.84
Plumtree	1291	1-YR	349.21	349.04	0.17	0.64	0.00	159.15	248.85		220.05	0.55
Plumtree	1291	2-YR	349.56	349.38	0.19	0.59	0.01	270.94	310.00	0.06	239.14	0.68
Plumtree	1291	10-YR	350.68	350.50	0.18	0.47	0.02	836.45	473.55	6.00	314.30	0.82
Plumtree	1291	50-YR	351.92	351.76	0.16	0.38	0.01	1693.97	625.93	31.10	396.89	0.81
Plumtree	1291	100-YR	352.57	352.42	0.15	0.33	0.00	2261.18	682.92	50.90	413.55	0.75
Plumtree	1291	7-30-2016	353.29	353.15	0.14	0.30	0.00	2952.81	751.07	78.11	422.07	0.70
Plumtree	1124	1-YR	348.57	348.35	0.21	0.46	0.03	144.59	263.41		243.41	0.68
Plumtree	1124	2-YR	348.96	348.81	0.15	0.37	0.01	295.12	285.88		261.49	0.58
Plumtree	1124	10-YR	350.19	350.07	0.12	0.30	0.00	911.34	403.64	1.01	281.73	0.56
Plumtree	1124	50-YR	351.53	351.41	0.13	0.25	0.00	1775.59	559.09	16.31	311.21	0.59
Plumtree	1124	100-YR	352.23	352.10	0.13	0.24	0.00	2307.64	650.29	37.07	325.49	0.61
Plumtree	1124	7-30-2016	352.99	352.85	0.14	0.23	0.01	2950.35	758.38	73.27	337.57	0.65
Plumtree	994	1-YR	348.08	347.96	0.13	0.25	0.00	143.78	264.22		183.00	0.42
Plumtree	994	2-YR	348.58	348.47	0.11	0.19	0.00	264.37	316.63		206.46	0.38
Plumtree	994	10-YR	349.89	349.75	0.13	0.17	0.00	752.10	562.30	1.59	235.38	0.49
Plumtree	994	50-YR	351.28	351.11	0.16	0.16	0.00	1461.15	868.79	21.07	271.54	0.59
Plumtree	994	100-YR	351.99	351.81	0.18	0.15	0.00	1903.41	1046.53	45.06	288.19	0.64

HEC-RAS Plan: A River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	994	7-30-2016	352.75	352.55	0.20	0.15	0.01	2446.40	1251.88	83.72	303.86	0.70
Plumtree	911	1-YR	347.82	347.65	0.17	0.54	0.01	153.68	254.32		193.54	0.55
Plumtree	911	2-YR	348.39	348.27	0.12	0.47	0.03	303.96	277.04		213.59	0.43
Plumtree	911	10-YR	349.71	349.59	0.13	0.34	0.01	872.43	439.84	3.73	239.09	0.54
Plumtree	911	50-YR	351.11	350.96	0.15	0.30	0.01	1686.17	639.86	24.97	273.53	0.65
Plumtree	911	100-YR	351.83	351.66	0.17	0.28	0.01	2197.30	751.78	45.92	288.71	0.70
Plumtree	911	7-30-2016	352.60	352.42	0.18	0.27	0.01	2823.78	880.42	77.81	303.31	0.76
Plumtree	762	1-YR	347.27	347.00	0.27	0.19	0.05	97.32	310.68	0.00	66.72	0.72
Plumtree	762	2-YR	347.89	347.52	0.38	0.21	0.07	135.98	442.36	2.66	161.19	0.99
Plumtree	762	10-YR	349.36	349.12	0.24	0.17	0.03	572.33	636.09	107.59	242.04	0.80
Plumtree	762	50-YR	350.81	350.58	0.22	0.15	0.02	1162.24	872.19	316.56	281.55	0.82
Plumtree	762	100-YR	351.54	351.31	0.23	0.14	0.02	1530.64	1008.77	455.60	300.48	0.85
Plumtree	762	7-30-2016	352.32	352.09	0.23	0.14	0.02	1974.05	1162.00	645.95	314.67	0.88
Plumtree	658	1-YR	347.04	346.92	0.12	0.14	0.00	8.35	391.85	7.80	174.69	0.23
Plumtree	658	2-YR	347.62	347.48	0.14	0.13	0.02	37.17	504.57	39.26	225.88	0.28
Plumtree	658	10-YR	349.16	349.02	0.15	0.12	0.02	258.78	798.50	258.72	301.02	0.37
Plumtree	658	50-YR	350.64	350.49	0.15	0.12	0.02	629.26	1100.31	621.43	328.76	0.43
Plumtree	658	100-YR	351.38	351.22	0.16	0.12	0.02	868.73	1277.06	849.21	345.31	0.47
Plumtree	658	7-30-2016	352.16	351.99	0.17	0.12	0.02	1170.86	1483.12	1128.02	363.75	0.52
Plumtree	526	1-YR	346.90	346.78	0.11	0.25	0.01	20.73	324.30	62.97	264.39	0.27
Plumtree	526	2-YR	347.47	347.38	0.09	0.21	0.01	57.10	367.23	156.66	278.77	0.25
Plumtree	526	10-YR	349.02	348.94	0.08	0.17	0.01	218.63	547.46	549.91	311.73	0.28
Plumtree	526	50-YR	350.50	350.41	0.09	0.16	0.01	470.17	773.57	1107.26	340.24	0.34
Plumtree	526	100-YR	351.24	351.14	0.10	0.16	0.01	639.69	904.35	1450.96	352.63	0.37
Plumtree	526	7-30-2016	352.02	351.91	0.11	0.17	0.01	853.17	1058.28	1870.55	365.72	0.41
Plumtree	380	1-YR	346.63	346.39	0.24	1.36	0.09	26.53	380.03	1.45	138.09	0.52
Plumtree	380	2-YR	347.25	347.04	0.20	1.09	0.11	93.10	455.11	32.79	192.08	0.49
Plumtree	380	10-YR	348.84	348.66	0.18	0.78	0.10	381.40	704.73	229.86	219.66	0.53
Plumtree	380	50-YR	350.33	350.13	0.21	0.76	0.12	783.51	1017.30	550.19	236.20	0.64
Plumtree	380	100-YR	351.06	350.84	0.23	0.77	0.13	1030.93	1198.74	765.33	241.67	0.71
Plumtree	380	7-30-2016	351.84	351.59	0.25	0.79	0.14	1333.81	1414.34	1033.85	247.14	0.79
Plumtree	146	1-YR	345.17	343.98	1.19	0.58	0.29		408.00		19.97	2.67
Plumtree	146	2-YR	346.05	344.79	1.26	0.53	0.29	4.80	575.13	1.07	43.36	2.64
Plumtree	146	10-YR	347.96	346.75	1.21	0.45	0.20	224.58	1032.08	59.33	111.86	2.66
Plumtree	146	50-YR	349.45	348.05	1.40	0.45	0.20	658.33	1521.98	170.69	141.74	3.38
Plumtree	146	100-YR	350.16	348.63	1.53	0.46	0.21	960.28	1794.45	240.27	153.62	3.82
Plumtree	146	7-30-2016	350.91	349.23	1.68	0.46	0.22	1354.18	2102.54	325.28	164.30	4.32
Plumtree	63	1-YR	343.79	343.55	0.23				408.00		43.59	0.51
Plumtree	63	2-YR	344.47	344.18	0.29			0.04	580.94	0.02	50.01	0.61
Plumtree	63	10-YR	346.45	345.91	0.54			23.50	1281.72	10.78	84.16	0.97
Plumtree	63	50-YR	348.29	347.54	0.75			137.54	2127.33	86.14	127.03	1.32
Plumtree	63	100-YR	349.17	348.33	0.85			241.37	2594.26	159.37	139.56	1.49
Plumtree	63	7-30-2016	350.11	349.16	0.94			388.93	3129.63	263.45	150.66	1.66

Appendix H-3

Plumtree Branch: Option B Hydraulic Modeling

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017

Plumtree Plumtree

Legend

- WS 7-30-2016
- WS 100-YR
- WS 50-YR
- WS 10-YR
- WS 2-YR
- WS 1-YR
- Ground
- LOB
- ROB
- Right Levee

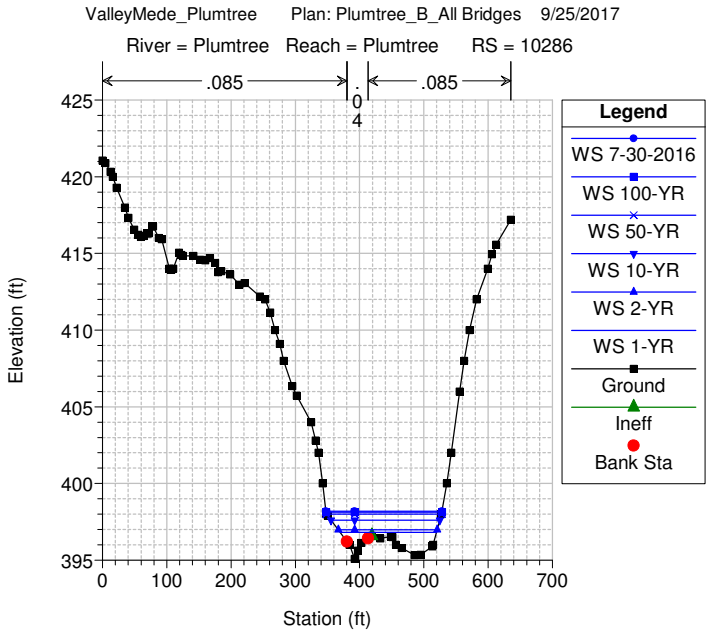
Elevation (ft)

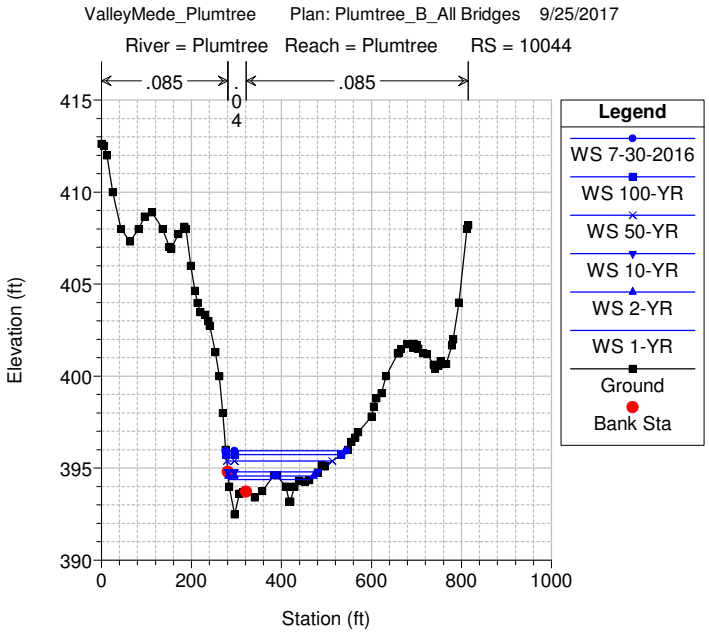
400
390
380
370
360
350
340

0
2000
4000
6000
8000
10000
12000

Main Channel Distance (ft)

380 526 762 911 1124 1291 1463 1641 1830 1994 2153 2331 2485 2589 2759 2900 Frederick Rd 2978 3077 3179 3296 3428 3550 3688 3816 3930 4033 4185 4289 4400 US 40 4636 4745 4845 5000 Longview Dr 5107 5209 5323 5419 5560 5650 Brookmede Rd 5824 5926 6028 6122 6250 Hearthstone Rd 6350 6454 6568 6663 6766 6893 7030 7216 7367 7548 7800 7954 8094 8229 8374 8579 8753 8987 9196 9301 9398 9499 9650 Michaels Way 9814 10044 10286


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 10286
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 10044
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Legend
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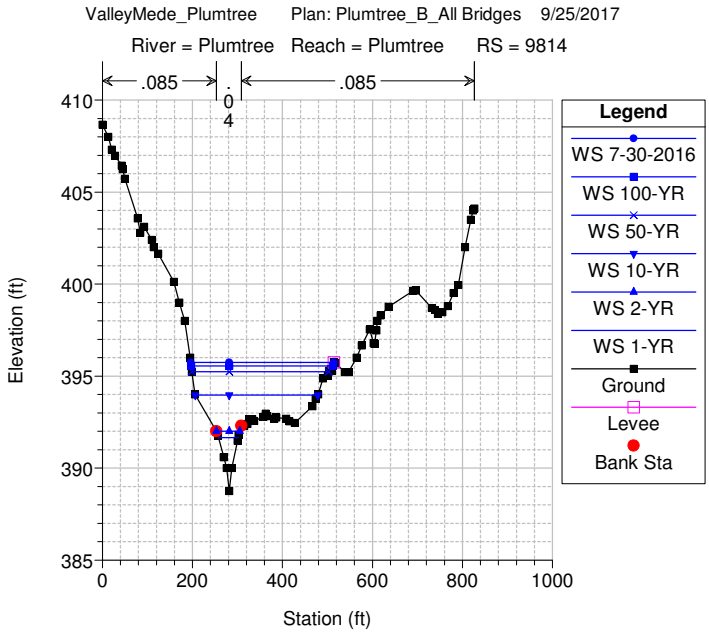
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 9814
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Legend
WS 7-30-2016
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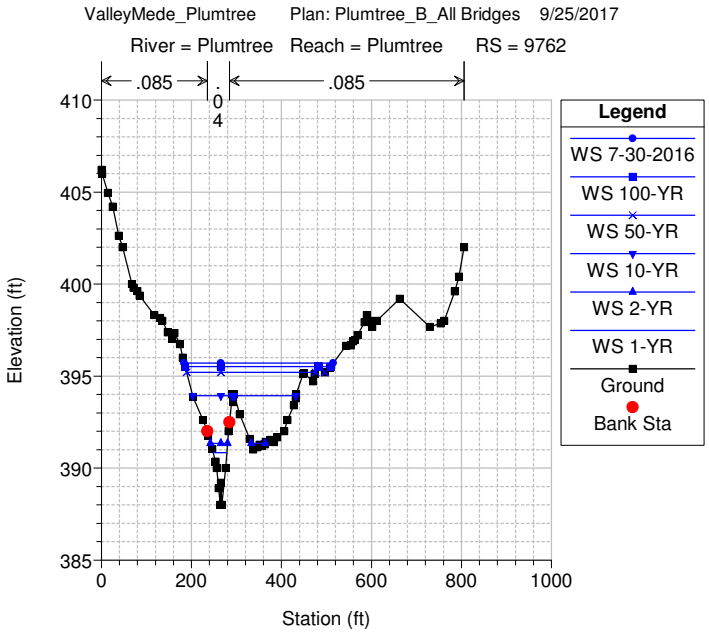
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 9762
.085
.085
Legend
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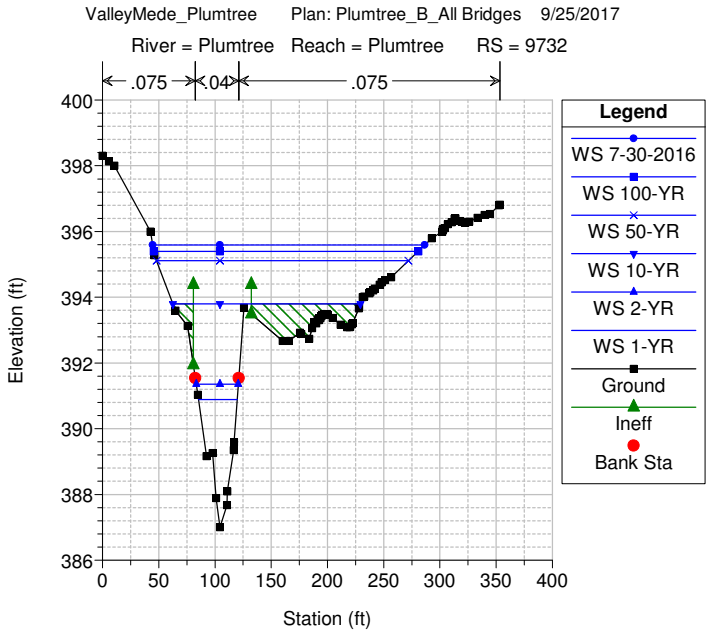
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 9732
.075
.04
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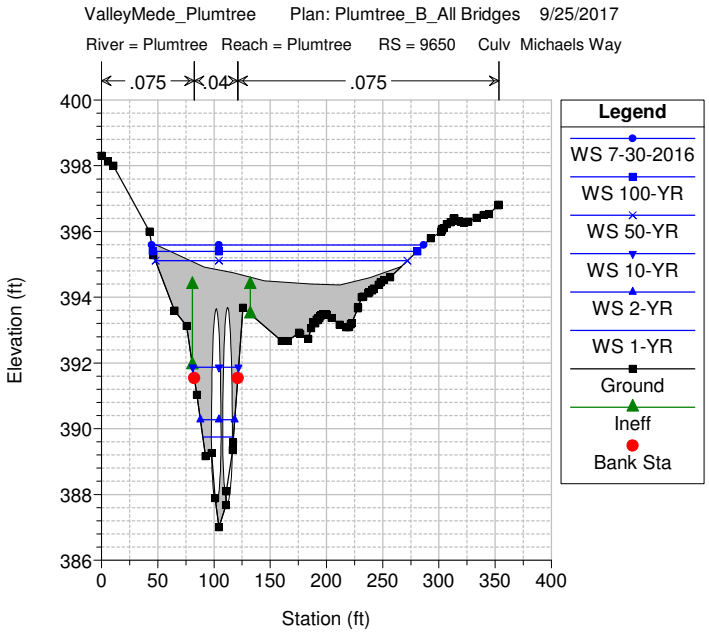
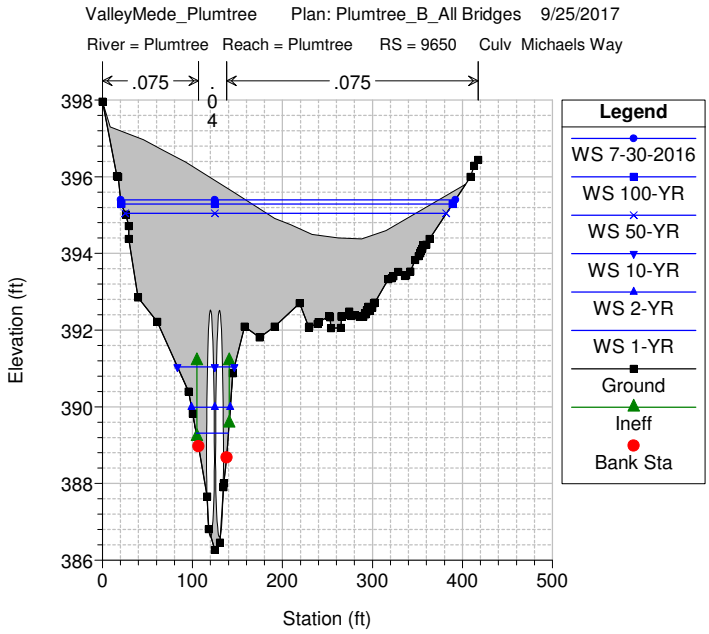
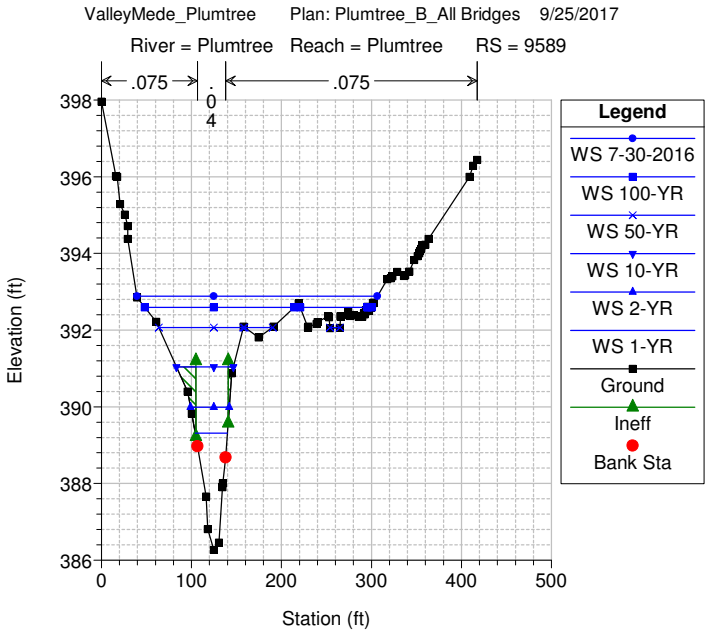
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 9589
.075
.04
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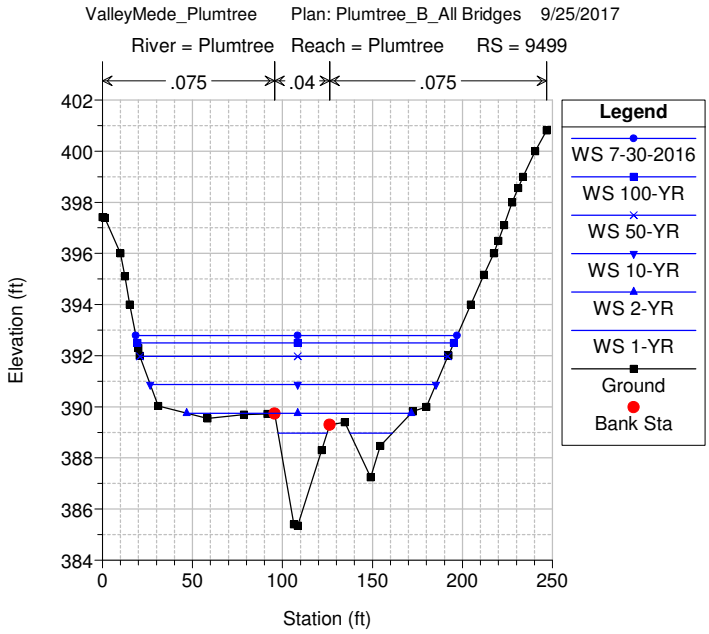
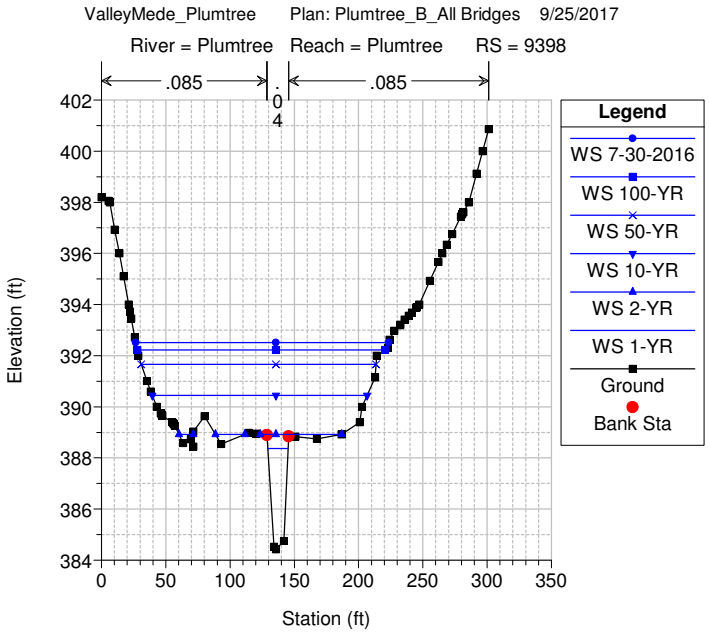
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 9499
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 9398
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.04
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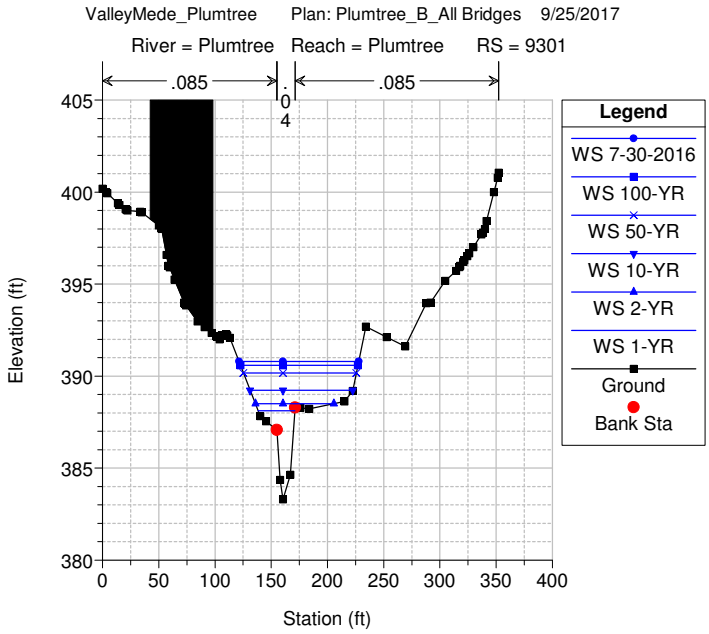
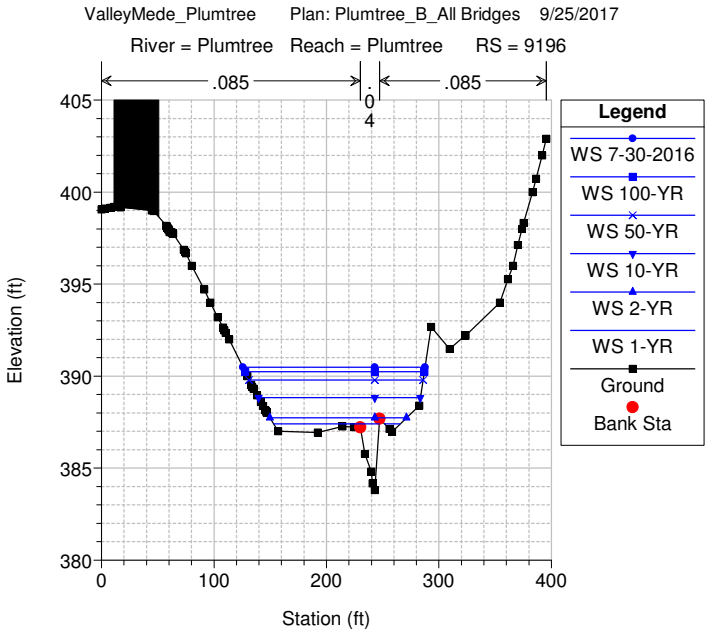
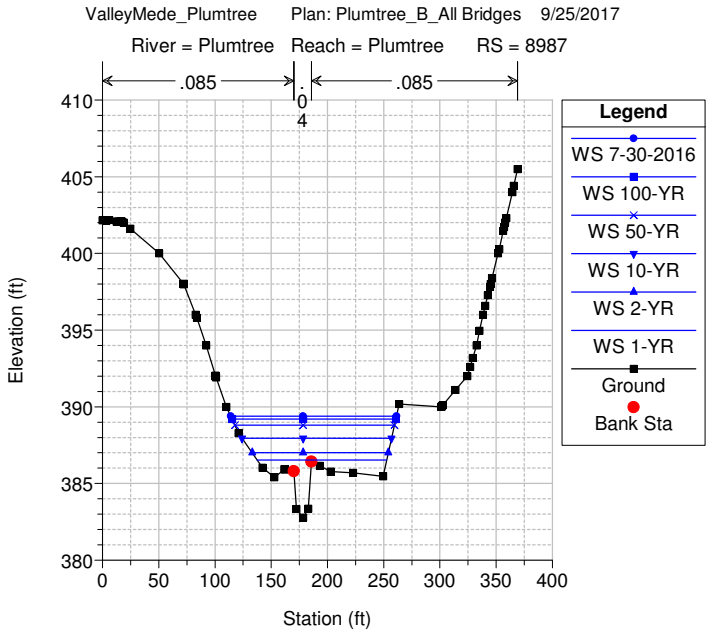
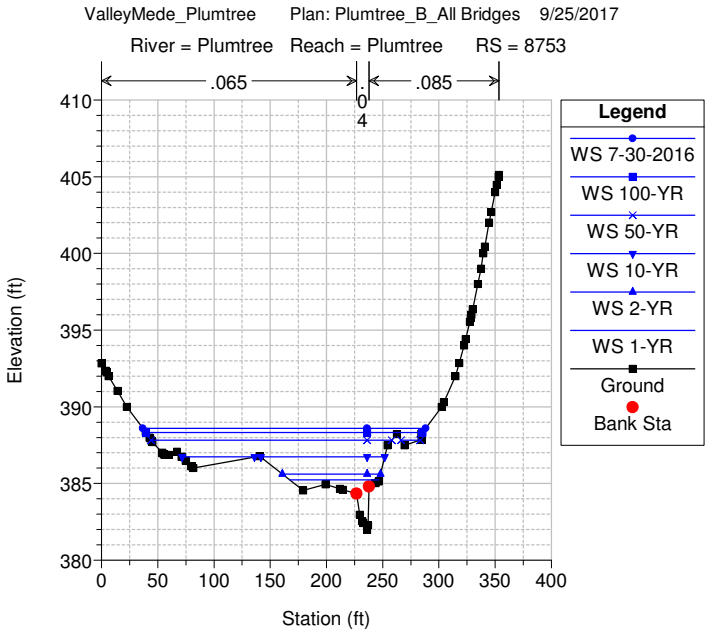
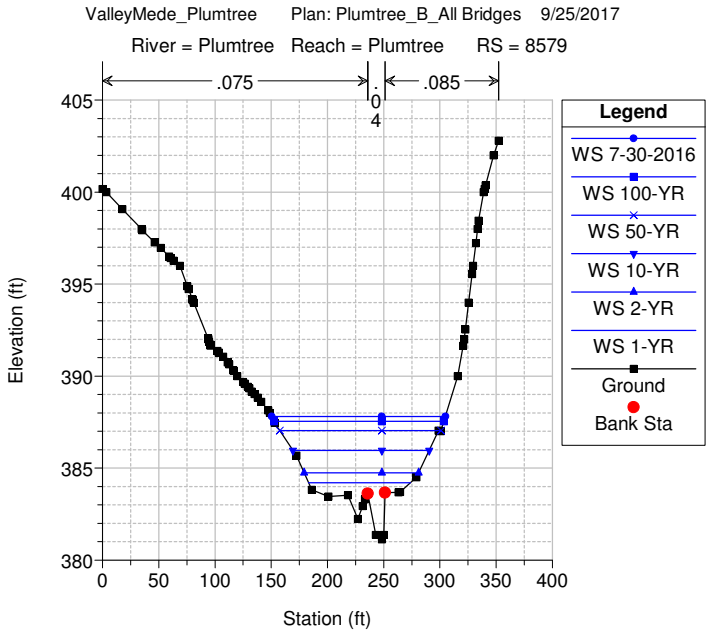
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

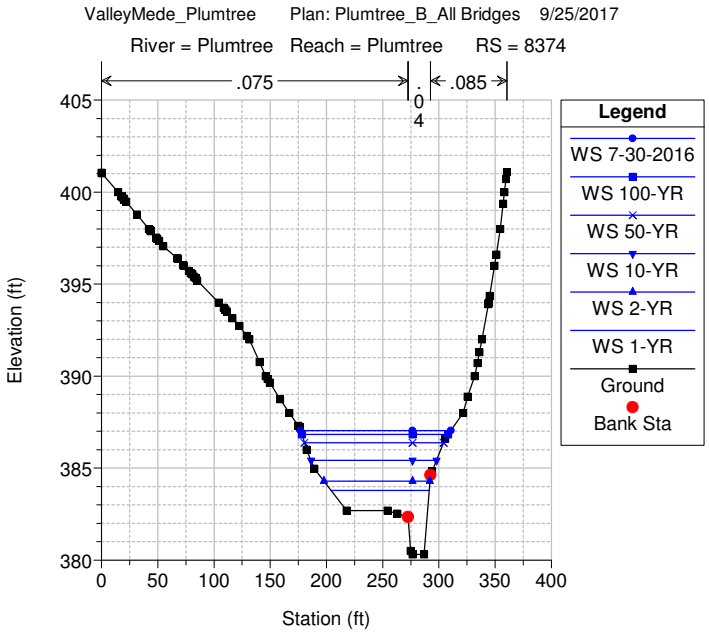

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 9301
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

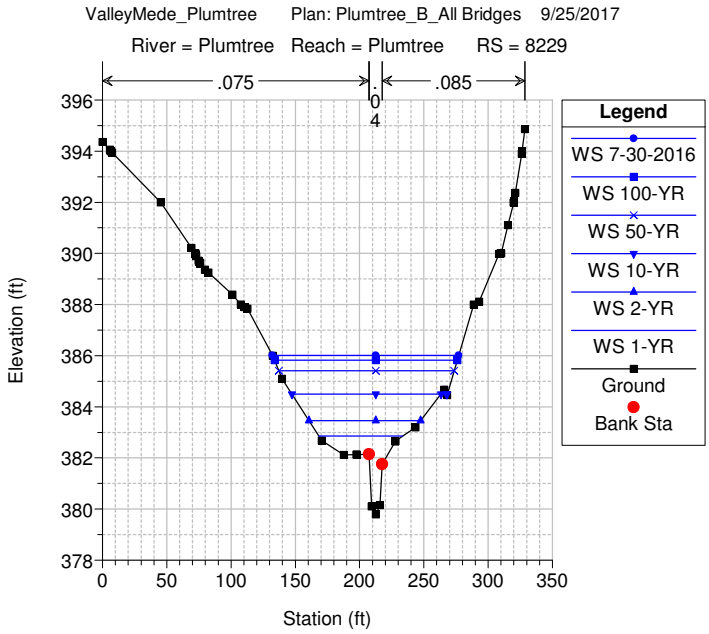

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 9196
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

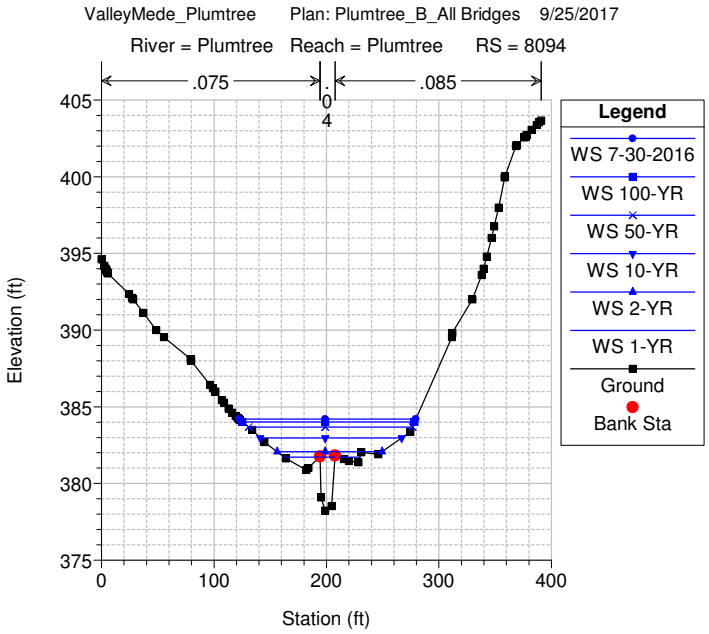

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 8987
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

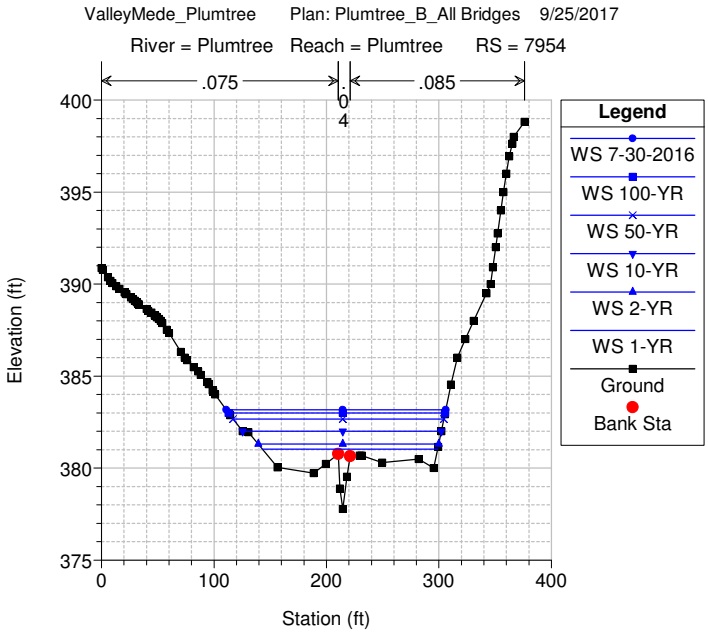

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 8753
.065
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

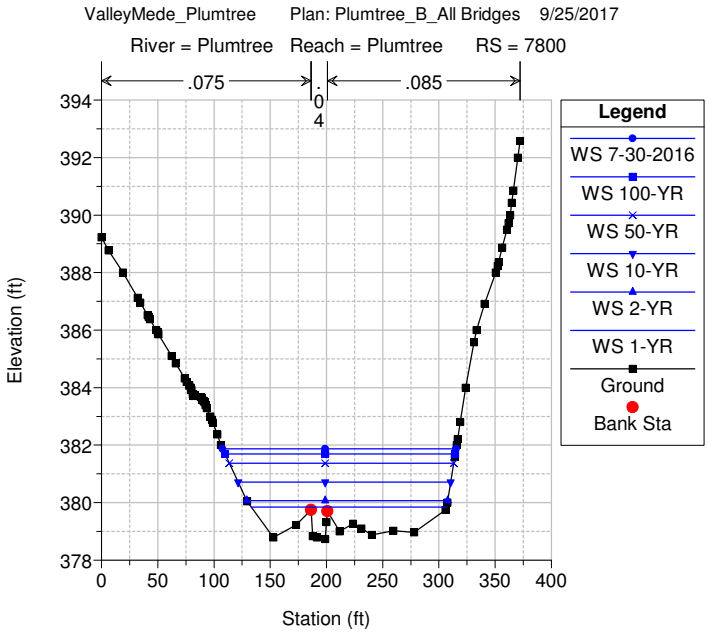

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 8579
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

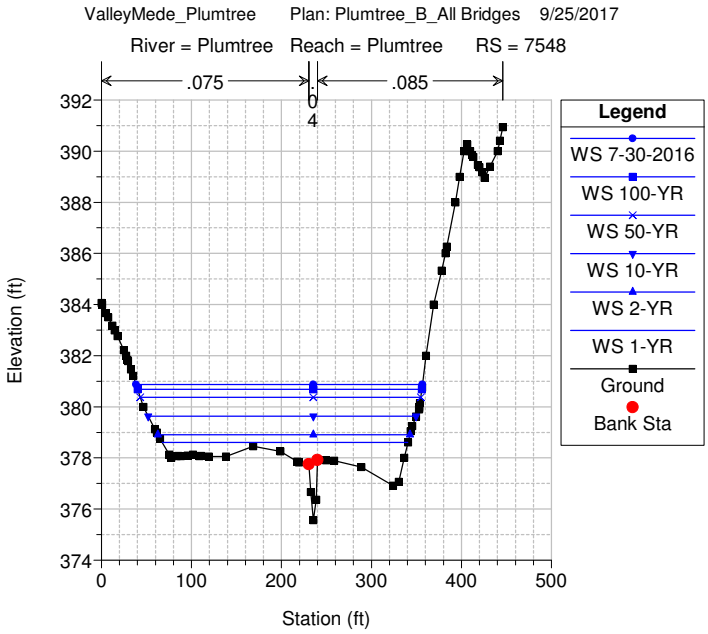

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 8374
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

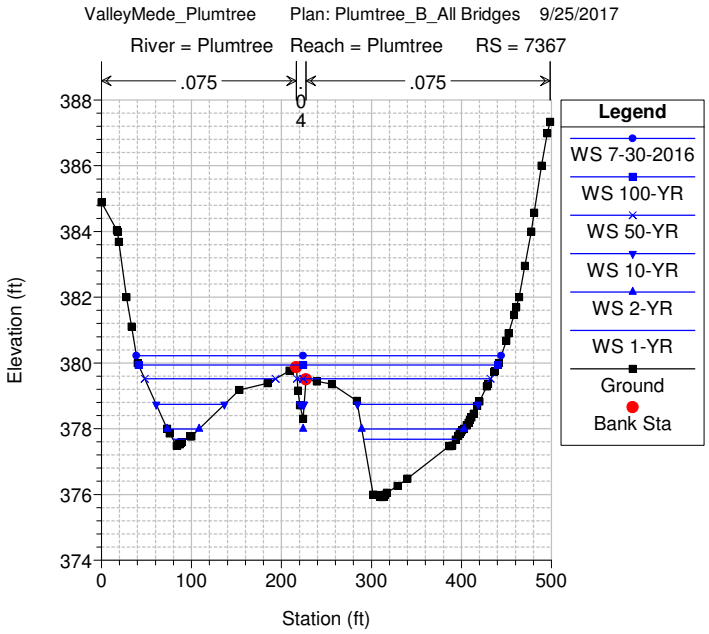

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 8229
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

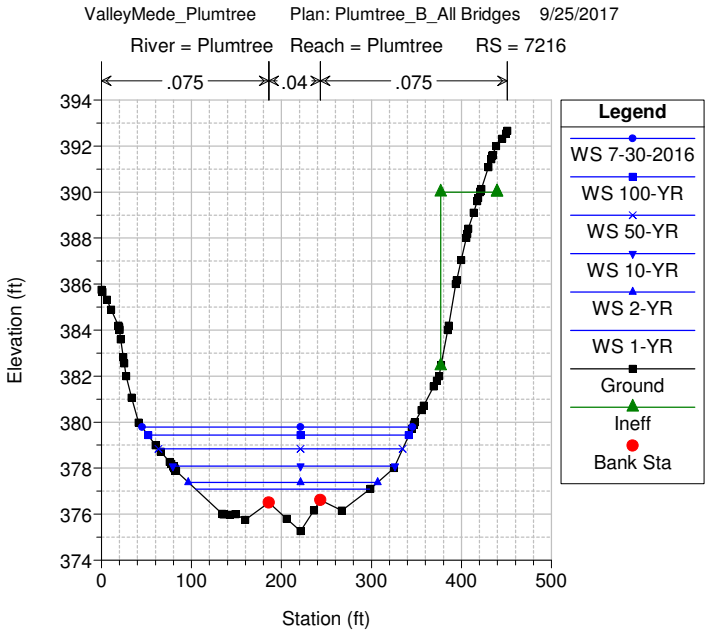

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 8094
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

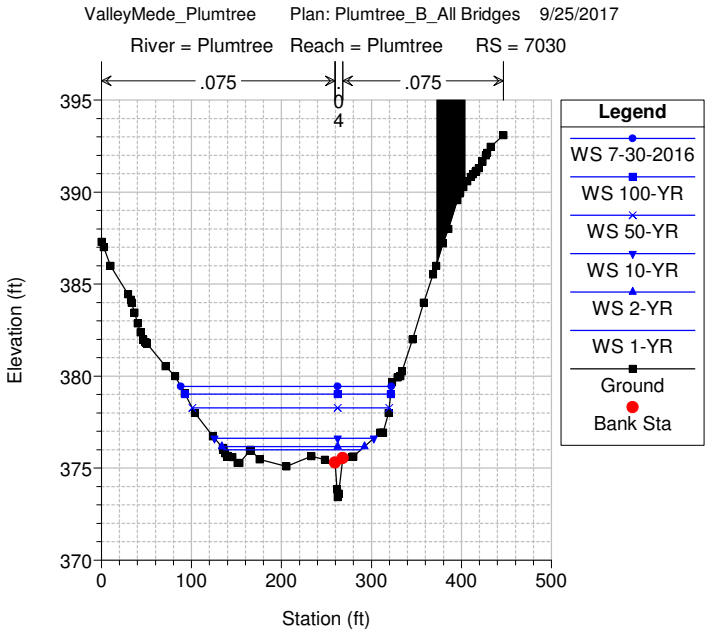

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 7954
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

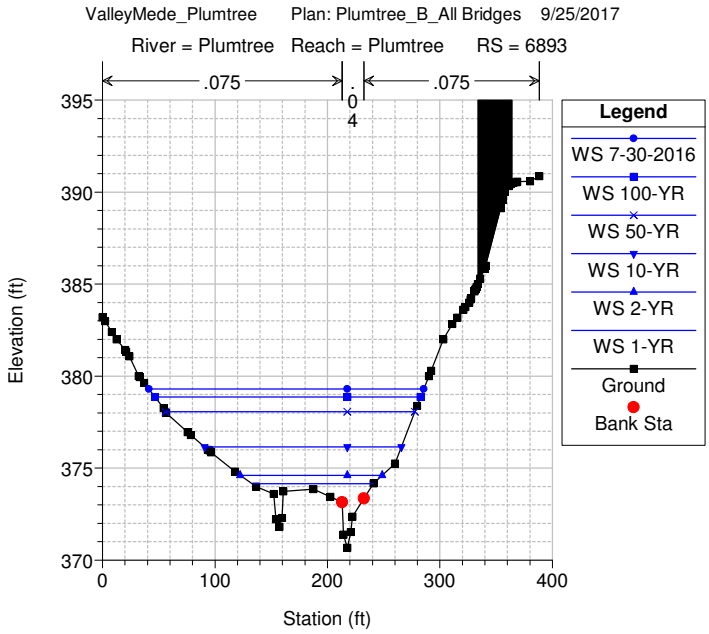

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 7800
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

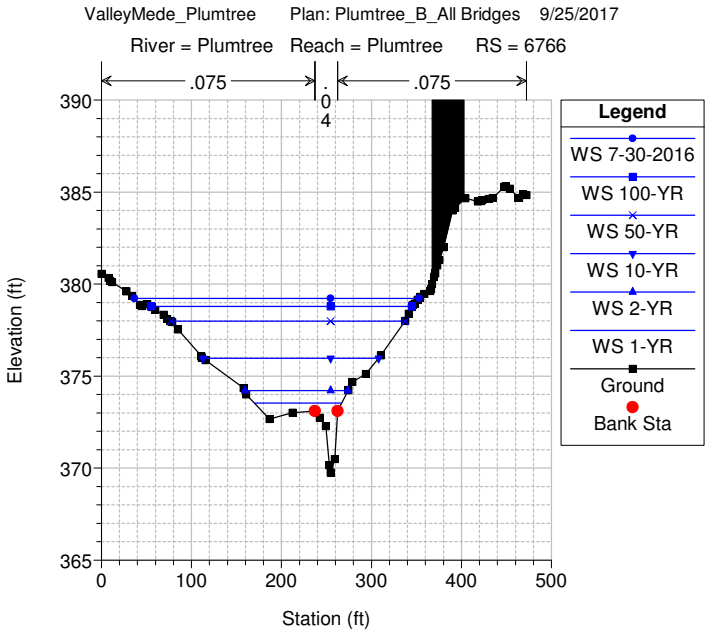

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 7548
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

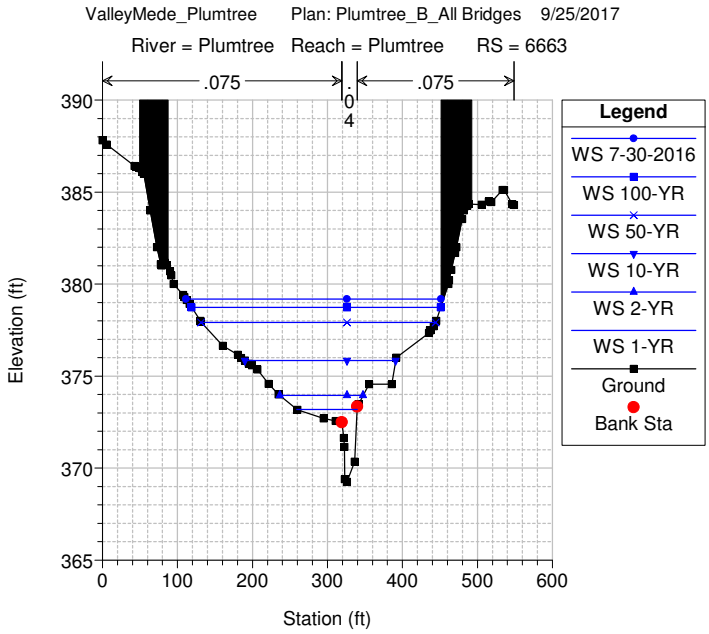

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 7367
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

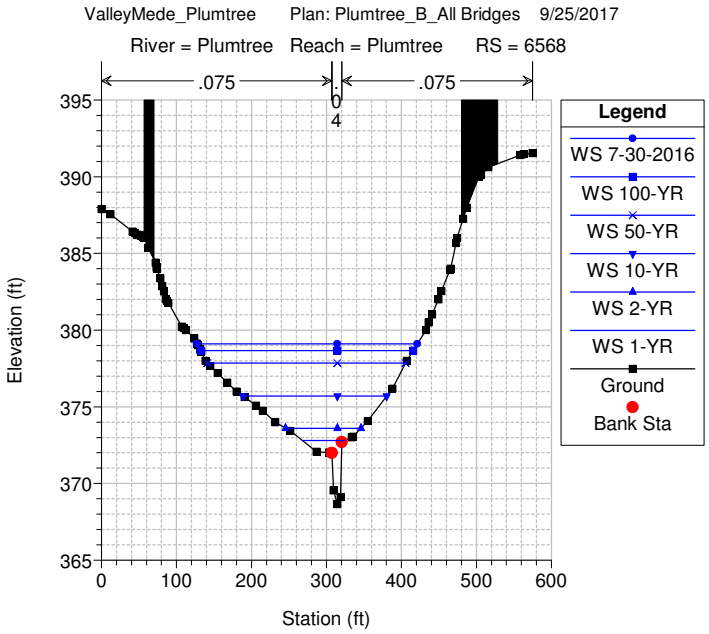

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 7216
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

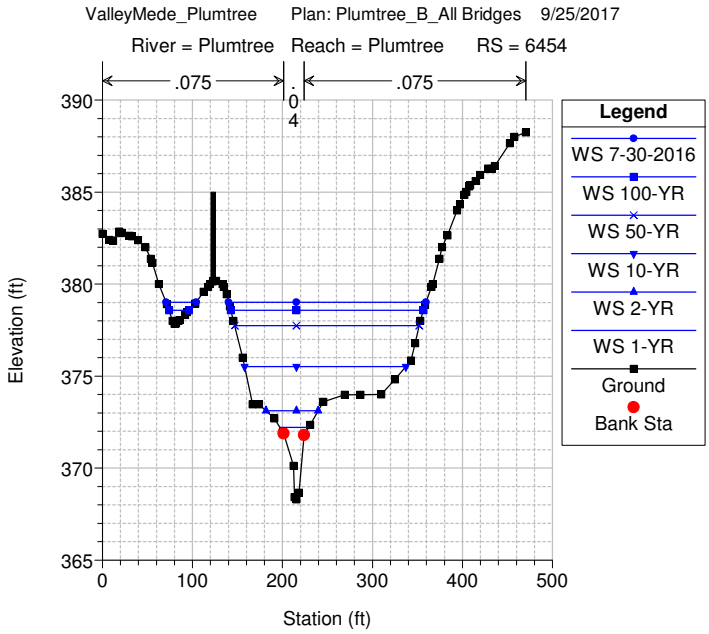

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 7030
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

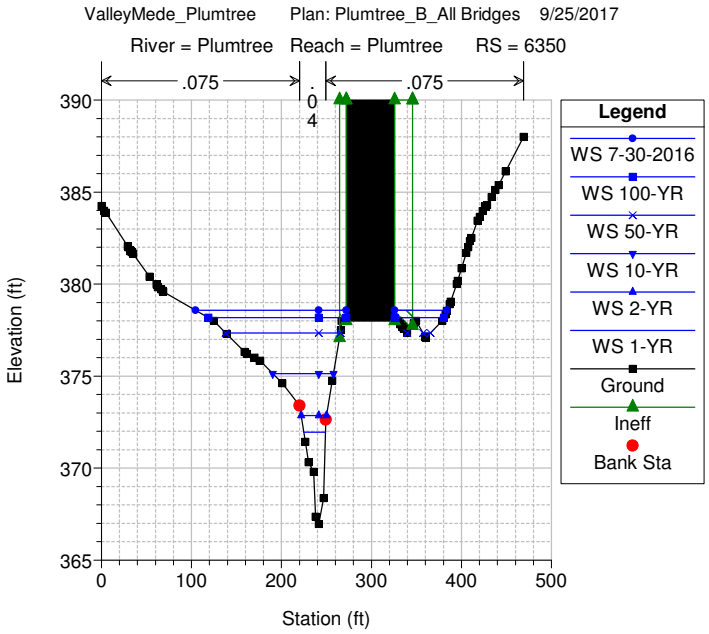

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6893
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

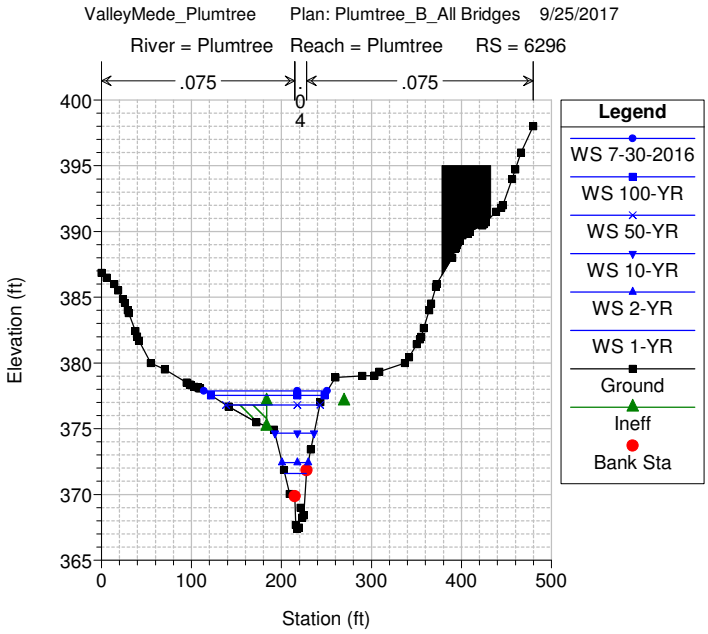

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6766
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

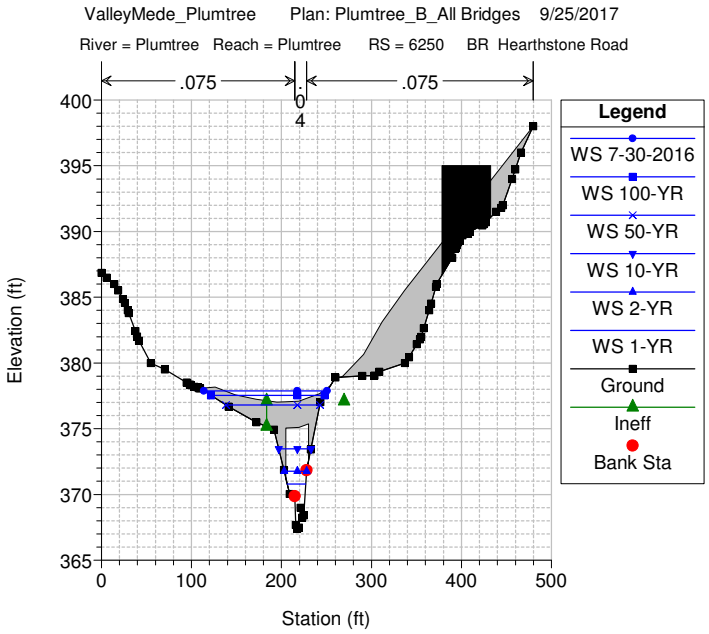

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6663
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

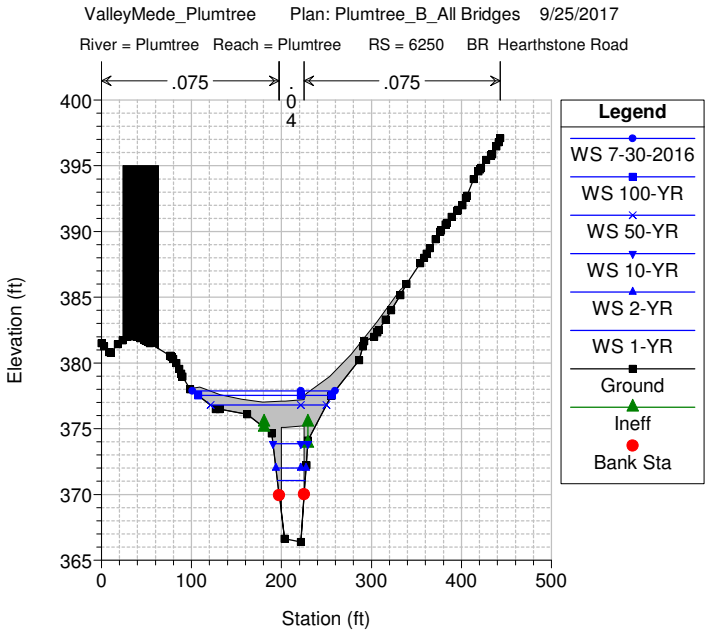

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6568
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

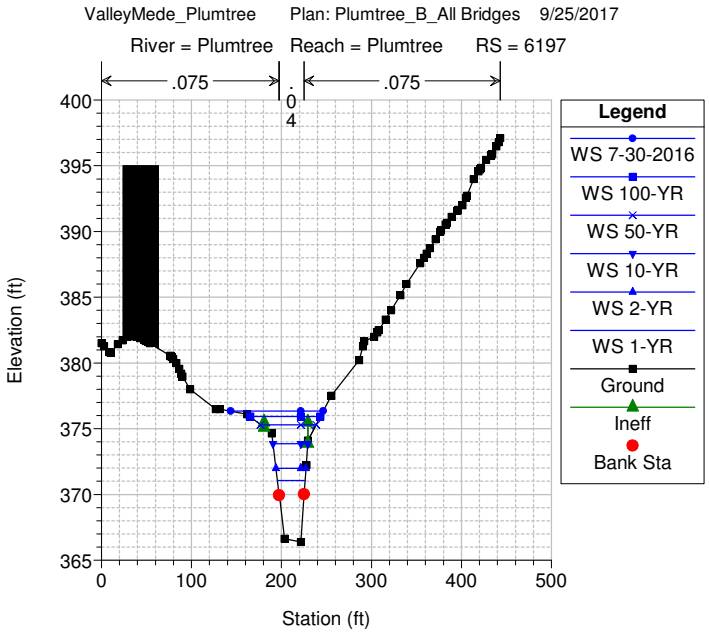

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6454
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

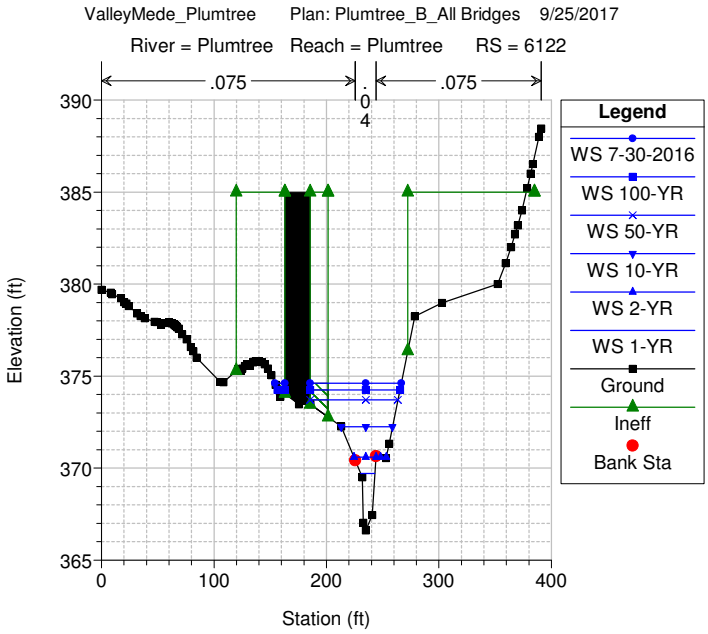

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6350
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

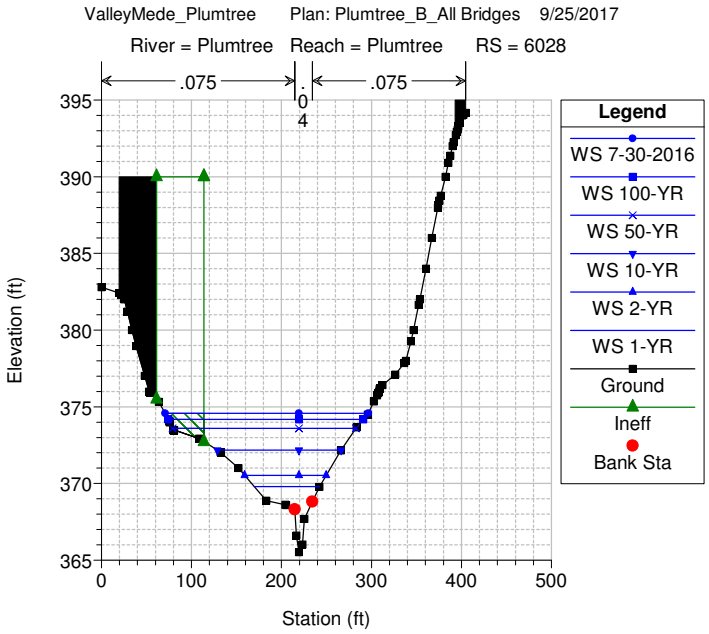

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6296
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

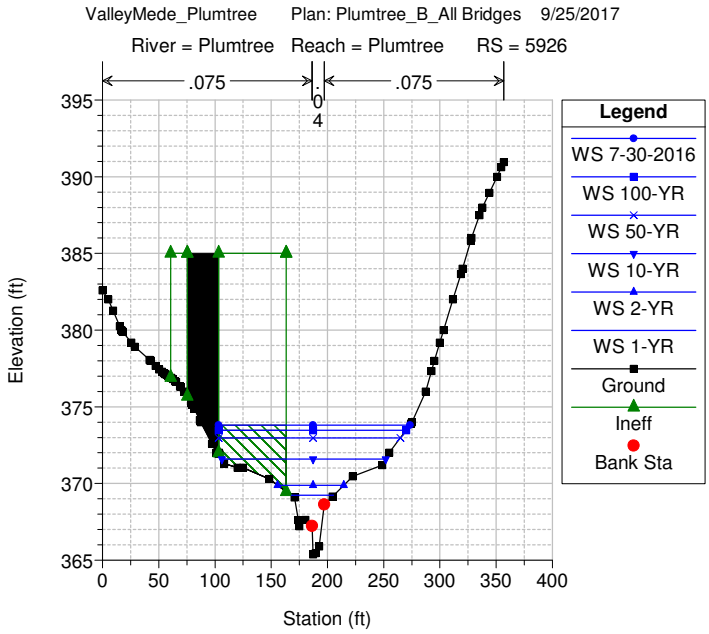

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 BR Hearthstone Road
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

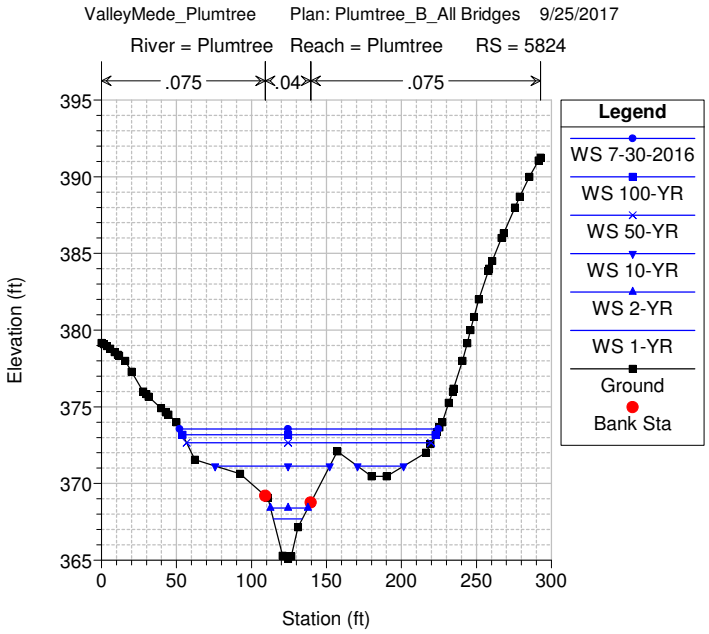

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 BR Hearthstone Road
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

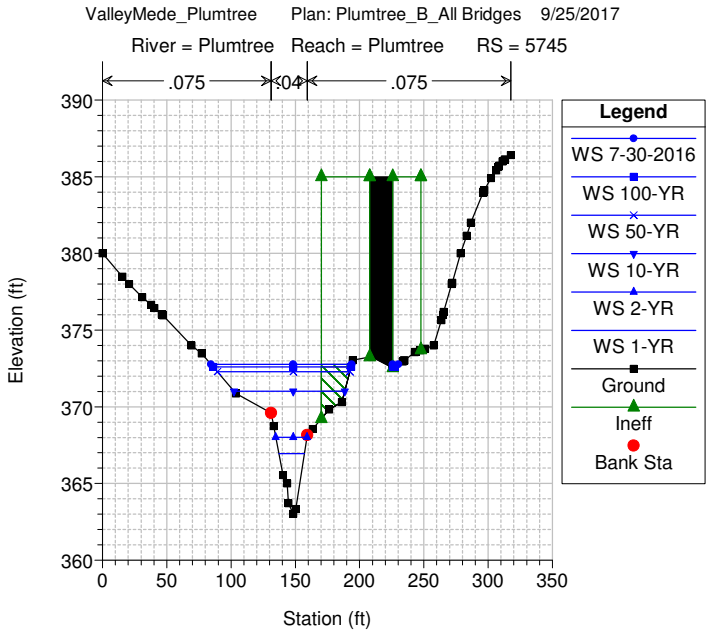

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6197
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

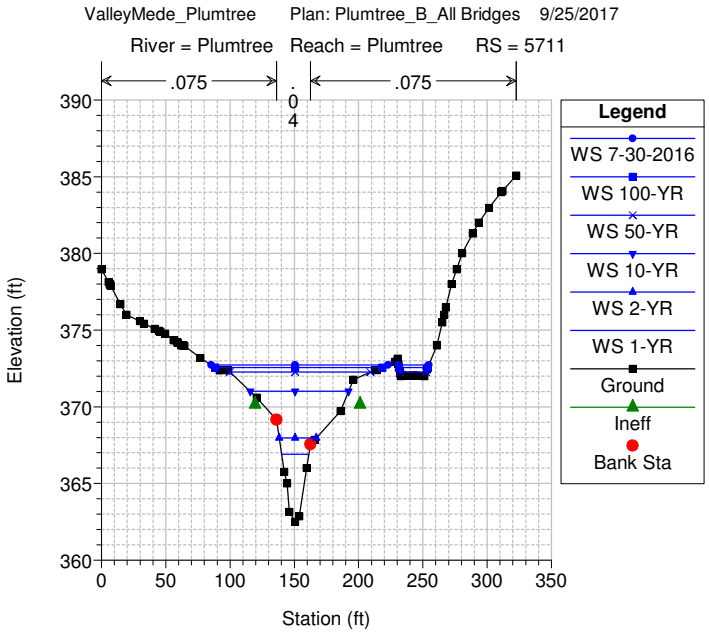

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6122
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

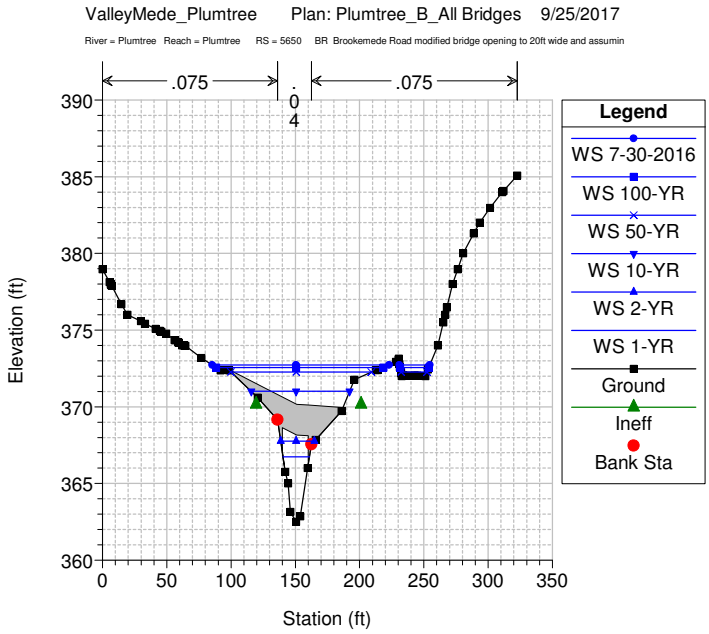

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 6028
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

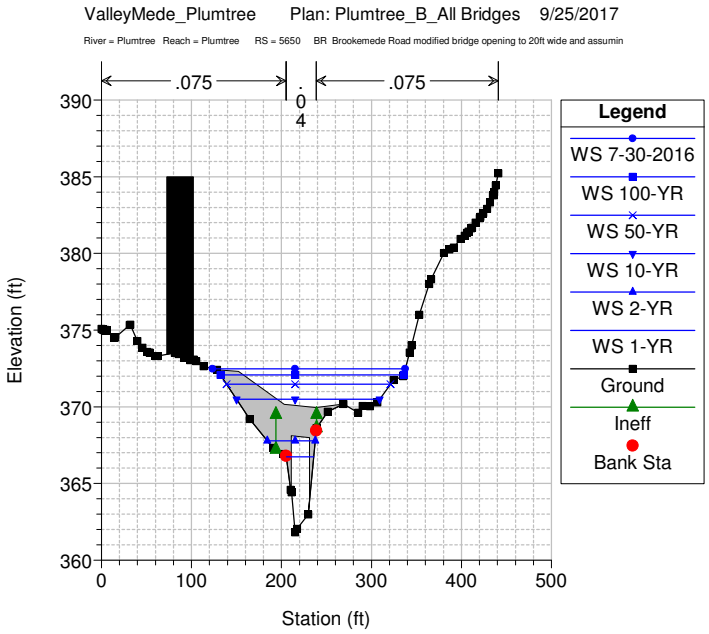

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5926
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

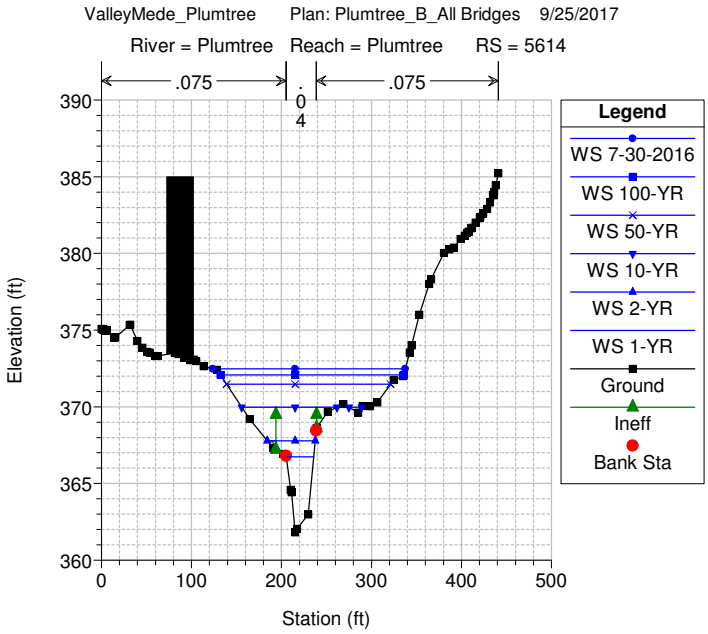

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5824
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

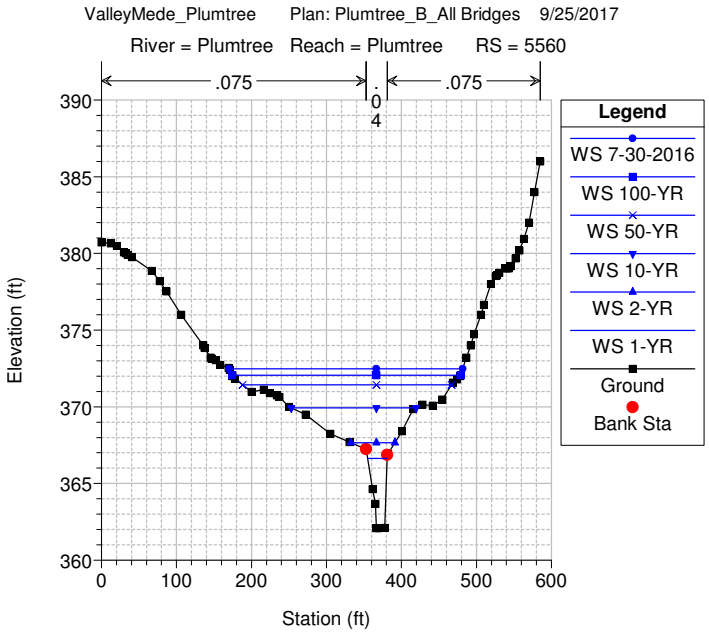

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5745
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

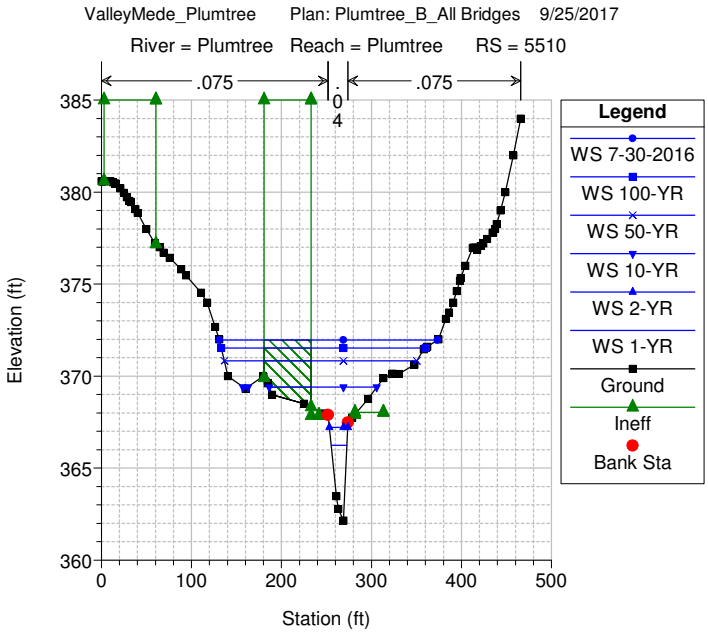

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5711
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

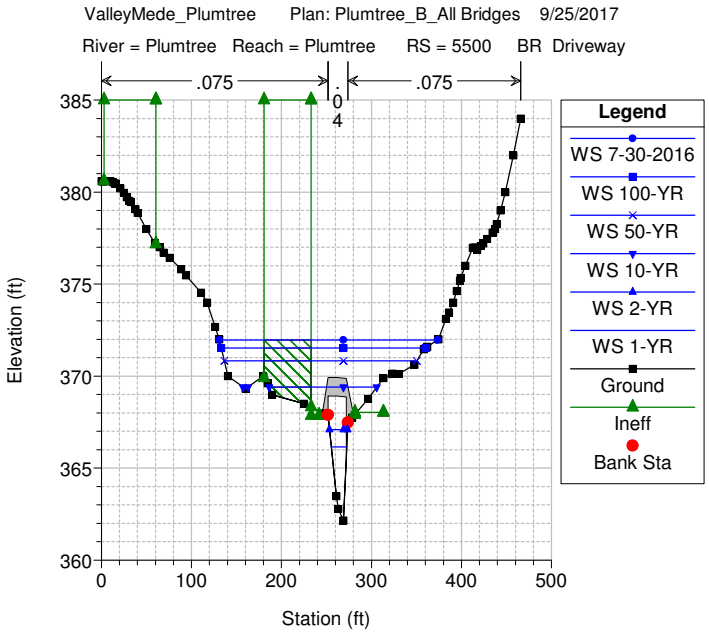

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 BR Brookemede Road modified bridge opening to 20ft wide and assumin
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

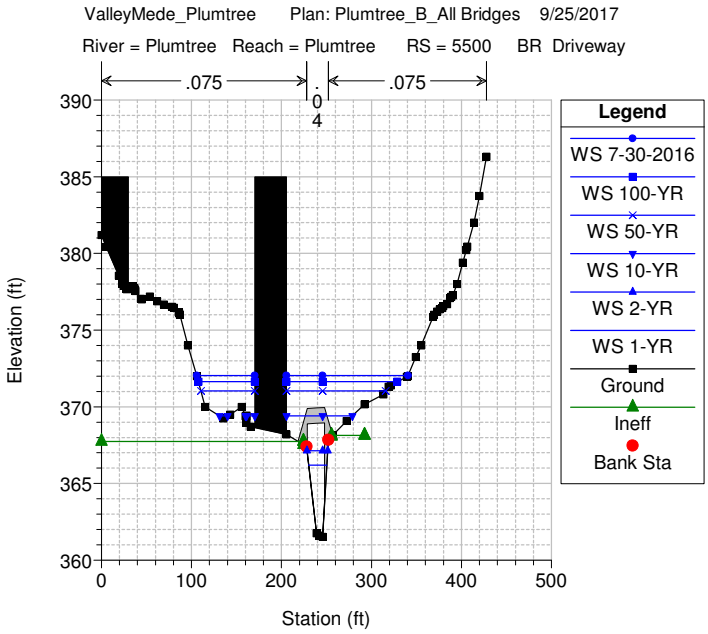

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 BR Brookemede Road modified bridge opening to 20ft wide and assumin
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

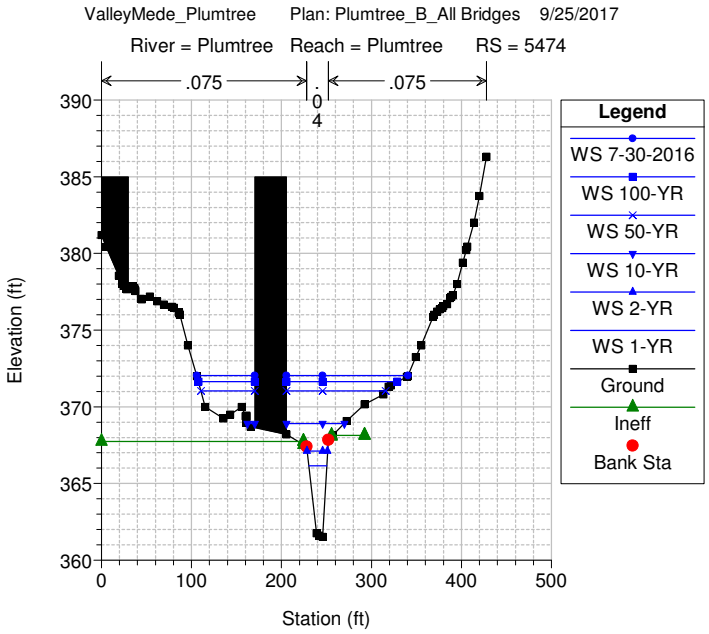

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5614
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

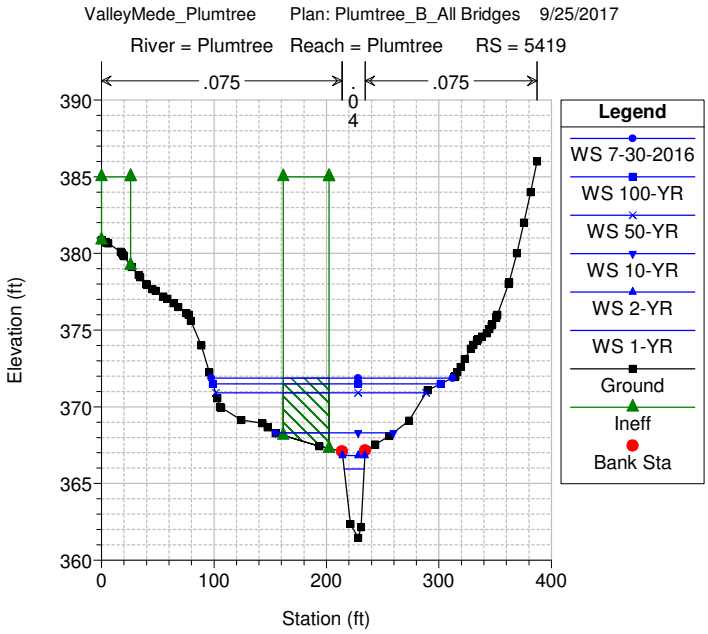

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5560
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

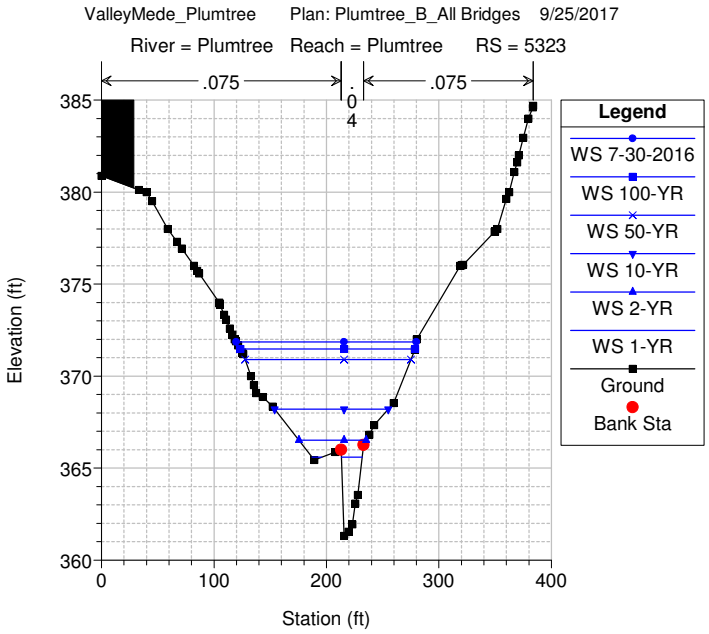

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5510
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

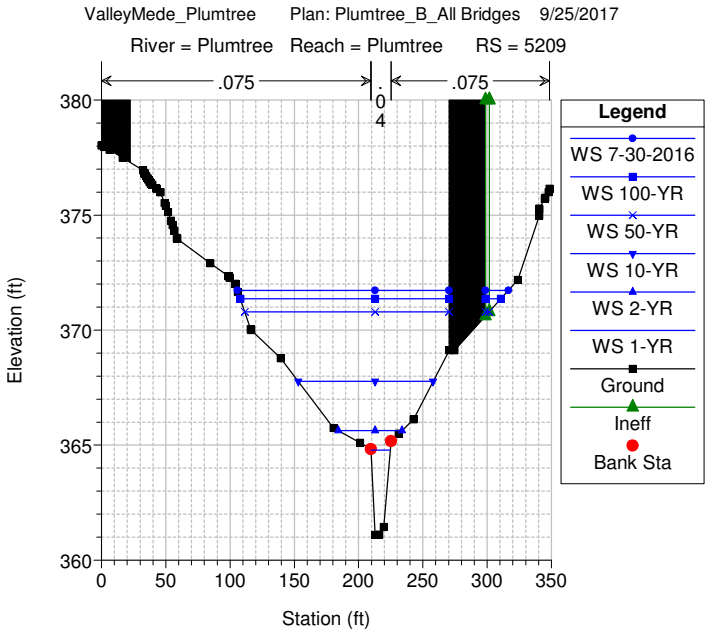

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

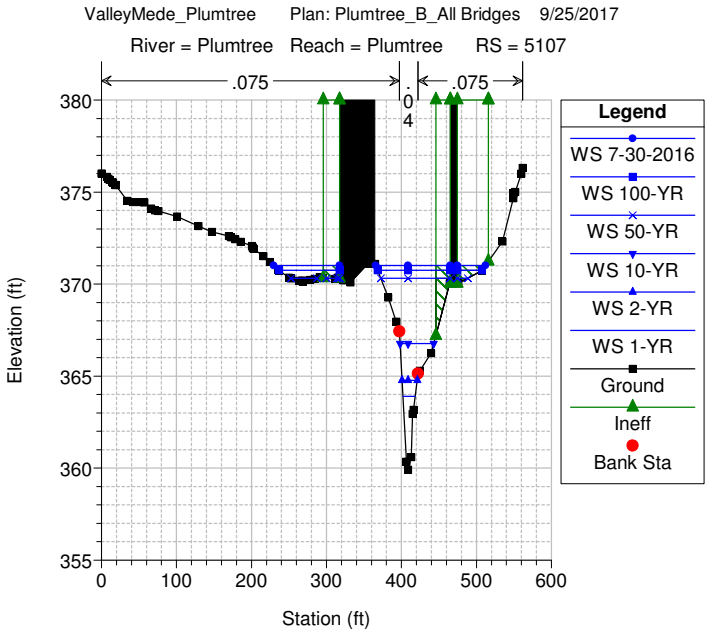

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

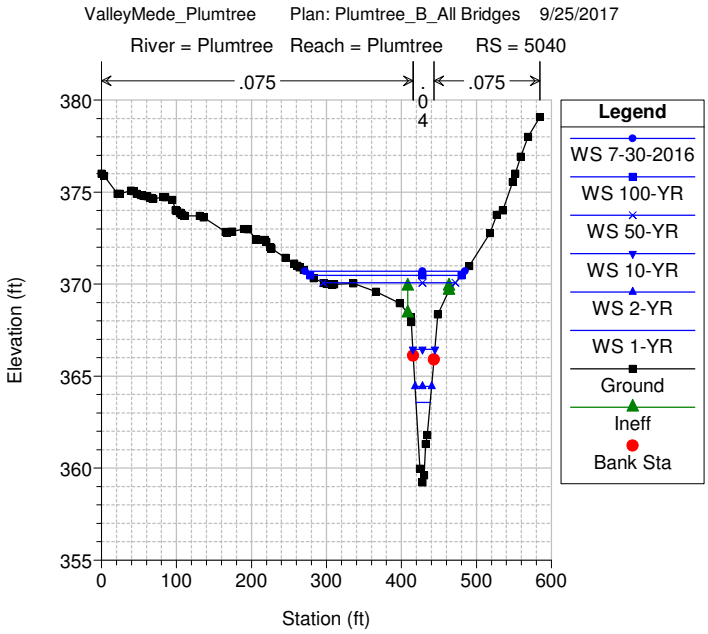

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5474
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

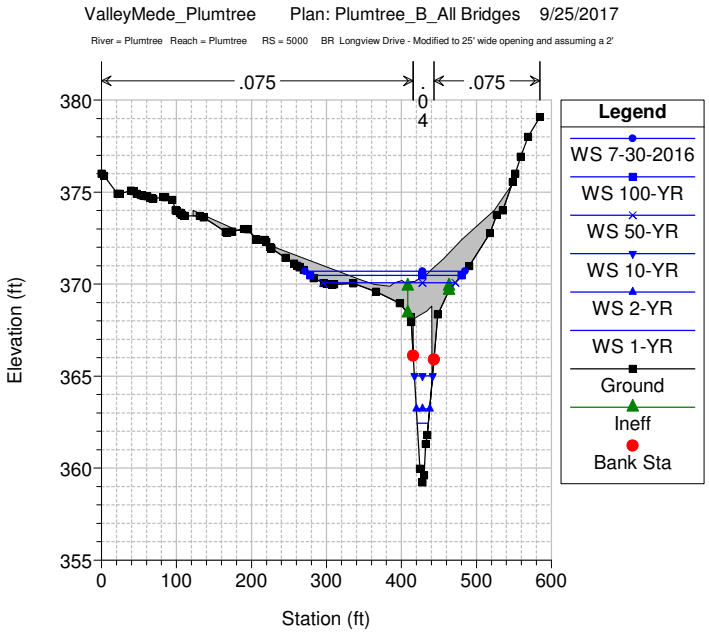

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5419
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

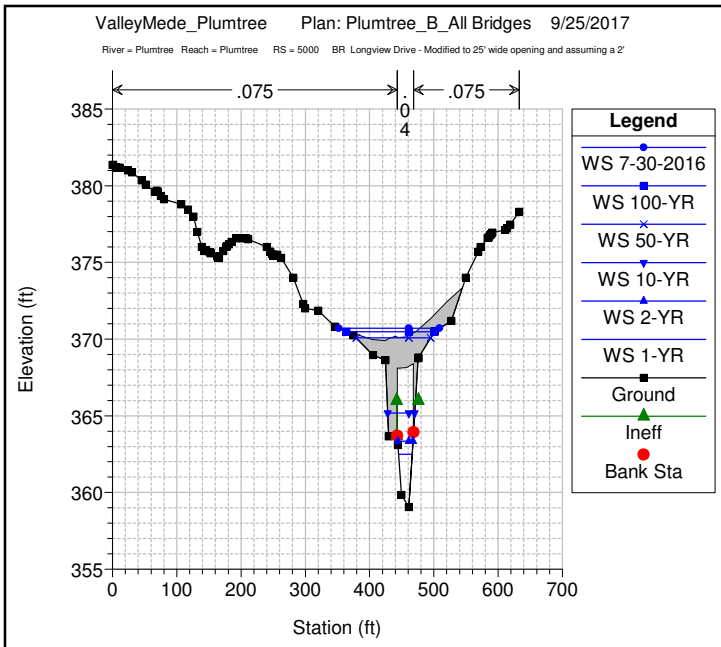

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5323
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

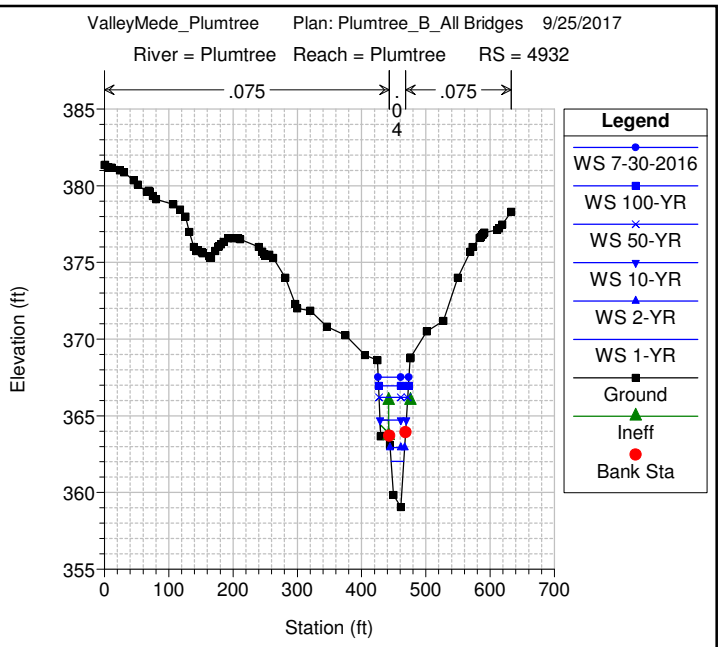

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5209
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

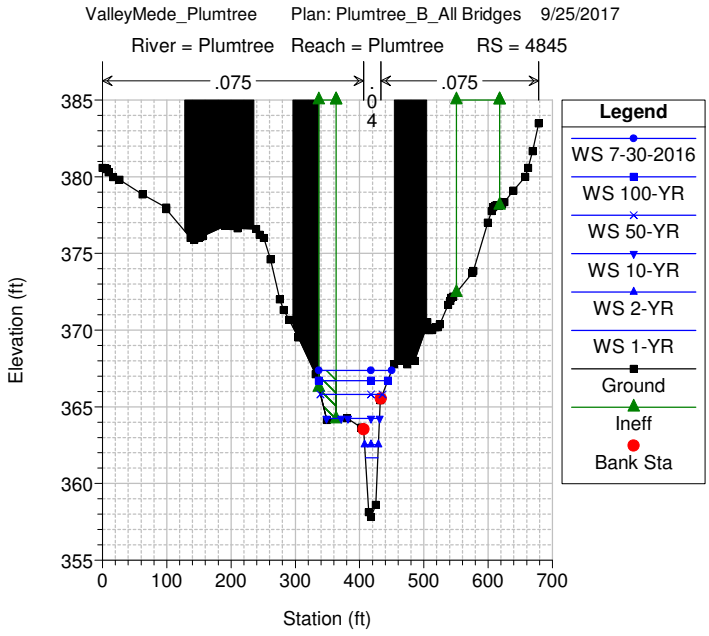

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5107
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

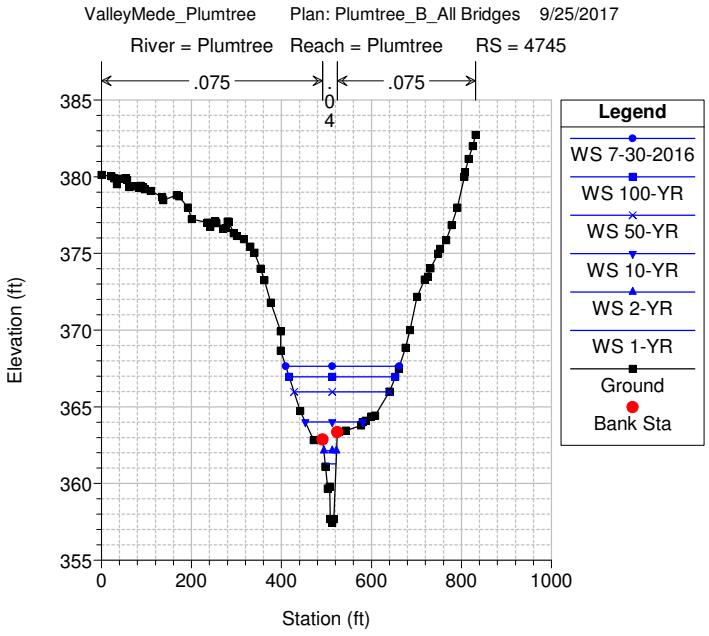

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5040
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

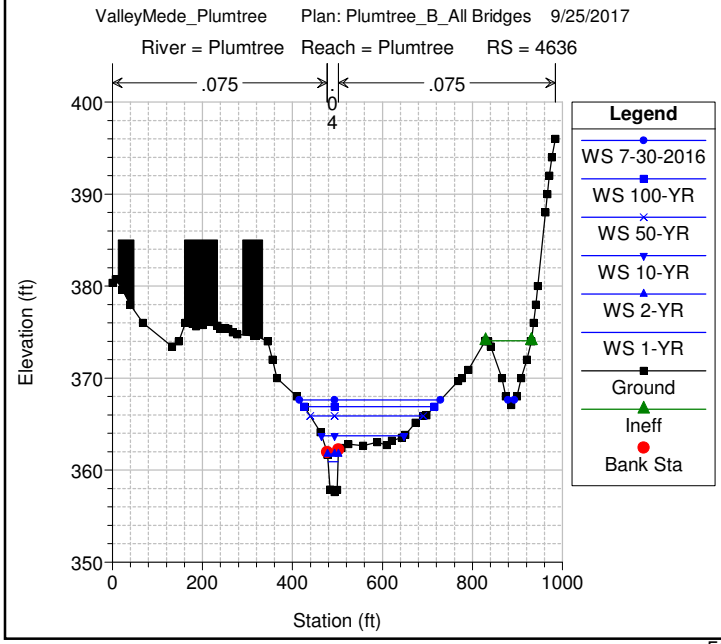

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 BR Longview Drive - Modified to 25' wide opening and assuming a 2'
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

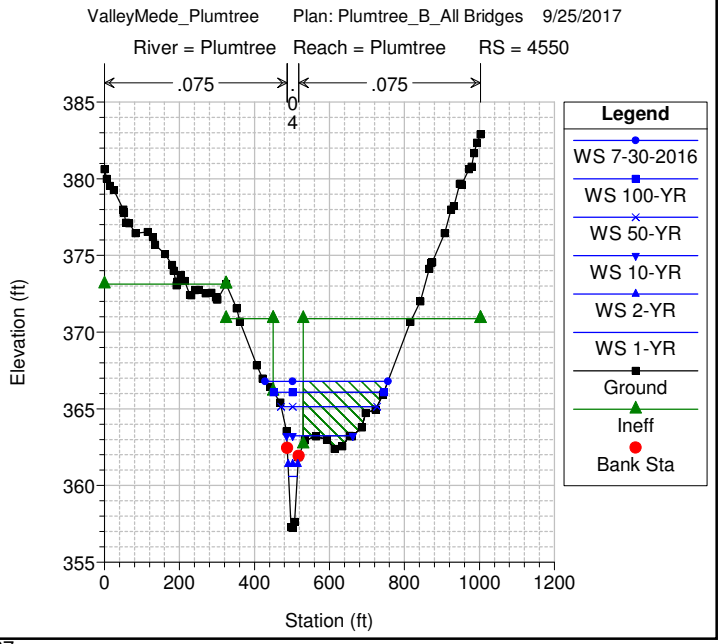

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 BR Longview Drive - Modified to 25' wide opening and assuming a 2'
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

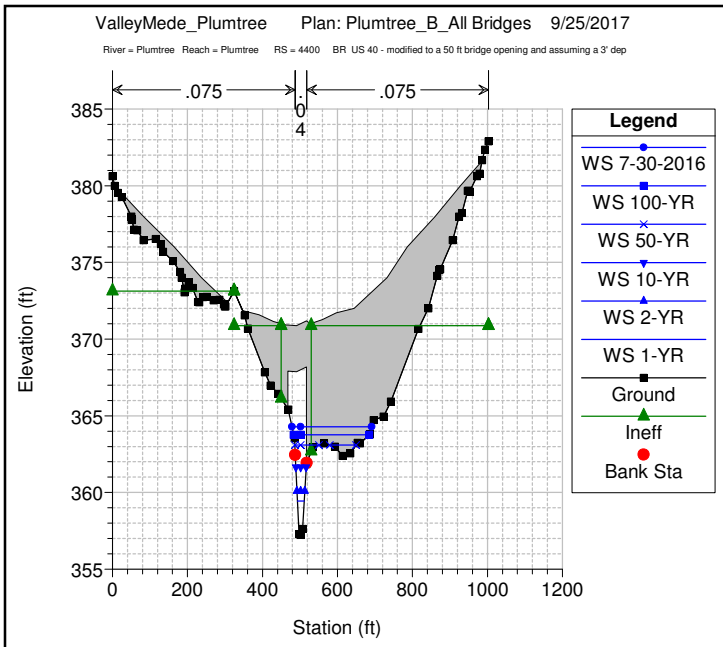

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4932
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

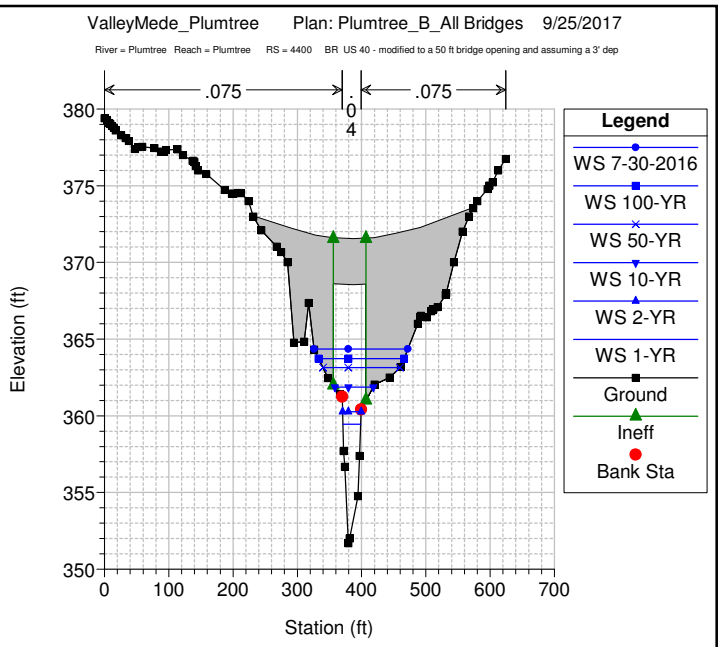

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4845
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

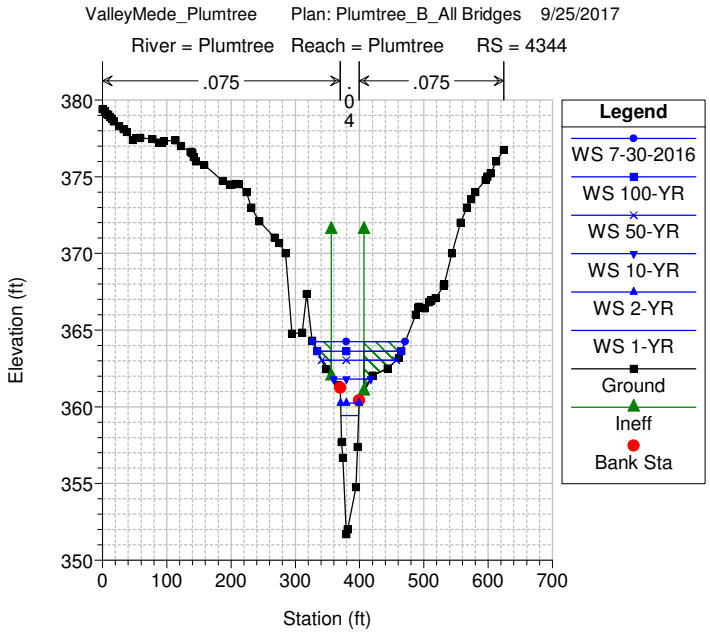

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4745
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

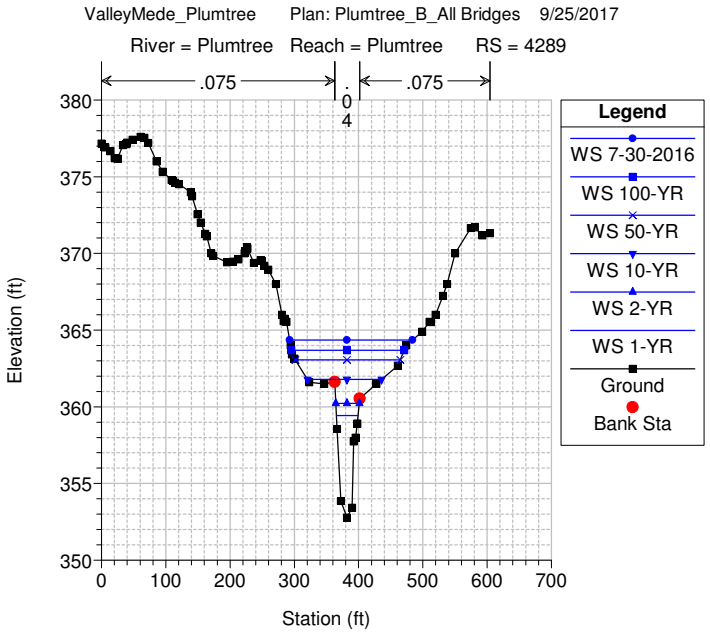

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4636
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

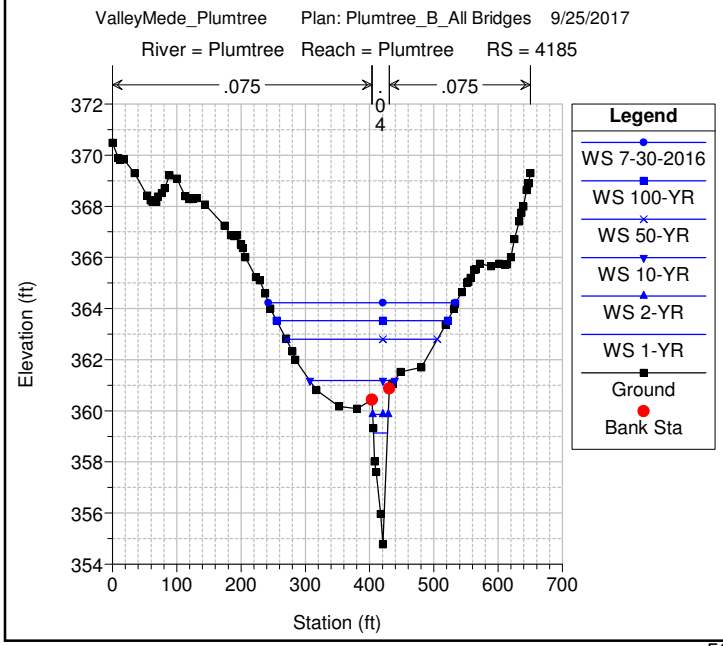

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4550
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

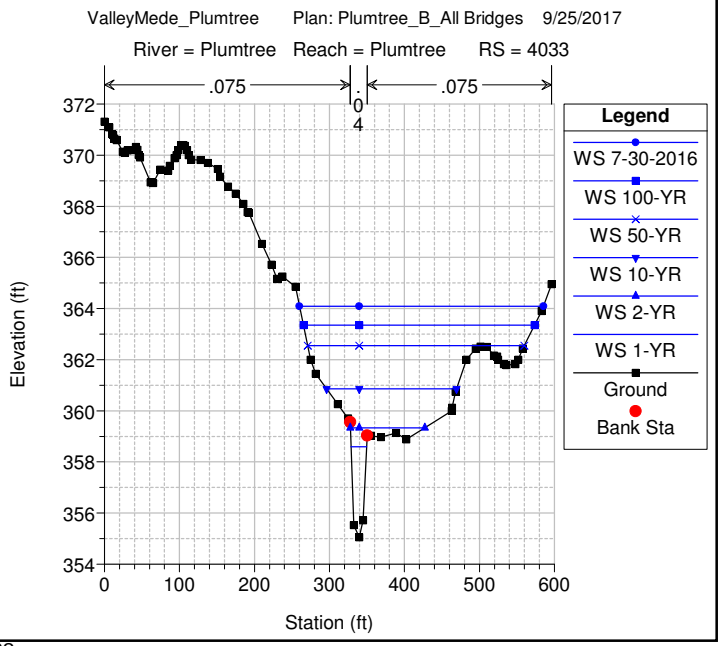

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 BR US 40 - modified to a 50 ft bridge opening and assuming a 3' dep
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

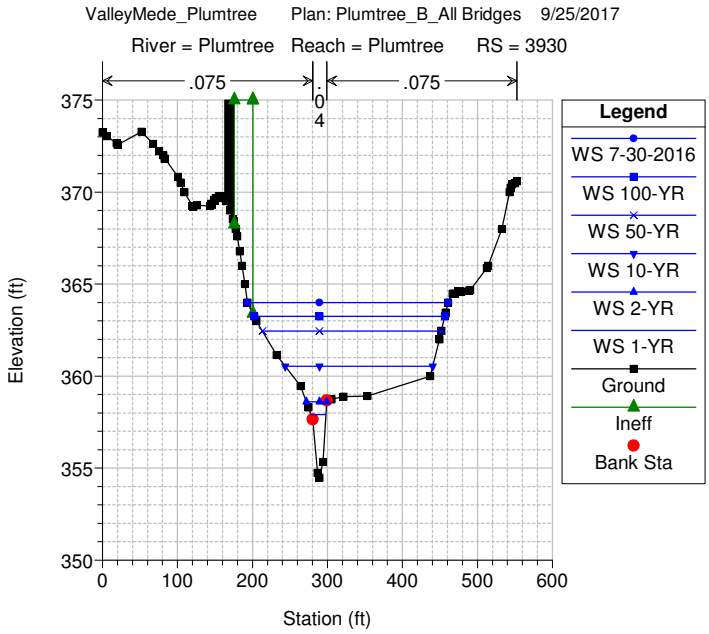

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 BR US 40 - modified to a 50 ft bridge opening and assuming a 3' dep
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

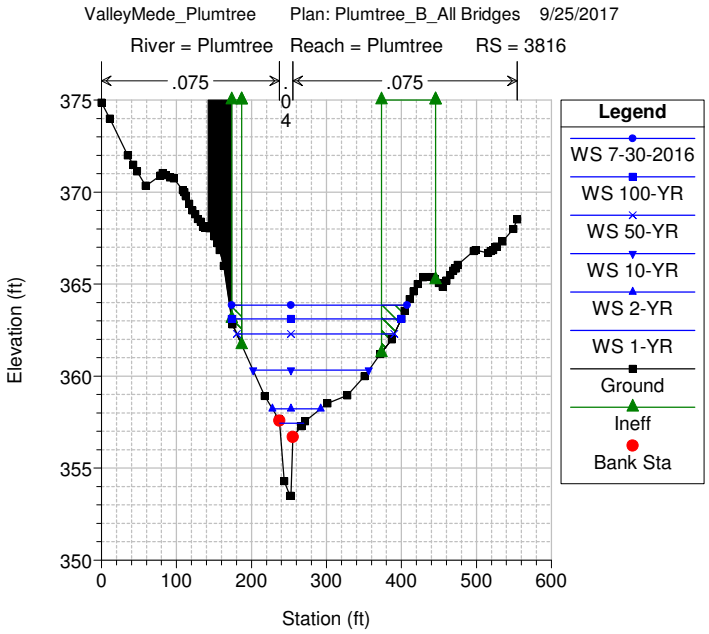

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4344
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

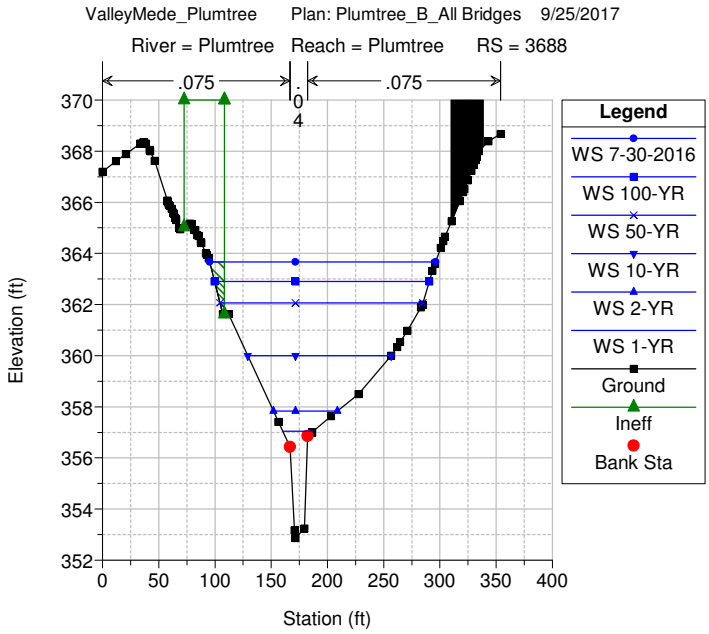

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4289
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

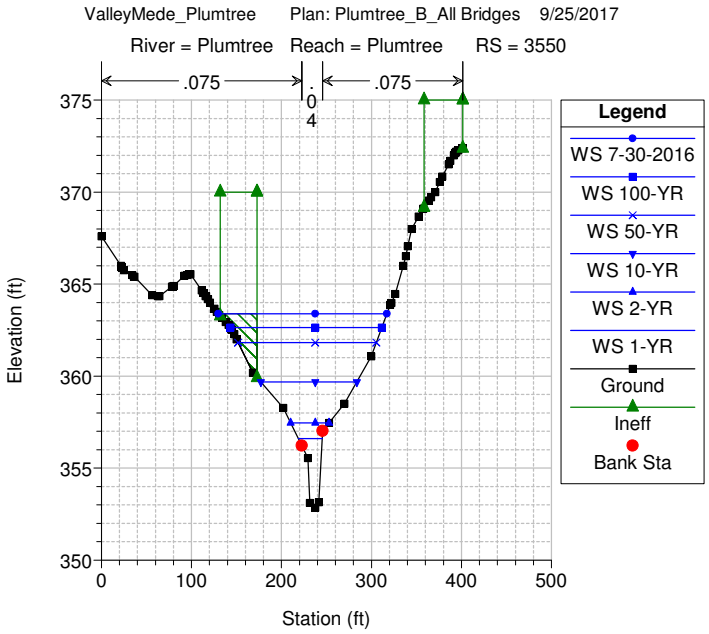

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4185
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

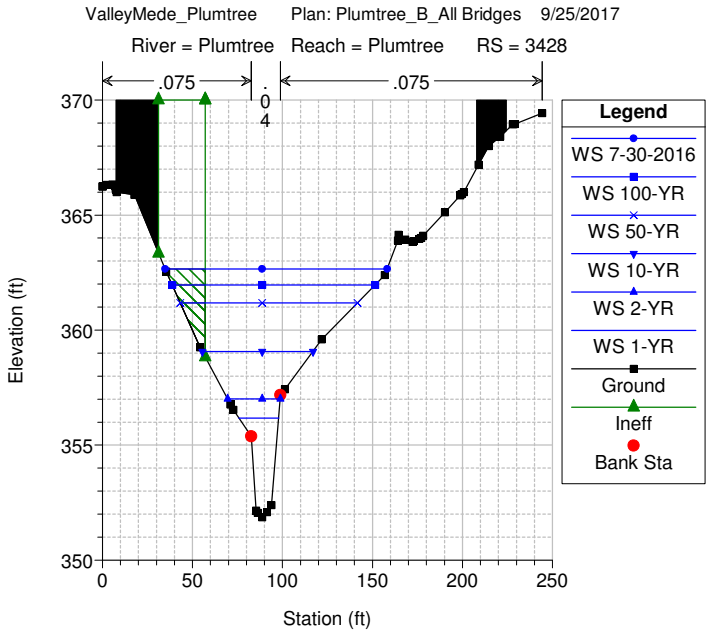

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 4033
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

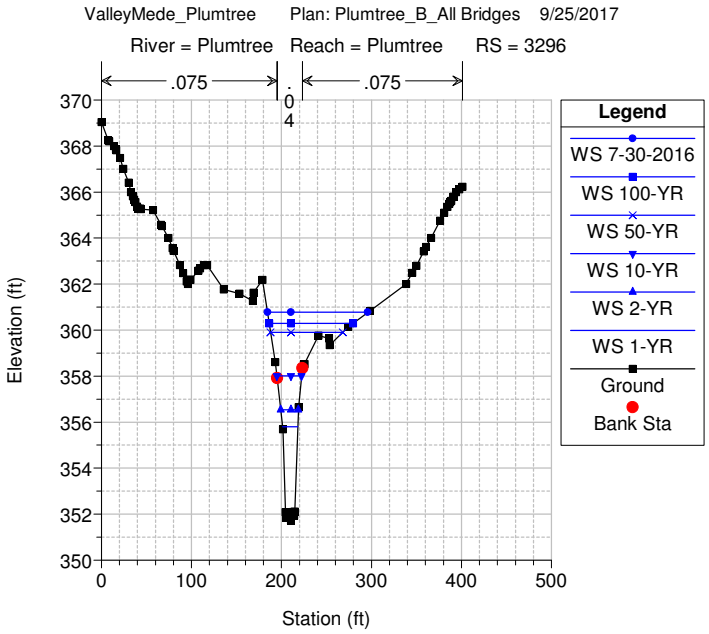

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 3930
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

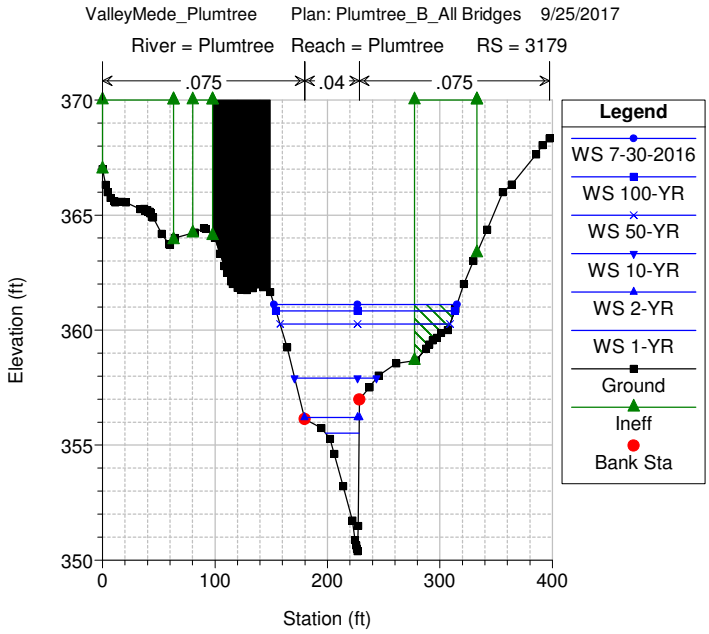

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 3816
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

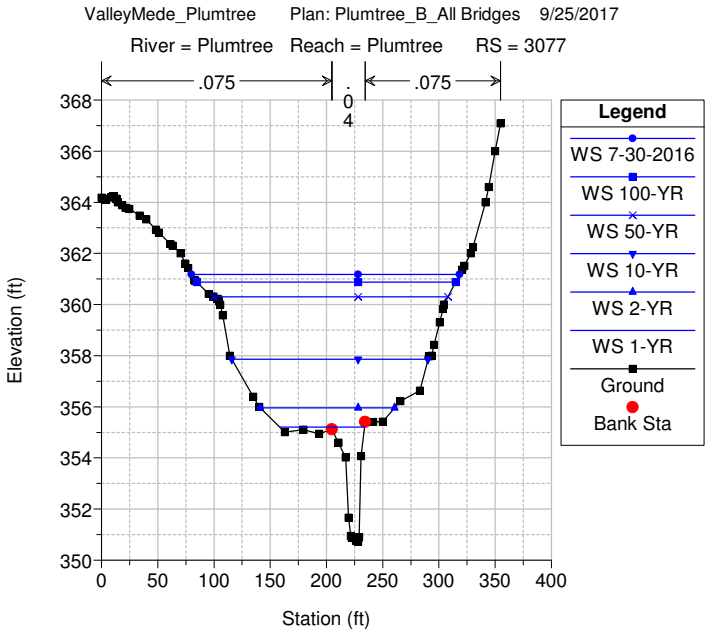

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 3688
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

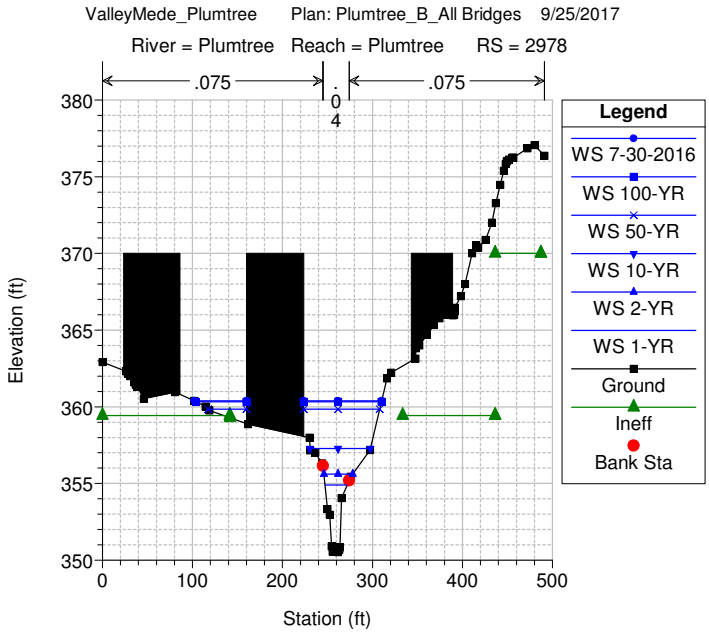

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 3550
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

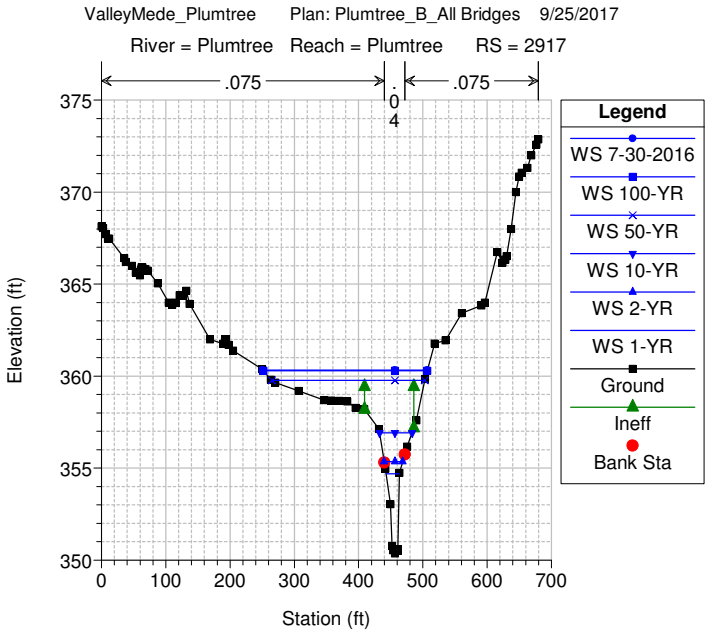

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 3428
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

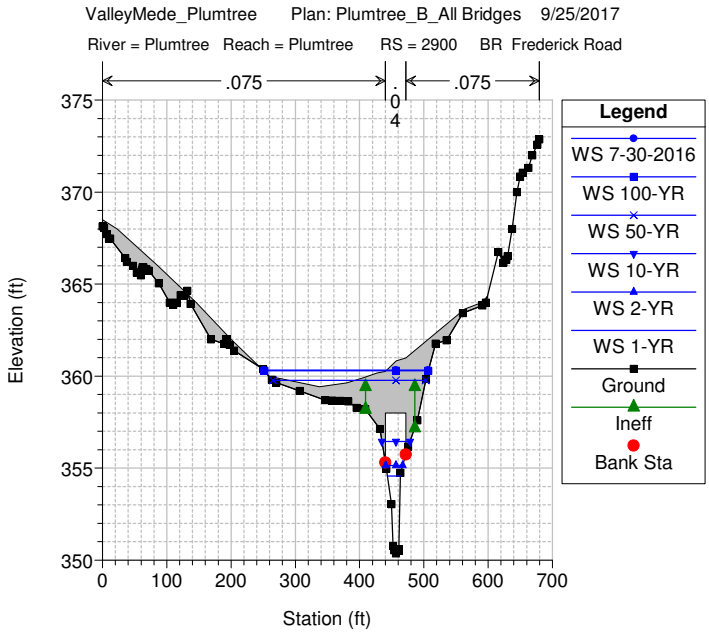

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 3296
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

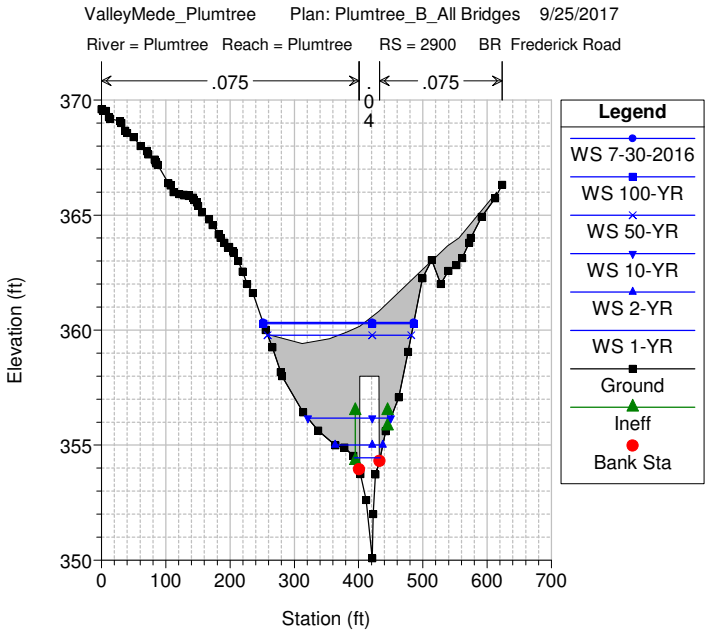

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 3179
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

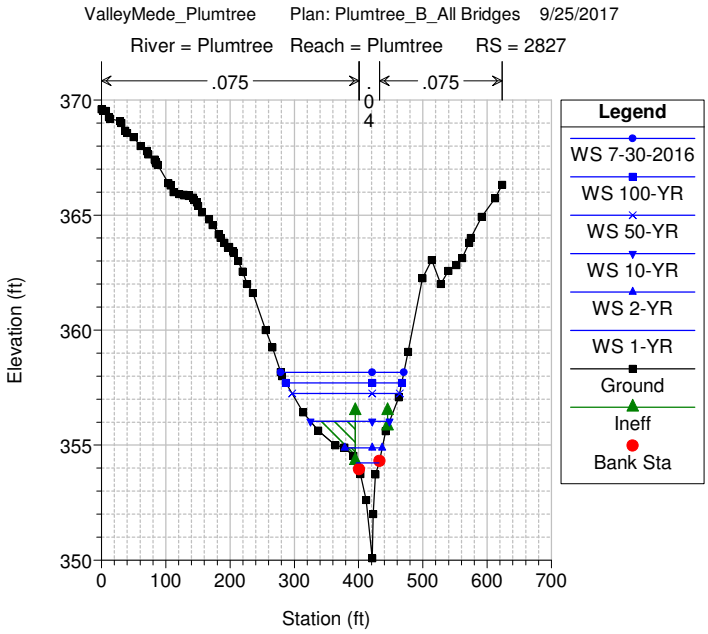

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 3077
.075
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

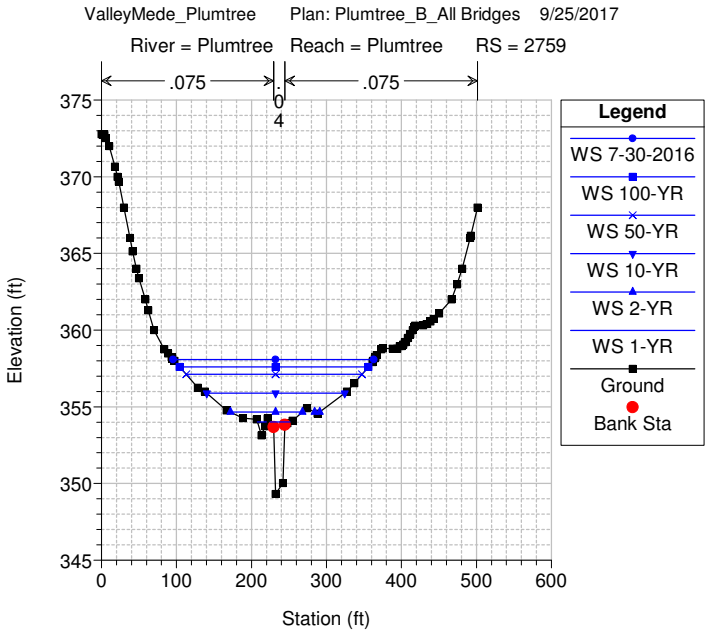

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 2978
.075
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

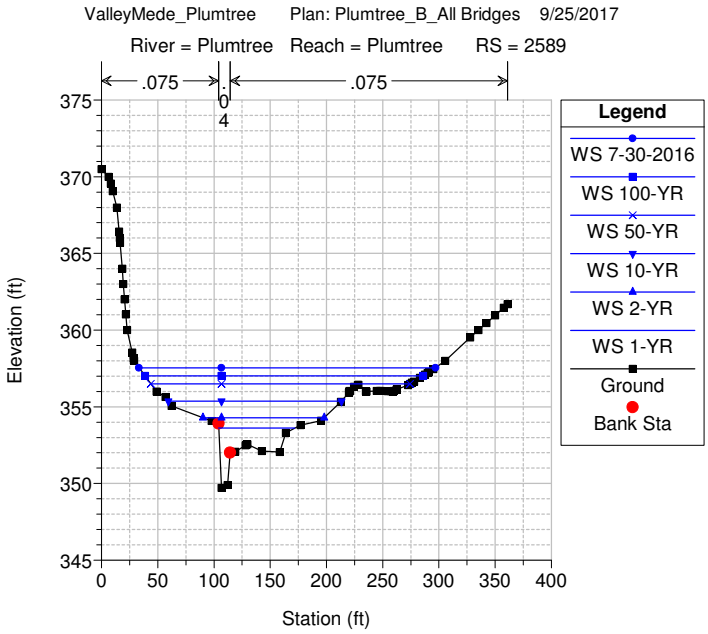

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 2917
.075
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

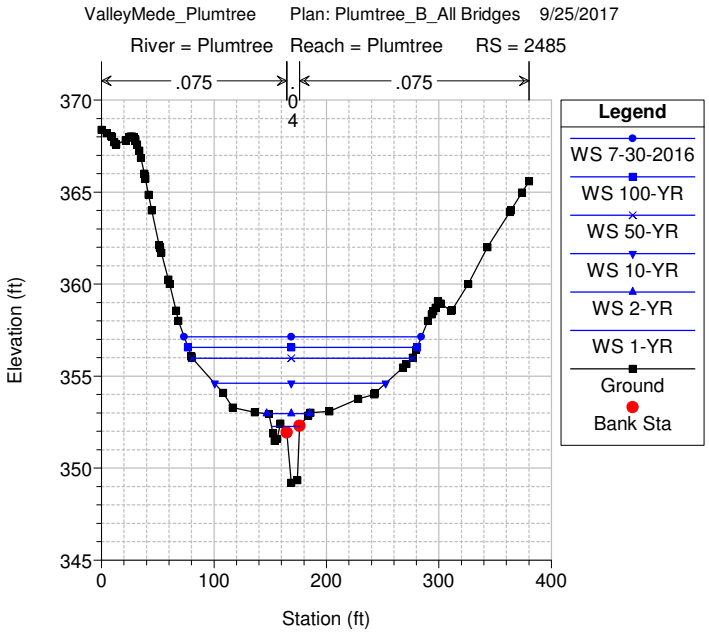

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 BR Frederick Road
.075
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

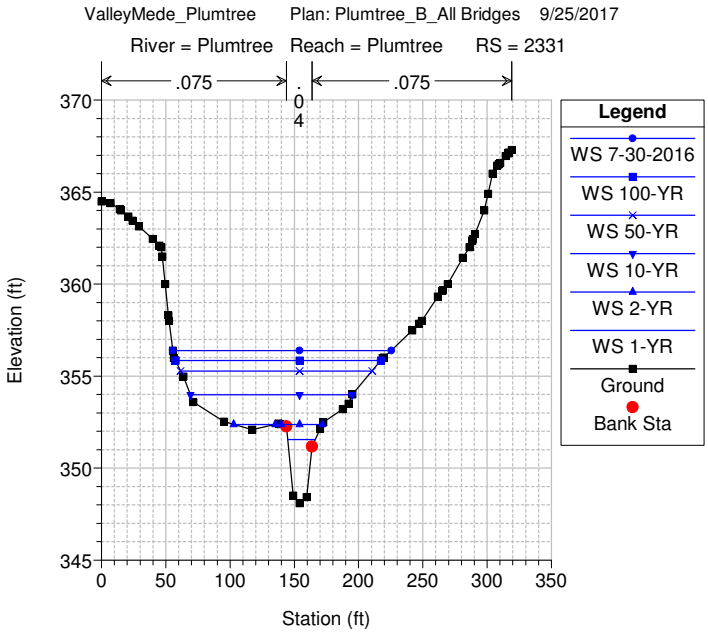

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 BR Frederick Road
.075
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

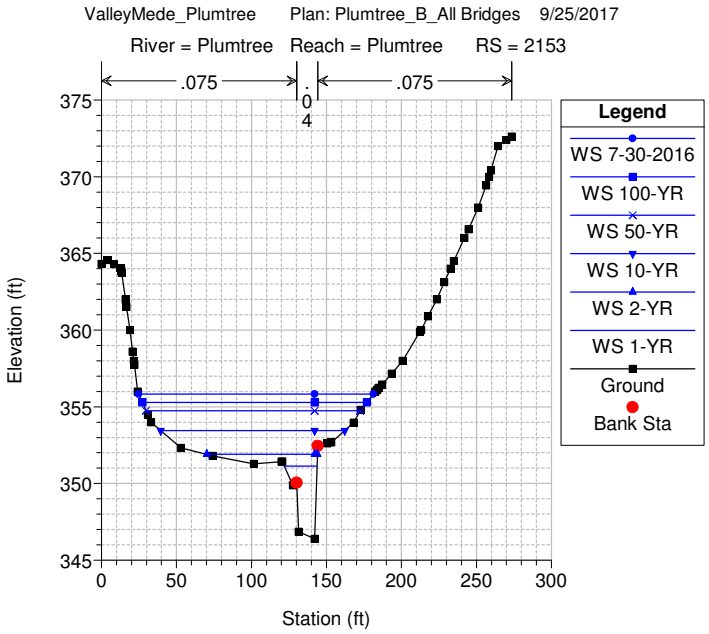

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 2827
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

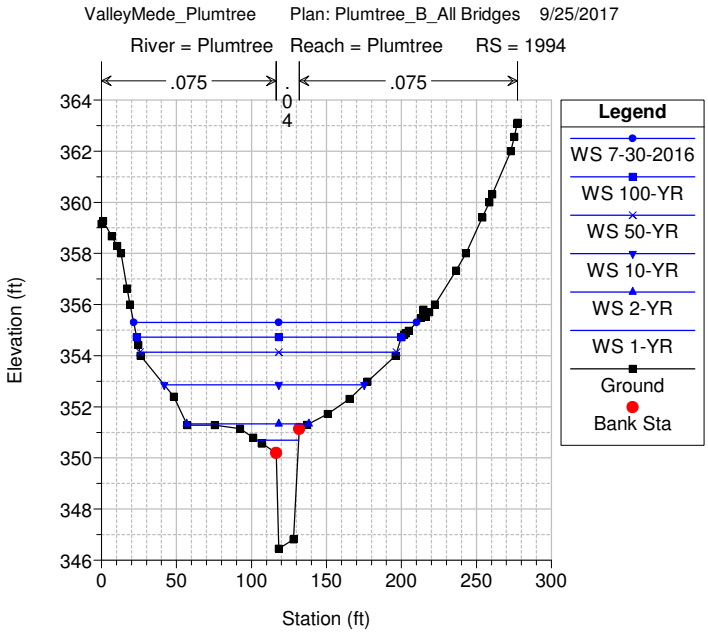

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 2759
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

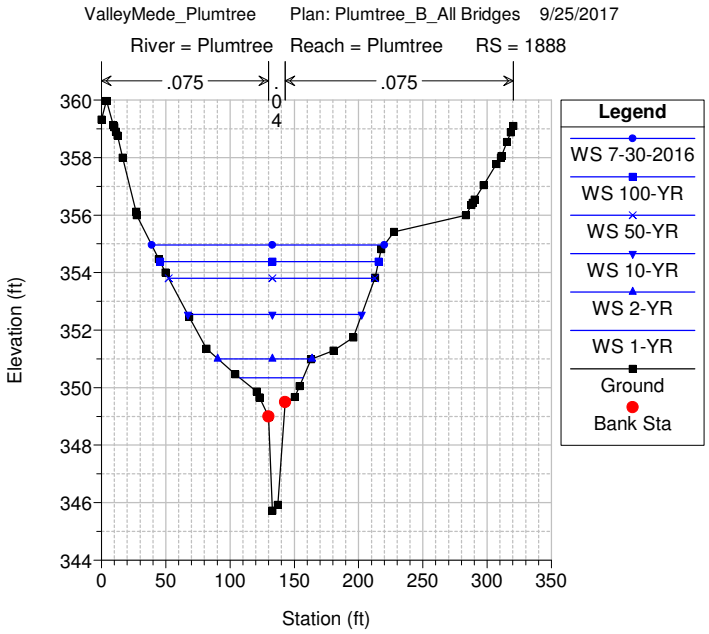

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 2589
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

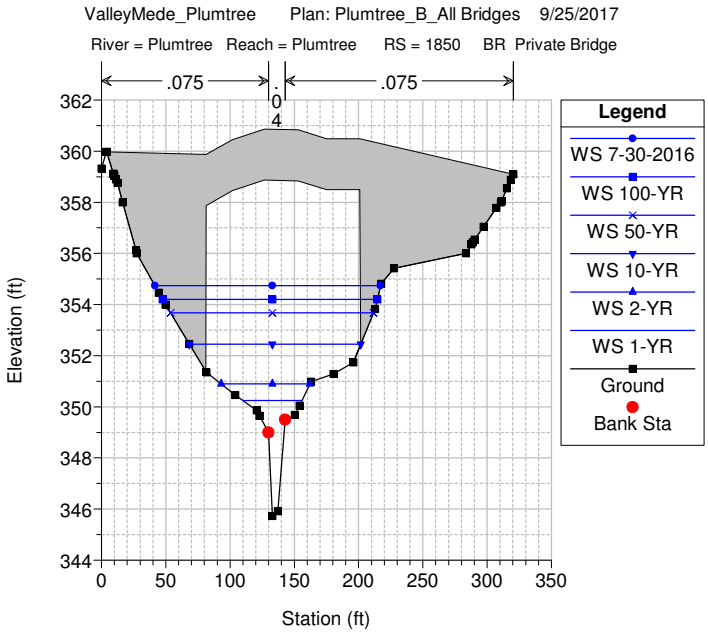

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 2485
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

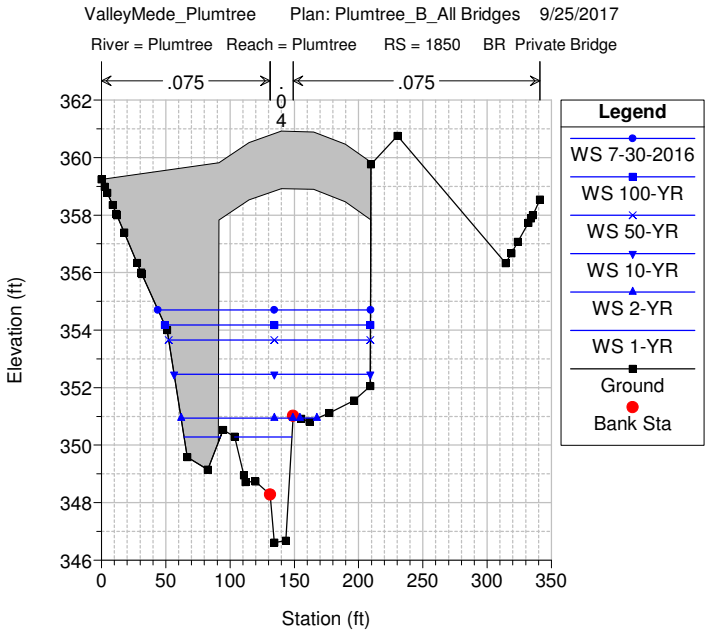

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 2331
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

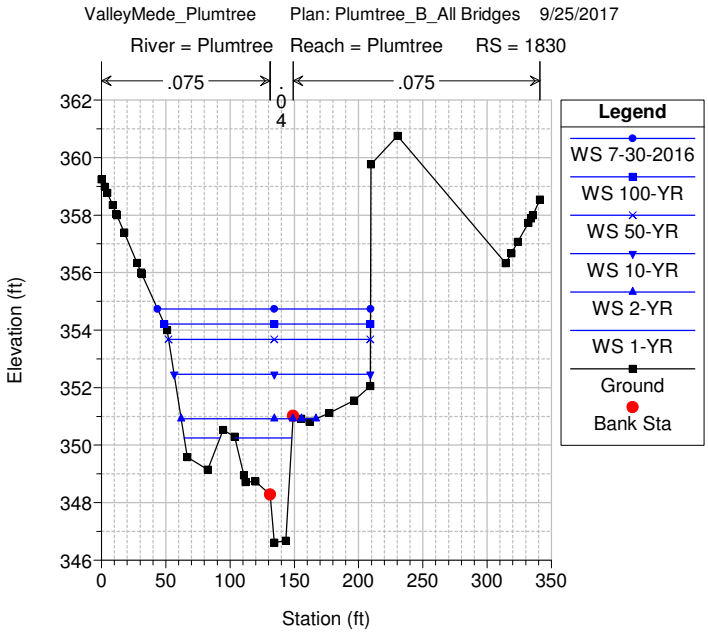

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 2153
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

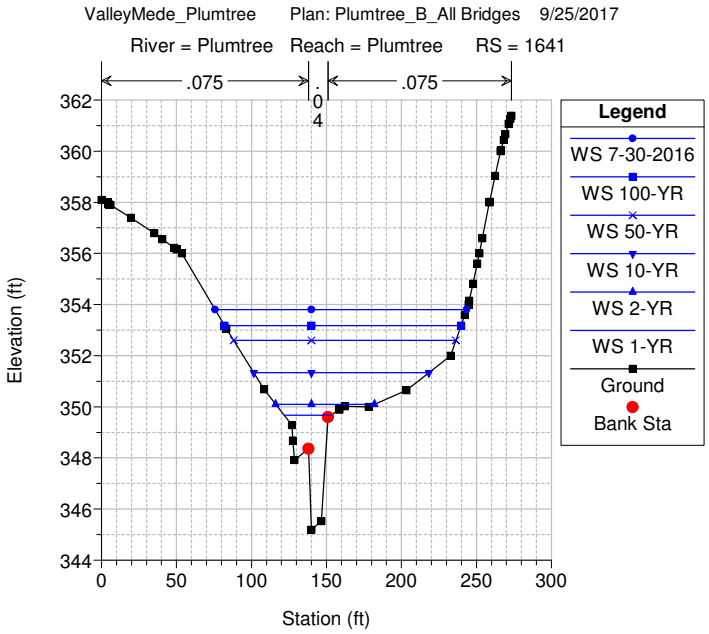

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 1994
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 1888
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

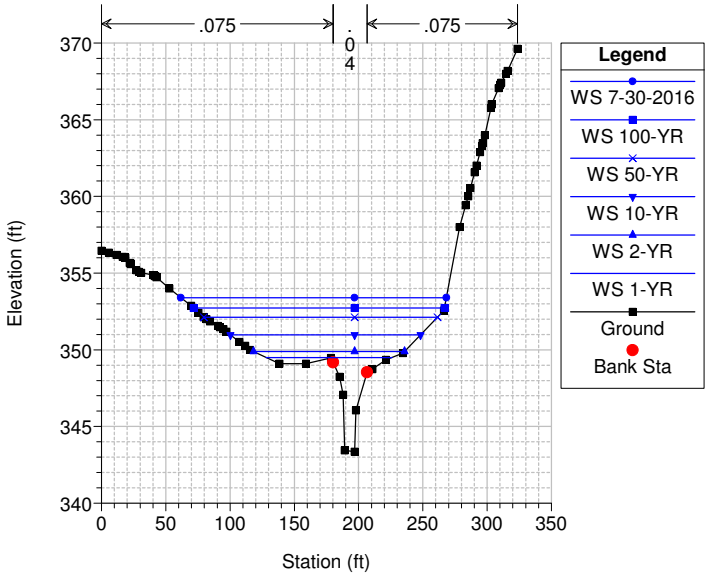

ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 1830
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 1641
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

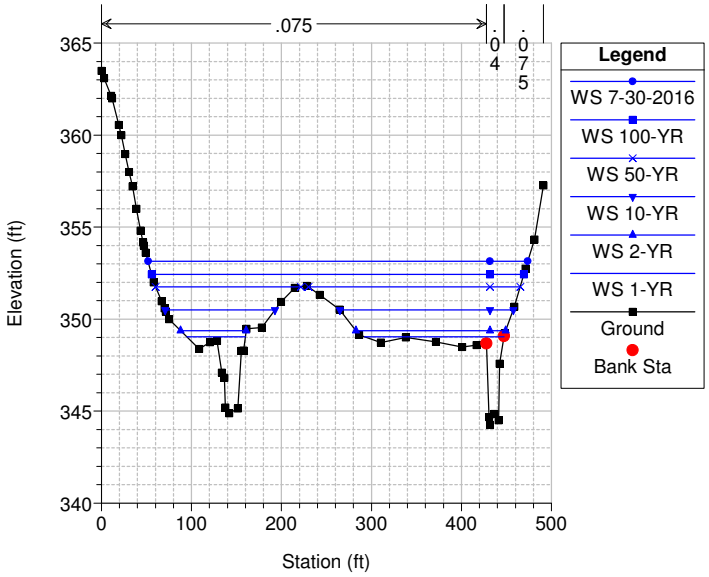
ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017

River = Plumtree Reach = Plumtree RS = 1463



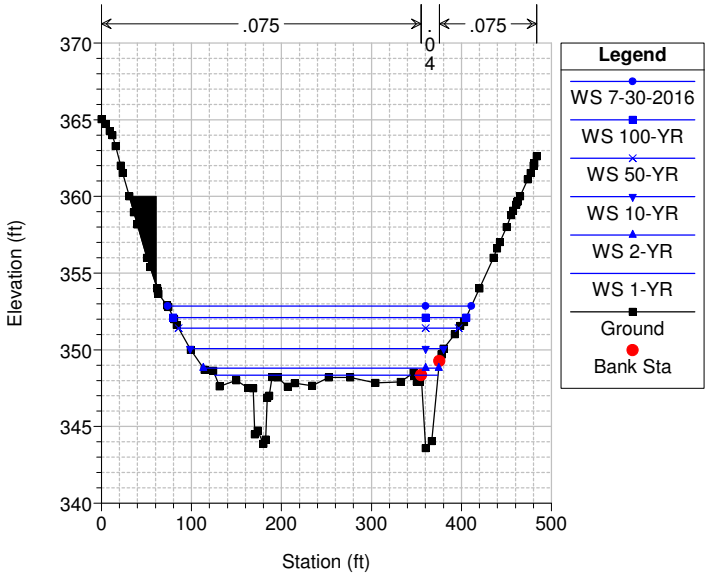
ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017

River = Plumtree Reach = Plumtree RS = 1291



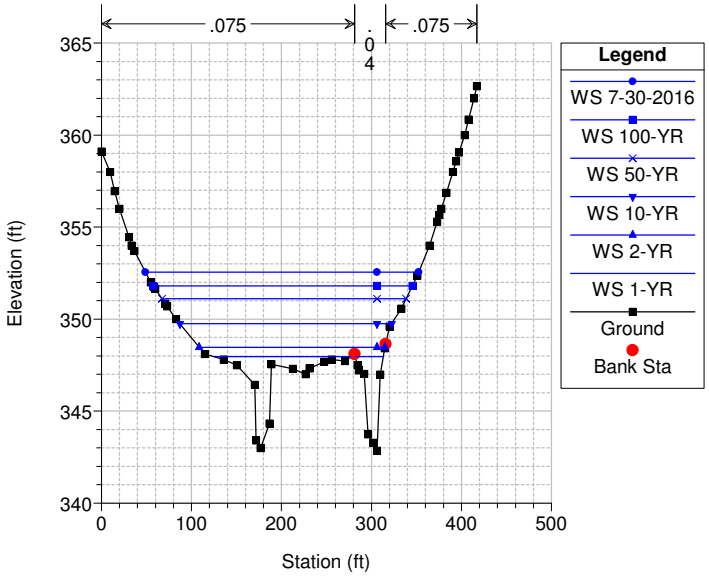
ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017

River = Plumtree Reach = Plumtree RS = 1124



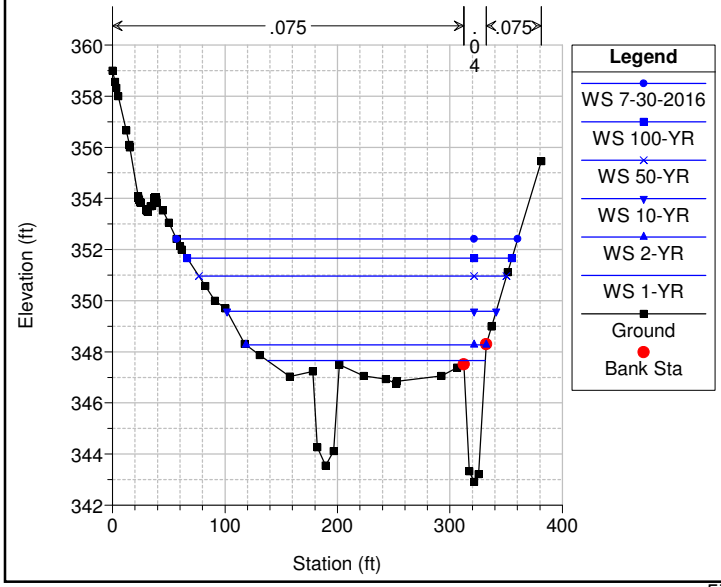
ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017

River = Plumtree Reach = Plumtree RS = 994



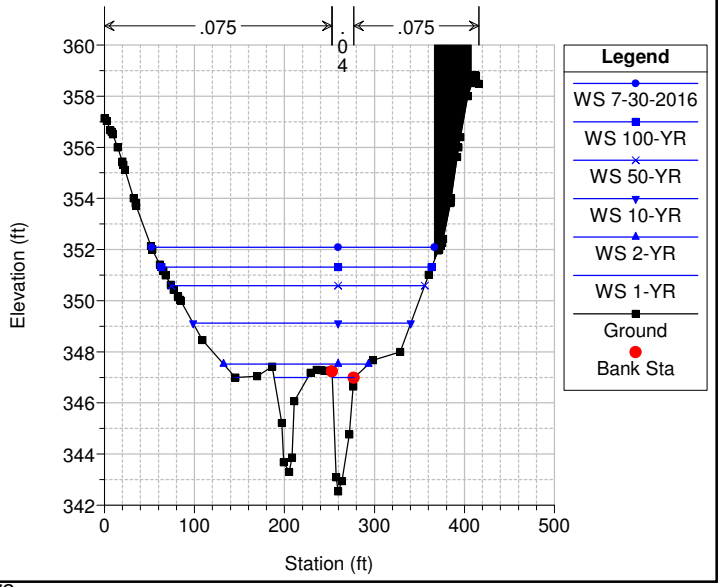
ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017

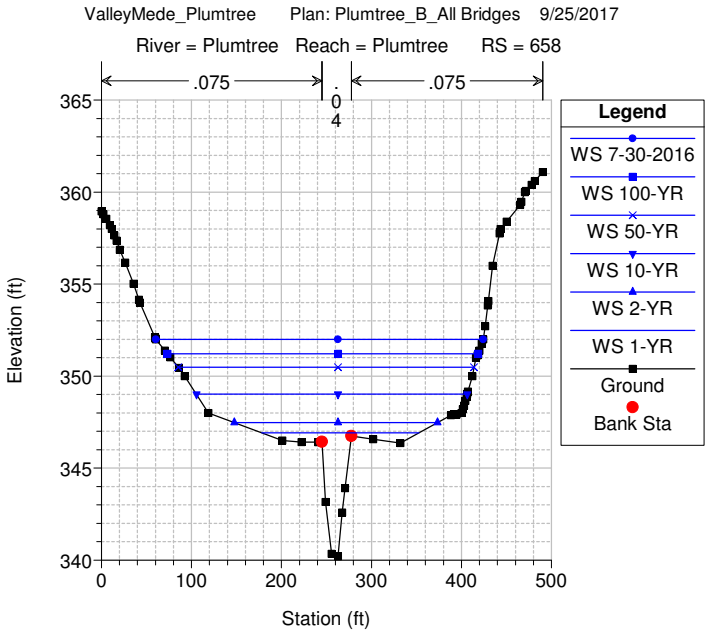
River = Plumtree Reach = Plumtree RS = 911

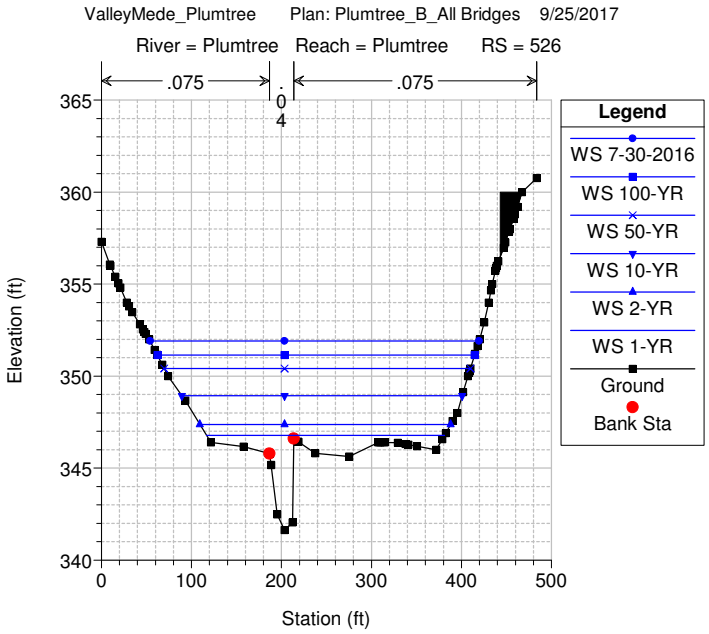


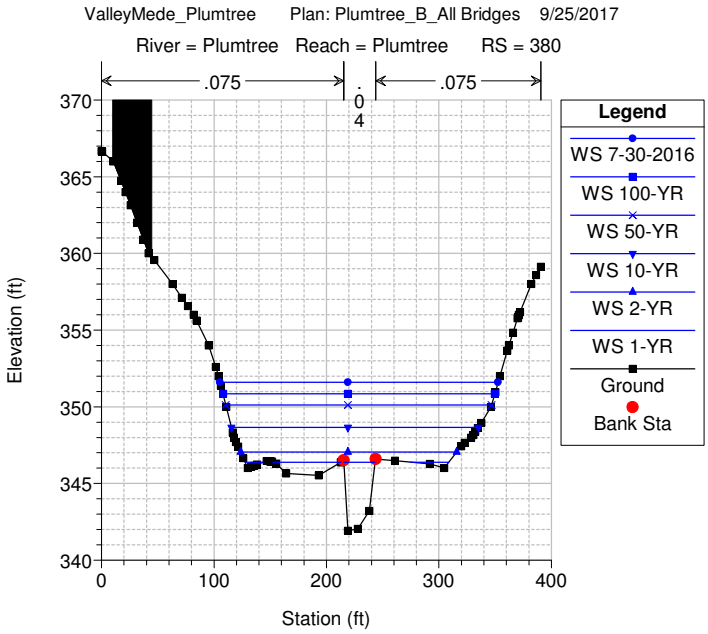
ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017

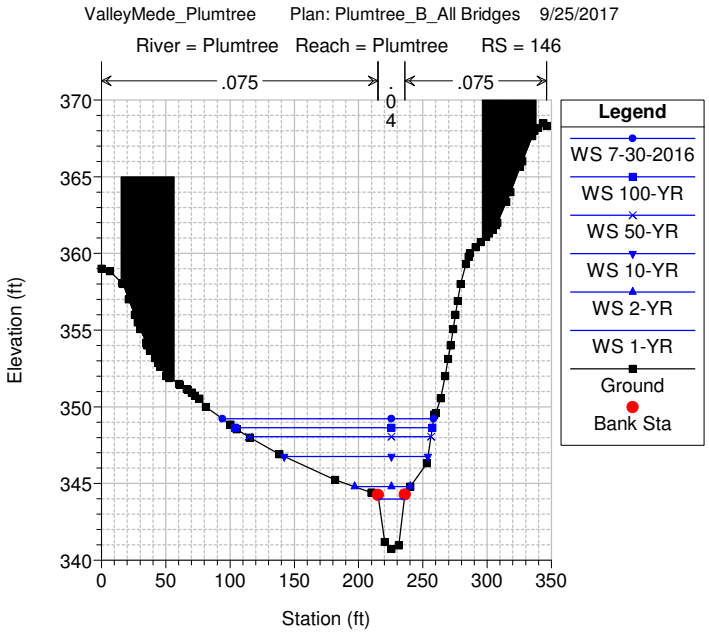
River = Plumtree Reach = Plumtree RS = 762

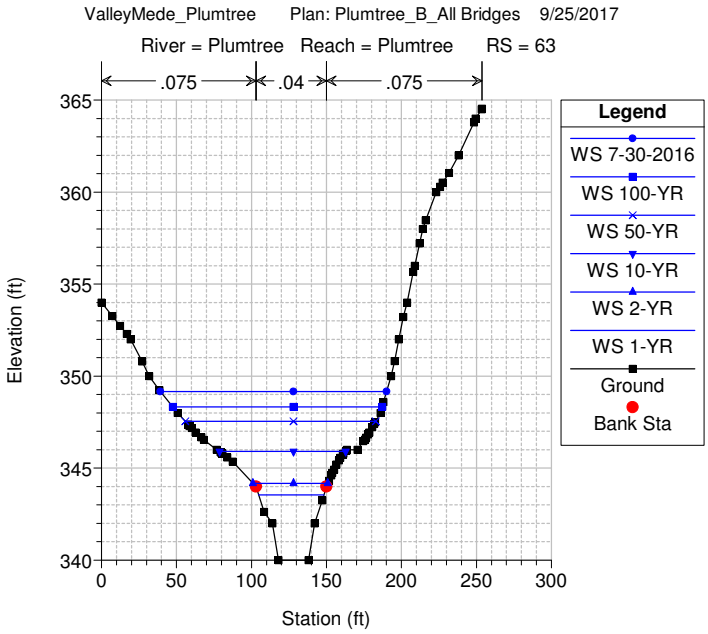



ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 658
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 526
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 380
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 146
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_B_All Bridges 9/25/2017
River = Plumtree Reach = Plumtree RS = 63
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: ValleyMede_Plumtree
Project File : ValleyMede_Plumtree.prj
Run Date and Time: 9/25/2017 6:36:27 AM

Project in English units

PLAN DATA

Plan Title: Plumtree_B_All Bridges
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.p03

Geometry Title: Plumtree_B_All Bridges
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g02

Flow Title : Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f01

Plan Description:
Proposed condition which includes replacing the Frederick Rd, US 40, Longview Dr, Brookmede Rd, and Hearthstone Rd culverts with bridges.

Plan Summary Information:

Number of:	Cross Sections	= 85	Multiple Openings	=	0
	Culverts	= 1	Inline Structures	=	0
	Bridges	= 7	Lateral Structures	=	0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f01

Flow Data (cfs)

River	Reach	RS	1-YR	2-YR	10-YR	50-YR	100-YR	7-30-2016

Plumtree	Plumtree	10286	223	307	596	995
1200	1333					
Plumtree	Plumtree	9499	204	321	719	1263
1578	1757					
Plumtree	Plumtree	6568	209	334	772	1391
1736	2002					
Plumtree	Plumtree	4185	194	295	741	1395
1765	2157					
Plumtree	Plumtree	1291	408	581	1316	2351
2995	3782					

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Plumtree	Plumtree	1-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	2-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	10-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	50-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	100-YR	Critical	Normal S = 0.0035

GEOMETRY DATA

Geometry Title: Plumtree_B_All Bridges
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g02

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10286

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	421.06	4.46	420.89	12.57	420.32	16.13	420	21.94	419.29
34.88	418	40.42	417.33	49.09	416.56	55.82	416.21	59.64	416.08
64.03	416.14	69.28	416.31	71.51	416.31	77.01	416.75	78.81	416.76
87.6	416	91.89	415.92	104.16	414	107.04	413.94	110.15	414
119.18	415.05	122.23	414.9	125.21	414.83	141.42	414.84	151.61	414.58
159.6	414.54	167.19	414.69	175.25	414.38	179.96	413.77	184.56	413.83
198.65	413.63	213.29	412.97	221.19	413.06	244.79	412.19	252.86	412
260.69	411.14	268.55	410	275.66	409.1	281.64	408	295.07	406.35
301.98	405.73	324.56	404	331.77	402.81	335.97	402	342.56	400
348.24	398	350.27	397.89	380.47	396.22	384.18	396	392.32	395.09
392.68	395.09	397.28	395.62	402.89	396.12	413.25	396.41	418.97	396.59
431.99	396.41	448.58	396.55	450.96	396.5	456.66	396	465.37	395.79
485.62	395.34	494.65	395.35	513.52	395.9	514.52	396	527.48	398
535.86	400	542.87	402	555.37	406	562.67	408	571.1	410
582.03	412	599.19	414	605.88	414.94	612.34	415.57	635.29	417.19

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	380.47	.04	413.25	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
380.47	413.25	240.46	241.25	237.2	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
418.97	635.29	396.59	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10044

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	412.61	5.59	412.52	12.02	412	24.56	410	43.68	408
63.32	407.31	82.83	408	95.82	408.67	112.17	408.9	135.95	408

```
  150.67  407.02  155.38  406.93  170.58  407.72  184.39  408.12  187.95     408
  198.17     406  207.41  404.64  213.72  403.97  220.01  403.47  230.16  403.33
  237.26  402.98  240.08  402.75  253.05   401.3  261.48     400  269.64     398
  276.05     396  280.89   394.8  280.91  394.79  283.98     394  296.18  392.49
  306.31  393.62   315.4  393.68  315.41  393.68   321.2  393.72  340.79   393.4
  357.04  393.75  384.23  394.62  389.34  394.61   409.5     394  417.56  393.18
  419.37  393.18  428.98     394  438.91  394.31  451.85  394.26   461.9  394.35
  480.45  394.77   489.6  395.18  496.68   395.1  547.82     396  555.48  396.43
  564.03  396.66  570.08  396.96  600.19   397.8  605.55  398.35  610.97  398.79
  622.38  399.08  632.53     400  658.42  401.23  661.34  401.26  665.82  401.48
  679.52  401.73  692.52  401.54  695.05  401.76  701.43  401.68  704.45   401.5
  715.06  401.24  723.65  401.19  738.24  400.62  741.08  400.41  748.78  400.57
  754.02  400.82  766.27  400.65  779.16  401.67  781.77     402  794.47     404
  812.23     408  815.19   408.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  280.91     .04   321.2    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.91   321.2            233.9  230.57  222.97             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9814

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  408.67   12.64     408    20.9   407.3   27.53  406.98    42.5  406.44
   45.07  406.25   49.58  405.72   78.23  403.56   83.62  402.79   92.79  403.11
  109.61   402.4   113.8     402  123.62  401.65  158.68  400.12  170.91  398.99
  182.64     398  195.08     396  198.75  395.24  205.66     394  253.13     392
   256.5  391.77  269.73  390.59  269.76  390.59  276.29     390  281.78  388.76
  287.27     390     300  391.49  302.59  391.81  308.77   392.3  315.09  392.31
  322.12  392.41  326.48  392.65  332.87  392.67  336.92  392.57  358.02  392.79
  362.67  392.97  366.57  392.83  382.15  392.69  386.15  392.76  408.35  392.69
  415.33  392.55  427.21  392.45  466.82  393.37  473.56  393.78  479.56     394
  490.09  394.88  500.42  395.03  503.77  395.29  508.66  395.37  510.05  395.29
  514.08  395.75  518.53   395.7  538.06  395.23  547.13  395.22  564.37     396
  575.99  396.66  593.58  397.53   602.7  396.78  604.57  396.76  609.13  397.48
  610.69     398  617.78   398.3   636.1  398.77  690.36  399.64  696.36  399.66
  731.55   398.7   739.3  398.59  745.07  398.39  755.19  398.48   767.5  398.81
  779.98  399.52  790.91  399.95  806.05     402  818.51   403.5  823.74     404
  826.23   404.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  253.13     .04   308.77    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        253.13  308.77            52.19   51.52   50.85             .1       .3
Right Levee     Station=  514.08      Elevation=  395.75

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9762

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  406.21    1.37     406   14.09  404.95   24.55  404.21   38.68  402.62
   47.25     402   67.31     400   71.18  399.81    79.7  399.62   84.43  399.37
  117.61  398.32   130.2  398.16  134.88     398  147.37  397.38  157.13  397.03
  162.41  397.34  174.01  396.74  180.45     396  203.34  393.86  225.77  392.62
  235.15     392  236.85  391.76  246.11  391.05  253.44  390.35  253.48  390.34
  256.39     390  260.62  388.92  263.74     388  265.59  389.21  267.49     388
  276.02     390  282.13     392   284.2  392.49  284.22  392.49  290.57     394
  292.66  393.58  294.75     394   307.3  392.92  329.54  391.59  336.98  391.01
  346.17  391.13  351.58  391.28  355.99  391.22  362.72  391.29  365.01  391.44
  375.54  391.54  383.33  391.42  390.57  391.67  406.22     392  413.09  392.62
  427.35  393.41  431.42   393.8  432.21     394  447.82  395.11  449.31  395.15
  470.35  394.72   473.7  395.12  482.31  395.53  496.51  395.21  507.72  395.47
```

```
  543.73  396.64  554.26  396.66  559.24  396.89  562.97  396.96  568.76  397.23
  584.75  397.94  589.53  398.31  594.28     398  601.77  397.68  611.77     398
   662.6   399.2  729.79  397.67  753.67  397.86  761.91     398   785.2  399.61
  794.52  400.41  805.84  402.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  235.15     .04  284.22    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.15  284.22            32.64   30.09   27.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9732

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  121.15           145.71  143.47  141.55             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 9650

INPUT
Description: Michaels Way
Distance from Upstream XS =      51
Deck/Roadway Width        =      50
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  396.38            26.1 395.934            49.6 395.582
    91.4 394.914           117.4 394.746           144.9 394.497
   186.3 394.402          211.94 394.376          238.63 394.594
  353.45     396

Upstream Bridge Cross Section Data
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
```

```
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
          82.5  121.15           .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  397.96             8.6   397.3            45.6 396.969
    68.8 396.671            92.4  396.38           123.2 395.934
   146.8 395.582           191.3 394.914           209.6 394.746
   232.9 394.497           262.2 394.402           288.2 394.376
  314.98 394.594          417.56     396

Downstream Bridge Cross Section Data
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.96   15.99  396.01   17.57     396   20.76  395.29   25.99  395.01
   29.32  394.71   29.33  394.38   39.55  392.85   60.92  392.22   95.59   390.4
  100.13  389.82  106.73  388.97  116.38  387.66  117.95  386.81  124.68  386.27
  130.57  386.46  134.27   387.9   134.7     388  137.88  388.68  144.79  390.87
  157.88  392.09  174.45  391.81  191.33  392.09  218.95   392.7   229.4  392.07
  229.72  392.09  239.13  392.16  239.87  392.21  251.99  392.37  252.81  392.33
  253.84  392.05  264.78  392.06  265.66  392.35  265.82  392.37  274.13  392.48
  275.38  392.39   275.8  392.37  280.37  392.38  285.74  392.34  288.04  392.35
  289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
  294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
  302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
  336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
  353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
  363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         106.73  137.88           .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8   391.2       F
   140.7  417.56   391.2       F

Upstream Embankment side slope              =       3 horiz. to 1.0 vertical
Downstream Embankment side slope            =       3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.5     .024     .016        0                  .5                1
Upstream   Elevation =  387.74
           Centerline Station =  102
Downstream Elevation =  386.61
           Centerline Station =  120
```

```
Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.6     .024     .016        0                  .5               1
Upstream   Elevation =  387.77
           Centerline Station =  112
Downstream Elevation =  386.6
           Centerline Station =  130
```

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	112.20	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.43
Q Barrel (cfs)	112.20	Culv Vel DS (ft/s)	5.35
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.24
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.64	Weir Sta Lft (ft)	
E.G. OC (ft)	391.04	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.01	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	146.33	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.10
Q Barrel (cfs)	146.33	Culv Vel DS (ft/s)	5.56
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	390.20	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	389.99	Culv Exit Loss (ft)	0.27
Delta EG (ft)	1.35	Culv Entr Loss (ft)	0.51
Delta WS (ft)	1.37	Q Weir (cfs)	
E.G. IC (ft)	391.22	Weir Sta Lft (ft)	
E.G. OC (ft)	391.64	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.11	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.99	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.37	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.37	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	298.28	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	298.28	Culv Vel DS (ft/s)	8.93
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	391.43	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	391.04	Culv Exit Loss (ft)	0.85
Delta EG (ft)	2.53	Culv Entr Loss (ft)	0.70
Delta WS (ft)	2.76	Q Weir (cfs)	
E.G. IC (ft)	393.54	Weir Sta Lft (ft)	
E.G. OC (ft)	393.96	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.87	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.98	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	365.61	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	365.61	Culv Vel DS (ft/s)	9.43
E.G. US. (ft)	395.25	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.11	Culv Inv El Dn (ft)	386.61

E.G. DS (ft)	392.59	Culv Frctn Ls (ft)	0.24
W.S. DS (ft)	392.07	Culv Exit Loss (ft)	0.86
Delta EG (ft)	2.66	Culv Entr Loss (ft)	0.69
Delta WS (ft)	3.04	Q Weir (cfs)	263.03
E.G. IC (ft)	394.79	Weir Sta Lft (ft)	70.13
E.G. OC (ft)	395.24	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.16	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	392.07	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)	5.05	Weir Flow Area (sq ft)	123.26
Culv Crt Depth (ft)	3.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	352.60	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.81
Q Barrel (cfs)	352.60	Culv Vel DS (ft/s)	8.81
E.G. US. (ft)	395.57	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.40	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	1.15
W.S. DS (ft)	392.60	Culv Exit Loss (ft)	0.69
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.60
Delta WS (ft)	2.80	Q Weir (cfs)	493.18
E.G. IC (ft)	394.49	Weir Sta Lft (ft)	49.49
E.G. OC (ft)	395.55	Weir Sta Rgt (ft)	286.44
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.21
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.83
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	196.32
Culv Crt Depth (ft)	3.86	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	347.45	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.68
Q Barrel (cfs)	347.45	Culv Vel DS (ft/s)	8.68
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.59	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.38	Culv Frctn Ls (ft)	1.11
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.38	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.70	Q Weir (cfs)	637.61
E.G. IC (ft)	394.37	Weir Sta Lft (ft)	43.81
E.G. OC (ft)	395.76	Weir Sta Rgt (ft)	291.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.37
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	237.06
Culv Crt Depth (ft)	3.81	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.80	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.48
Q Barrel (cfs)	110.80	Culv Vel DS (ft/s)	5.26
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.22
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.65	Weir Sta Lft (ft)	
E.G. OC (ft)	391.05	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.74	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.97	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.94	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	160.67	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.38
Q Barrel (cfs)	160.67	Culv Vel DS (ft/s)	6.08
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.77

W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	390.20	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	389.99	Culv Exit Loss (ft)	0.36
Delta EG (ft)	1.35	Culv Entr Loss (ft)	0.10
Delta WS (ft)	1.37	Q Weir (cfs)	
E.G. IC (ft)	391.46	Weir Sta Lft (ft)	
E.G. OC (ft)	391.91	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	390.27	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.99	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.49	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.50	Min El Weir Flow (ft)	394.39

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	297.72	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.57
Q Barrel (cfs)	297.72	Culv Vel DS (ft/s)	8.90
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	391.43	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	391.04	Culv Exit Loss (ft)	0.84
Delta EG (ft)	2.53	Culv Entr Loss (ft)	0.71
Delta WS (ft)	2.76	Q Weir (cfs)	
E.G. IC (ft)	393.56	Weir Sta Lft (ft)	
E.G. OC (ft)	393.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.84	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	366.36	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.50
Q Barrel (cfs)	366.36	Culv Vel DS (ft/s)	9.44
E.G. US. (ft)	395.25	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.11	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.59	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	392.07	Culv Exit Loss (ft)	0.87
Delta EG (ft)	2.66	Culv Entr Loss (ft)	0.70
Delta WS (ft)	3.04	Q Weir (cfs)	263.03
E.G. IC (ft)	394.84	Weir Sta Lft (ft)	70.13
E.G. OC (ft)	395.26	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.15	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	392.07	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)	4.90	Weir Flow Area (sq ft)	123.26
Culv Crt Depth (ft)	3.97	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	354.22	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.85
Q Barrel (cfs)	354.22	Culv Vel DS (ft/s)	8.85
E.G. US. (ft)	395.57	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.40	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	1.16
W.S. DS (ft)	392.60	Culv Exit Loss (ft)	0.70
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.61
Delta WS (ft)	2.80	Q Weir (cfs)	493.18
E.G. IC (ft)	394.55	Weir Sta Lft (ft)	49.49
E.G. OC (ft)	395.58	Weir Sta Rgt (ft)	286.44
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.21
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.83
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	196.32
Culv Crt Depth (ft)	3.87	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	347.95	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.70
Q Barrel (cfs)	347.95	Culv Vel DS (ft/s)	8.70
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.59	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.38	Culv Frctn Ls (ft)	1.12
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.38	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.70	Q Weir (cfs)	637.61
E.G. IC (ft)	394.41	Weir Sta Lft (ft)	43.81
E.G. OC (ft)	395.77	Weir Sta Rgt (ft)	291.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.37
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	237.06
Culv Crt Depth (ft)	3.82	Min El Weir Flow (ft)	394.39

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01
29.32	394.71	29.33	394.38	39.55	392.85	60.92	392.22	95.59	390.4
100.13	389.82	106.73	388.97	116.38	387.66	117.95	386.81	124.68	386.27
130.57	386.46	134.27	387.9	134.7	388	137.88	388.68	144.79	390.87
157.88	392.09	174.45	391.81	191.33	392.09	218.95	392.7	229.4	392.07
229.72	392.09	239.13	392.16	239.87	392.21	251.99	392.37	252.81	392.33
253.84	392.05	264.78	392.06	265.66	392.35	265.82	392.37	274.13	392.48
275.38	392.39	275.8	392.37	280.37	392.38	285.74	392.34	288.04	392.35
289.04	392.37	289.76	392.35	291.67	392.43	292.2	392.41	293.73	392.52
294.34	392.49	295.48	392.61	297.43	392.5	299.89	392.58	301.52	392.7
302.57	392.72	317.67	393.33	321.58	393.35	323.43	393.4	328.45	393.52
336.04	393.41	337.54	393.43	342.18	393.53	347.45	393.83	351.46	393.93
353.19	394	353.68	394.06	355.32	394.12	356.64	394.21	359.84	394.23
363.57	394.38	408.86	396	412.96	396.28	417.56	396.44		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.73	.04	137.88	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
106.73	137.88	74.95	89.37	103.36	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	104.8	391.2	F
140.7	417.56	391.2	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9499

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.42	1.16	397.39	10.04	396	12.41	395.1	15.2	394
19.89	392.3	20.69	392	30.94	390.03	58.35	389.54	78.64	389.7
91.71	389.72	91.72	389.72	95.66	389.73	106.35	385.4	108.48	385.35
121.85	388.31	126.28	389.29	134.6	389.39	148.99	387.24	154.41	388.47
172.52	389.82	180.01	390	192.12	392	192.21	392.01	204.6	394
211.88	395.17	217.46	396	219.87	396.49	223.11	397.11	227.54	398
230.91	398.56	233.71	399	240.41	400	246.88	400.81		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	95.66	.04	126.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.

```
         95.66  126.28            98.65   101.8  104.92             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9398

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   398.2    5.52  398.06    6.45     398   10.27  396.93   13.95     396
   17.15   395.1   21.18     394   22.21  393.72   23.21  393.45   25.97  392.71
   28.56     392   35.43  391.01   38.29   390.6   43.03     390   43.15  389.99
   46.04  389.74   46.81   389.7   47.09  389.68   47.37  389.65   55.11   389.4
   55.76  389.36   56.28  389.32   56.92  389.26   63.39  388.58   69.33  388.73
    71.4  388.44   71.45  389.03   80.15  389.63   92.99  388.55  114.44  388.98
  120.46  388.94  120.47  388.94  128.65  388.89  134.08  384.53  135.79  384.42
  141.88  384.75  145.59  388.85  150.79  388.83  167.65  388.75  186.81  388.92
  200.79  389.39   202.6     390  212.88  391.15  214.18     392  222.75   392.3
  224.12  392.62  227.87  392.98  232.15  393.19  232.46  393.21  235.68  393.41
  238.89  393.56  241.36  393.69  244.69  393.87  245.13  393.89  247.11     394
   255.3  394.93  262.09  395.66  265.18     396  268.55  396.34  272.92  396.76
  279.66  397.44  280.66  397.53  281.55  397.61  285.79     398   291.8  399.12
  296.37     400   301.1  400.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  128.65     .04  145.59    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        128.65  145.59            97.24   96.47   94.54             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9301

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.19    3.07     400    4.08  399.94     4.2  399.94   13.57  399.39
    15.2  399.29   20.44  399.07   21.01  399.05   21.75  399.02   22.33     399
   33.53  398.93   34.16  398.91   34.62  398.89   50.07  398.18   51.97  398.04
   52.52     398   56.81  396.58   58.64     396   59.61  395.91   64.07  395.25
   72.56     394   73.12  393.94    74.3  393.83    84.4  392.97   90.89  392.65
   97.02  392.35  101.28  392.17  101.59  392.16  101.86  392.14  101.98  392.14
  104.04     392   106.2  392.22  109.76  392.28  110.09  392.26   110.2  392.25
  111.04  392.21   113.1  392.09  140.12  387.83   145.5  387.55  154.95  387.07
  157.77  384.36  160.52  383.31  166.94  384.65  171.14  388.29  175.86  388.27
  175.87  388.27  183.69  388.23  215.21  388.62  222.39   389.2  234.24  392.69
  252.67  392.11  269.21  391.61  287.95  393.96  291.68     394  304.65  395.18
  314.29  395.71  317.24  395.93  317.28  395.93  318.14     396  320.84  396.21
   321.8   396.3  324.25  396.51  326.08  396.68  329.75  397.01  336.95   397.7
  338.16  397.81  340.03     398  341.44  398.43   347.8     400  351.27  400.78
  352.31  401.05

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  154.95     .04  171.14    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        154.95  171.14           109.84     105  100.42             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    42.5    98.1     405

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9196

INPUT
Description:
Station Elevation Data    num=      76
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.06	3.11	399.1	7.66	399.14	8.21	399.14	11.14	399.2
14.16	399.24	15.16	399.23	16.06	399.21	16.45	399.2	16.79	399.18
17.07	399.17	44.77	399	46.3	398.96	57.79	398.17	58.05	398.12
58.52	398.07	59.24	398.01	59.47	398	59.81	397.95	60.63	397.83
60.69	397.82	61.36	397.83	62.34	397.8	62.8	397.77	63.34	397.77
63.74	397.73	73.15	396.86	74.17	396.76	74.98	396.67	80.24	396
91.29	394.71	96.77	394	103.28	393.2	108.02	392.64	109.29	392.48
110.44	392.34	113.4	392	129.6	390	133.01	389.51	134.1	389.41
135.16	389.31	138.39	388.96	141.78	388.59	143.61	388.38	145.61	388.15
146.23	388.08	146.93	388.04	146.98	388	156.92	387	192.18	386.94
214.32	387.26	224.37	387.23	224.38	387.23	230.17	387.21	234.05	385.77
239.97	384.81	241.03	384.18	243	383.81	247.36	387.68	256.1	387.12
258.34	386.98	282.41	388.4	293.08	392.68	309.62	391.47	323.53	392.22
323.58	392.18	354.2	394	361.45	395.27	365.79	396	370.25	397.12
373.9	398	375.39	398.33	383.13	400	386.3	400.73	391.87	402
395.39	402.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	230.17	.04	247.36	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
230.17	247.36	197.07	208.89	195.59	.1 .3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
11	50.8	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8987

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.15	2.15	402.17	3.39	402.13	6.04	402.17	12.51	402.07
13.01	402.08	14.07	402.07	15.03	402.07	16.62	402.1	16.88	402.09
17.7	402.05	18.67	402	24.82	401.62	50.49	400	71.91	398.02
72.1	398	72.14	397.99	82.9	396	83.83	395.8	92.09	394
100.48	392.04	100.64	392	100.82	391.96	101.02	391.92	110.17	390
121.03	388.29	142.19	386.02	152.75	385.4	161.75	385.92	161.76	385.92
161.94	385.93	170.22	385.8	172.51	383.34	178.25	382.77	183.07	383.36
185.81	386.43	193.25	386.15	202.96	385.78	222.78	385.7	249.39	385.47
263.78	390.18	301.3	390	301.69	390.04	302.4	390.1	313.7	391.1
324.37	392	326.83	392.6	329.22	393.19	332.48	394	335.16	394.95
338.19	396	340.18	396.58	342.55	397.27	344.45	397.82	345.03	398
346.35	398.38	351.77	400	352.66	400.28	356.31	401.47	357.07	401.72
357.94	402	358.9	402.3	364.45	404	365.62	404.4	369.07	405.49

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	170.22	.04	185.81	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
170.22	185.81	233.38	233.77	226.61	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8753

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.84	3.57	392.36	4.48	392.24	6.24	392	14.25	391.04
22.57	390	39.19	388.36	42.66	388	43.14	387.95	44.71	387.76
45.13	387.7	53.93	387	55.07	386.91	55.91	386.89	59.98	386.86
67.22	387.07	71.26	386.74	71.58	386.73	74.94	386.49	75.24	386.48
79.99	386.13	80.09	386.12	81.64	386	140.52	386.79	179.2	384.55
199.15	384.94	212.08	384.65	214.59	384.6	226.78	384.34	229.61	382.96
231.97	382.55	232.78	382.41	236.12	381.99	237.03	382.27	237.82	384.79
243.64	385.02	243.65	385.02	246.4	385.13	254.4	387.48	262.5	388.23
269.36	387.48	284.51	387.86	284.57	388.25	284.6	388.25	284.74	388.27
302.51	390	304.49	390.31	314.62	392	318.02	392.86	322.27	394

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  323.63  394.41  327.41  395.54  328.32  395.82   328.9     396  329.96  396.36
  334.49     398  337.27  399.01  339.54     400  340.77  400.45  344.57     402
  346.47   402.7     350     404   351.3  404.47  352.94  405.01  353.27  405.12

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  226.78     .04  237.82    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        226.78  237.82           178.41  174.76  168.62             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8579

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.17    3.31     400   17.74  399.07   34.62     398   35.22  397.93
   46.41  397.26   51.75  396.96   59.26   396.5   60.57  396.41   63.23  396.27
   68.83     396   75.46  394.89   76.44  394.72   79.84  394.17   80.17  394.11
   80.95     394   93.93  392.04   94.14     392   94.63  391.88   95.67  391.71
   95.96  391.67   96.13  391.66   102.2  391.37   103.3  391.28  107.14  391.06
  111.25  390.74   112.8  390.64   116.2  390.33  116.74  390.29  119.66     390
  124.86  389.68  126.23  389.59  129.14  389.43  130.57  389.33  132.66  389.17
   135.1  389.03     138  388.83  141.06  388.61  147.32  388.13  148.92     388
  153.19  387.46  172.43  385.68  186.19  383.82  200.87  383.46  218.33  383.53
  227.14  382.25  231.16  382.93  233.37  383.31  235.71  383.61  242.87  381.38
  248.28  381.13  250.03  381.37  251.19  383.67  263.28  383.69  264.68   383.7
  279.14   384.5  298.66  387.04   300.8     387  315.88     390  320.59  391.65
   321.5     392  322.64  392.54  325.53     394   328.7  395.54  329.55     396
  332.04  397.23  333.33     398  334.37  398.44  338.88     400  339.68  400.16
  340.45  400.35  347.58     402  352.32   402.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  235.71     .04  251.19    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.71  251.19           198.29  204.23  206.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8374

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  401.05     .39  401.02   14.71     400   17.51  399.78   17.87  399.76
   18.37  399.72   19.63  399.64   20.25   399.6      22  399.47   31.49  398.77
   42.12     398   43.17  397.92   43.74  397.88   48.54  397.52   49.54  397.46
   51.19  397.35   54.98  397.06   67.52   396.4   67.98  396.37    72.6  396.03
      73     396   77.65  395.72   79.49   395.6   80.67  395.52   82.29  395.41
   83.66  395.31   85.08   395.2  104.07     394  108.69  393.72  110.21  393.61
  111.59  393.51  116.39  393.15  122.53  392.72  129.15  392.19  131.43     392
  140.54  390.76  146.03     390  147.63  389.84  149.67  389.65   158.7  388.75
  166.96     388  174.92  387.31  176.26  387.21  182.29     386  189.22  384.97
  217.89   382.7  254.28  382.69  262.97  382.52  262.98  382.52   272.5  382.34
  274.84   380.5  276.51  380.31  286.75  380.32  292.45  384.62  293.85  384.83
  305.64   386.6  321.38     388  325.59  388.89  331.68     390  334.17  390.71
  336.02   391.3   338.3     392  343.97  393.91  344.22     394  345.13  394.36
  349.46     396  350.95   396.6  354.45     398  356.99  399.37  358.18     400
  359.59  400.71  360.34  401.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   272.5     .04  292.45    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         272.5  292.45           144.9  145.45  146.03             .1       .3

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 8229

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.36	5.81	394.06	6.29	394	7.37	393.95	45.41	392
69.28	390.22	72.15	390	72.18	390	72.26	389.98	72.54	389.95
73	389.89	74.69	389.72	75.45	389.65	75.92	389.61	75.99	389.6
79.77	389.37	82.3	389.25	100.97	388.39	107.53	388	110.36	387.9
110.76	387.9	112.75	387.84	132.43	386	139.68	385.1	170.44	382.68
187.75	382.12	197.62	382.13	197.63	382.13	207.39	382.14	209.28	380.1
212.63	379.79	215.85	380.15	217.64	381.75	227.71	382.65	227.84	382.66
243.37	383.19	265.96	384.67	268	384.46	288.88	388	293.09	388.12
308.33	389.98	308.55	389.98	309.46	389.99	310.08	390	315.47	391.1
319.76	391.98	319.9	392	320.02	392.04	321.07	392.37	326	393.9
326.33	394	328.6	394.86						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	207.39	.04	217.64	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
207.39	217.64	135.27	135.16	134.66	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8094

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.62	2.48	394.2	3.72	394	3.8	393.98	4.1	393.92
4.62	393.84	5.04	393.78	5.44	393.73	5.7	393.7	24.53	392.35
27.13	392.1	27.41	392.08	28.22	392	37.38	391.13	48.65	390
55.52	389.55	79.43	388.11	79.45	388.11	79.5	388.1	79.73	388.02
79.79	388	96.53	386.44	99.06	386.2	101.25	386	106.88	385.44
109.08	385.26	113.06	384.89	116.1	384.62	119.34	384.4	120.88	384.28
121.97	384.22	122.35	384.19	122.91	384.14	134.05	383.5	144.72	382.7
163.81	381.63	182.02	380.88	183.82	381.01	183.84	381.01	194.28	381.76
195.27	379.09	198.85	378.24	204.43	378.53	207.68	381.82	215.37	381.59
219.87	381.46	228.39	381.39	231.06	382.03	246.18	381.9	274.41	383.36
311.66	389.55	311.72	389.81	311.73	389.81	329.62	392	337.85	393.59
339.81	394	342.65	394.79	346.84	396	349.21	396.76	352.92	398
358.41	399.96	358.53	400	358.64	400.03	368.44	402	368.97	402.04
369.04	402.04	369.13	402.05	375.87	402.56	376.87	402.63	378.22	402.73
382.48	403.06	386.91	403.38	388.95	403.53	390.87	403.66		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	194.28	.04	207.68	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
194.28	207.68	138.21	139.81	140.01	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7954

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	390.87	1.06	390.76	5.56	390.36	8.09	390.17	9.7	390.06
12.95	389.88	15.86	389.75	20.41	389.55	21.37	389.49	22.17	389.45
26.06	389.27	27.8	389.18	29.65	389.1	31.21	389.02	32.58	388.93
33.19	388.89	40.18	388.65	41.65	388.54	44.29	388.45	47.14	388.32
47.67	388.28	49.22	388.2	50.93	388.11	52.62	388	54.06	387.89
58.14	387.52	60.02	387.34	70.48	386.32	73.92	386	75.83	385.87
81.99	385.49	86.05	385.25	88.16	385.06	94.21	384.69	95.33	384.57
98.59	384.23	99.42	384.17	100.92	384	114.44	382.88	125.39	382
130.61	381.95	156.45	380.05	188.73	379.73	199.32	380.23	210.56	380.77

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     212   378.9  214.38  377.79  218.13  379.54  221.11  380.65  229.58  380.68
  231.23  380.69  249.42  380.31   281.8  380.49   295.4     380  299.39  381.16
  302.17     382  305.31  382.93  310.71  384.55  316.22     386  323.56  387.01
  330.85     388  342.34   389.5  345.84     390  347.98   390.9  350.48     392
  352.14  392.75  355.01     394  357.39  394.99  359.91     396  362.57  396.94
  365.15  397.64  366.49     398  375.99  398.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  210.56     .04  221.11    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        210.56  221.11           155.28  153.64  152.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7800

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  389.23     6.4  388.77   18.95     388   32.05  387.12   34.38  386.96
   40.95  386.52   41.74  386.47   42.88  386.38   48.62     386   49.93  385.92
   50.74  385.86   62.21   385.1   65.97  384.84    73.9  384.32   75.81   384.2
   77.92  384.08   78.06  384.07   79.37     384   79.61  383.95   79.79  383.92
    79.9  383.91    81.2  383.76   81.59  383.72   81.85  383.71   82.72  383.74
   88.11  383.68   89.08  383.64   89.68  383.58   90.64  383.53   91.54  383.48
   92.48  383.38   93.55  383.29   96.76     383   98.06  382.88   99.04  382.78
  102.88  382.37  106.07     382  129.44  380.05  152.75  378.79  172.94  379.22
  186.27  379.75  187.83  378.84  191.51  378.79  198.74  378.73     200  379.32
  200.83   379.7  211.69     379  223.63  379.27  230.99   379.1  240.48  378.88
  259.49  379.02  278.05  378.97  305.83  379.75  307.52     380  314.08   381.6
  315.71     382  316.56  382.21  318.83  382.81  323.87     384  331.19  385.58
  333.53     386   340.6  386.91  350.42     388  352.19  388.23  353.07  388.36
  356.29  388.87  360.39  389.49  361.84  389.72  363.36     390  364.77  390.43
  366.25  390.85  370.11     392  372.25  392.58

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.27     .04  200.83    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.27  200.83           252.37  252.82  252.55             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7548

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.07     .78     384    5.11  383.66    7.63   383.5   11.97  383.17
   14.64  382.99   17.76  382.76   24.91  382.21   27.52     382   28.85  381.83
   29.51  381.79   32.65  381.46   35.07  381.21   46.63     380   59.52  379.12
   61.36     379   65.17  378.74   75.34  378.13   77.34  378.05   77.62     378
   83.55  378.07   85.43  378.08   88.35  378.07   95.64  378.09  101.54  378.13
  108.95  378.07  110.55  378.08  119.01  378.06  138.28  378.06  168.39  378.45
  198.66  378.25  217.53  377.85  219.53  377.83  219.55  377.83  230.43  377.75
  232.68  376.67  235.51  375.57  238.58  376.37  240.21  377.92  249.56   377.9
  258.68  377.89  288.89  377.64  323.87  376.92   330.2  377.07  336.47     378
  340.56  378.61  343.65  379.04  345.35  379.25  349.52  379.62  352.72  379.89
  353.04  379.92  353.25     380  353.89  380.15   356.3  380.75  360.75     382
  369.15     384  377.97  385.33  382.29     386  383.74  386.27  393.23     388
  398.11     389  402.86     390  406.24  390.27  406.63  390.26  409.53     390
  411.75  389.85   413.2  389.77   418.1  389.46  420.07  389.37  423.04  389.17
  425.75  388.96   431.8   389.4  440.42     390   442.9  390.41  445.97  390.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  230.43     .04  240.21    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        230.43  240.21           174.12  180.41  186.79             .1       .3
```

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7367

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.88	17.18	384.04	17.79	384	19.31	383.69	27.57	382
33.56	381.11	40.22	380	72.92	378	75.63	377.86	83.54	377.49
84.36	377.49	86.2	377.54	86.99	377.54	87.28	377.52	88.37	377.57
88.81	377.59	98.7	377.77	99.18	377.78	99.84	377.77	153.1	379.18
184.66	379.38	209.09	379.76	209.11	379.76	216.46	379.87	218.28	379.16
220.46	378.71	224.14	378.3	227.18	379.5	239.26	379.44	239.27	379.44
256.12	379.35	283.76	378.85	301.95	376	306.84	375.99	309.51	375.94
311.37	375.92	312.47	375.93	313.98	375.94	315.54	376	317.31	376.05
328.94	376.26	339.82	376.48	386.56	377.48	387.24	377.47	389.22	377.48
389.83	377.49	393.84	377.67	396.67	377.79	398	377.85	399.4	377.89
400.73	377.95	403.02	378	405.65	378.1	407.78	378.19	409.29	378.26
410.92	378.34	413.44	378.46	417.48	378.69	420.02	378.83	428.31	379.29
429.6	379.36	436.31	379.72	436.88	379.75	441.68	380	449.79	380.68
452.35	380.9	458.41	381.46	460.97	381.69	464.19	382	470.57	382.96
477.61	384	480.68	384.57	488.87	386	495.27	386.99	498.55	387.34

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	216.46	.04	227.18	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
216.46	227.18	143.37	150.84	157.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7216

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.75	1.08	385.65	5.95	385.32	10.54	384.89	18.99	384.19
19.48	384.13	19.51	384.13	19.72	384.03	19.77	384.03	19.83	384
21.34	383.6	24.22	382.82	25.18	382.55	27.46	382	33.57	381.07
41.34	379.98	60.13	379	65.81	378.72	75.73	378.27	77.55	378.18
79.67	378.07	80.08	378.07	80.17	378.06	81.18	378	81.5	377.95
81.94	377.89	82.7	377.88	134.09	376.01	134.34	376	135.9	375.99
142.56	375.98	148.85	376	148.97	376	159.54	375.75	186.07	376.5
205.76	375.8	205.79	375.8	221.2	375.26	236.22	376.17	236.23	376.17
243.36	376.61	267.12	376.15	298.57	377.1	324.96	378	344.89	379.72
346.99	379.9	348.24	380	355.59	380.52	358.24	380.72	369.12	381.55
372.54	381.8	375.03	382	377.33	382.49	384.79	384	385.68	384.2
393.83	386	394.81	386.17	399.71	387.05	405.49	388	406.42	388.18
407.5	388.41	413.63	389.1	417.54	389.6	418.61	389.74	420.77	390
421.3	390.07	421.95	390.14	429.79	391.08	433.06	391.43	434.12	391.56
434.45	391.61	438.52	392	445.08	392.32	449.48	392.54	451.09	392.66

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.07	.04	243.36	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.07	243.36	190.28	186.42	181.46	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
377.1	439.5	390	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7030

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.29	2.41	387	10.05	386	29.45	384.45	32.78	384.15
33.33	384	36.52	383.46	40.31	382.87	43.31	382.38	46.06	382
46.12	381.98	48.59	381.84	49.64	381.82	49.97	381.8	50.4	381.79
50.62	381.77	71.01	380.53	81.91	380	92.52	379.05	103.93	378
123.79	376.72	134.74	376.11	135.07	376.05	135.57	376	135.6	375.99
137.36	375.81	139.35	375.62	140.29	375.67	145.45	375.59	151.15	375.29
153.13	375.29	164.88	375.94	165.28	375.96	165.81	376	175.82	375.48
205.64	375.09	233.21	375.65	248.05	375.46	259.75	375.31	261.56	373.84
262.29	373.43	263.48	373.62	268.09	375.54	278.5	375.62	279.83	375.63
309.7	376.93	312.89	376.93	319.01	378	322.75	379.67	328.88	379.92
332.16	380	333.98	380.26	345.53	382	358.26	384	368.51	385.52
371.9	386	379.53	387.21	385.4	388	395.57	389.56	398	389.92
398.64	390	402.14	390.27	406.61	390.59	410.26	390.83	412.74	390.96
415.65	391.11	416.49	391.16	419.22	391.29	423.04	391.64	423.34	391.66
427.09	392	428.37	392.13	432.56	392.47	446.6	393.09		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	259.75	.04	268.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
259.75	268.09	140.13	137.19	133.92	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
372.8	404.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6893

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.2	2.38	382.99	8.39	382.4	12.65	382	20.07	381.43
21.04	381.32	23.89	381.07	32.28	380	33.24	379.94	36.89	379.63
54.28	378.25	56.67	378	75.57	376.96	78.59	376.8	93.69	376
94.91	375.96	96.44	375.86	117.75	374.81	136.62	374	152.27	373.6
154.13	372.23	157.36	371.8	159.62	372.29	160.73	373.73	187.35	373.86
202.43	373.44	213.2	373.14	214.26	371.39	217.55	370.68	220.85	371.53
222.2	372.36	232.55	373.36	240.97	374.18	259.97	375.25	279.8	378.38
290.19	380	292.23	380.3	302.91	382	311	382.83	315.48	383.17
321.02	383.61	322.67	383.75	325.93	384	327.14	384.17	327.77	384.24
330.51	384.6	331.06	384.66	331.73	384.74	332.6	384.85	333.79	385.01
335.83	385.3	339.56	385.84	340.65	386	353.87	389.13	355.81	389.6
357.43	390	357.61	390.01	361.03	390.33	362.39	390.43	362.61	390.44
365.01	390.49	366.06	390.54	368.05	390.54	368.79	390.56	380.19	390.59
388.25	390.86								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.2	.04	232.55	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.2	232.55	124.46	126.53	128.02	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
333.6	364.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6766

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.56	7.75	380.34	9.62	380.18	11.59	380.1	27.69	379.6
34.11	379.36	42.51	378.88	44.96	378.81	50.68	378.9	55.82	378.75
59.91	378.59	69.06	378.34	72.96	378.1	76.53	377.98	77.17	377.98
78.44	377.94	85.15	377.54	110.99	376.09	111.42	376	115.69	375.87
158.02	374.36	160.91	374	186.61	372.66	212.26	373.01	237.02	373.1
242.58	372.73	249.33	372.28	253.11	370.17	254.8	369.76	259.27	370.49
262.36	373.11	274.27	374.24	274.29	374.25	278.85	374.68	293.57	375.12

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  310.54  376.12  337.65     378   341.5  378.38  344.84  378.75  345.88  378.88
  348.32  378.95   351.5  379.16  353.85  379.26   354.2  379.31  358.69  379.46
  365.18  379.62  366.28  379.73  367.47     380  369.55   380.4  370.86  380.58
  373.19  381.02  375.37  381.31  379.99     382  390.01     384   392.8  384.16
   404.5  384.66  418.06  384.49  421.86   384.5  423.36  384.56  430.23  384.62
  434.86  384.68  447.58  385.29  449.06   385.3  453.71  385.19  463.39  384.68
  463.96  384.68  468.82  384.87  472.42  384.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  237.02     .04  262.36    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        237.02  262.36           103.31  103.53  104.46             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   367.4   402.8     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6663

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  387.81    5.71  387.58   42.61  386.42   45.32  386.36   48.81  386.32
   50.39  386.29   52.99  386.11   54.86     386   63.52     384    72.4     382
   77.53  381.09   78.45  381.02   81.39  381.16   82.73  381.16   83.84  381.06
   85.14  381.03   90.04   380.7   91.84  380.48   94.76     380  107.44  379.41
  109.18  379.29  112.44  379.13  115.99  378.92  130.42     378  130.89  377.95
  160.38  376.65  180.56  376.17  184.97  375.98  189.81  375.85  195.23  375.67
  199.49  375.58  206.72  375.37  221.58  374.58  234.91     374  259.85  373.17
  294.97  372.71  311.02  372.56  311.04  372.56  319.15  372.49  321.59  371.64
  322.41  371.16  323.12   369.4  326.04  369.26  336.33  370.36  339.84  373.35
  341.19  373.46  341.21  373.46  355.51  374.57  385.65  374.57  391.75     376
  435.14  377.35  436.73  377.48  438.03   377.5  441.59  377.71  445.02     378
  461.23     380  462.22  380.21  465.24  380.76  470.16  381.69  472.06     382
  479.53  383.54  481.93     384  486.28  384.27  488.32  384.35  505.54  384.31
  515.18  384.49  518.45  384.46   533.6  385.11  535.47  385.12  546.46  384.34
  548.83   384.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  319.15     .04  339.84    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        319.15  339.84            90.58   94.53   97.72             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    49.7    87.5     390   451.6   492.3     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6568

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  387.88   11.84  387.56   41.49  386.42    44.7  386.32   47.75  386.21
    48.2   386.2   51.49  386.19   52.85  386.15   53.93  386.14   56.03  386.06
   57.13     386    62.1  385.38   72.23  384.41   73.61  384.08      74     384
   78.37  383.37   81.15  382.86   83.41  382.52   85.95     382   87.39  381.89
   89.26  381.77  106.91  380.23  109.52  380.12  112.81     380  123.86  379.46
  127.28  379.12  128.69  379.02   131.4  378.74  133.26   378.6  138.52     378
  144.95  377.67  154.93   377.2  167.84  376.57  179.91     376  190.81  375.63
  206.03  375.07  215.11  374.75  231.43  374.02  231.55     374  251.99  373.42
  286.56  372.07  303.48     372   303.5     372  307.17  371.99  309.55  369.54
  314.39  368.65  318.89   369.1  320.63   372.7  333.89  373.01   335.3  373.05
  354.94  374.07     388  376.19  406.97     378  432.51     380  436.02  380.51
  440.79  381.03  449.38     382  453.12  382.55  464.72  383.92  465.61     384
  472.99  385.68  474.22     386  482.07  387.25  486.94     388  503.32     390
  506.03  390.12  516.08  390.61  558.49  391.41  562.74  391.48  574.89  391.54
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	307.17	.04	320.63	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
307.17	320.63	112.95	114.27	115.74	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
56.9	70	395	480	528.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6454

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.74	7.58	382.41	11.61	382.36	18.35	382.85	20.37	382.77
21.37	382.79	29.92	382.63	32.76	382.6	39.52	382.39	47.69	382
53.79	381.37	55.59	381.15	62.67	380	71.51	378.91	77.75	378
80.09	377.84	81.89	377.87	84.21	378	85.66	378.04	91.88	378.33
93.96	378.47	103.28	378.95	112.28	379.59	117.21	379.85	119.53	380
122.79	380.14	126.31	380.18	133.22	380	134.81	379.84	137.81	379.45
141.48	378.79	145.53	378	155.89	376	166.96	373.47	173.88	373.47
191.09	372.71	200.3	371.97	201.3	371.89	212.37	370.12	213.27	368.43
215.67	368.3	218.52	368.67	224.12	371.79	230.68	372.35	245.49	373.6
269.36	373.99	286.75	373.99	309.85	374	325.09	374.82	342.86	375.85
347.28	376.79	353.2	378	358.5	378.88	365.42	379.84	366.88	380
374.5	381.38	377.36	382	383.44	382.65	394.15	384	397.08	384.34
402.2	384.86	404.24	385.01	407.53	385.3	408.74	385.37	414.73	385.6
419.68	385.94	428.4	386.28	432.3	386.26	436.12	386.41	452.71	387.66
457.68	388	470.4	388.25						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	201.3	.04	224.12	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
201.3	224.12	102.69	103.78	104.74	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
120.4	125.7	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6350

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.25	2.84	383.98	4.85	383.88	29.21	382.05	29.42	382
31.52	381.83	32.17	381.8	32.46	381.78	34.04	381.73	35.06	381.64
53.47	380.4	61.23	380	61.52	379.95	62.6	379.83	66.18	379.72
67.82	379.63	68.74	379.59	124.99	378	139.11	377.29	159.11	376.32
161.58	376.22	169.81	376	175.65	375.83	176.25	375.83	201	374.61
220.13	373.39	226.47	371.43	230.05	370.32	235.85	369.8	238.08	367.36
241.57	366.97	246.9	368.37	249.25	372.63	256.57	374.75	266.03	377.5
266.59	378	329.45	378	332.13	377.82	334.24	377.69	335.82	377.59
339.75	377.35	347.23	377.86	349.56	378	359.53	377.16	360.29	377.08
378.66	378	382.15	378.35	383.71	378.55	386.87	378.91	388.05	379.05
394.9	380	395.88	380.18	400.2	380.85	405.44	381.69	407.44	382
409.21	382.33	411.05	382.5	417.68	383.44	420.21	383.65	423.51	383.96
426	384.23	427.13	384.2	428.56	384.3	433.67	384.73	437.93	385.11
441.27	385.38	449.14	386.13	468.97	388				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	220.13	.04	249.25	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
220.13	249.25	52.33	53.78	55.24	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent

```
   264.6   271.9     390       F
   325.6   345.5     390       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   271.9   325.6     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6296

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  386.85    5.73  386.49   14.33     386   18.53  385.51   23.71  384.86
   25.79  384.56   29.31     384   30.39   383.8   37.57  382.43   39.51  382.02
   41.76  381.69   54.85     380   70.55   379.5   94.75  378.51   95.08  378.49
   95.41  378.49   98.12  378.36   99.34  378.31  103.26   378.2  106.66  378.14
  108.29  378.08  109.53  378.06  141.16  376.68  172.07   375.5  191.67  374.94
  202.55  371.87  209.11  370.03  214.77  369.87  215.93  367.68  217.55  367.41
  219.25  367.49  221.17     369   223.1  368.24  224.71   368.4  227.95  371.85
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.77  227.95            98.47   99.02   99.58             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 6250

INPUT
Description: Hearthstone Road
Distance from Upstream XS =      41
Deck/Roadway Width        =      30
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  109.53  378.06           126.2 378.165           148.4 377.583
   171.8 377.249           194.8 377.026             205  377.06  375.06
   219.5 377.097 375.097     230  377.36  375.36   242.2 377.664
   267.9 378.981           291.3 380.656           311.7 383.135
   336.6 385.512          479.75     398

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  386.85    5.73  386.49   14.33     386   18.53  385.51   23.71  384.86
   25.79  384.56   29.31     384   30.39   383.8   37.57  382.43   39.51  382.02
   41.76  381.69   54.85     380   70.55   379.5   94.75  378.51   95.08  378.49
   95.41  378.49   98.12  378.36   99.34  378.31  103.26   378.2  106.66  378.14
  108.29  378.08  109.53  378.06  141.16  376.68  172.07   375.5  191.67  374.94
  202.55  371.87  209.11  370.03  214.77  369.87  215.93  367.68  217.55  367.41
  219.25  367.49  221.17     369   223.1  368.24  224.71   368.4  227.95  371.85
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
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  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        214.77  227.95            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    93.6     378             109 378.165           131.9 377.583
   155.7 377.249           179.1 377.026             200  377.09  375.09
   204.2 377.097 375.097     225  377.23  375.23   227.3 377.664
   253.6 378.981           277.3 380.656           306.1 383.135
   331.6 385.512          338.94     386

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.5    2.88  381.26     8.6  380.81   10.21   380.8   18.26  381.42
   23.64  381.72   28.86     382   31.26  382.04   31.91  382.04   38.99     382
   43.19   381.9    43.7  381.88   47.28  381.77   47.53  381.75   49.17   381.7
   49.49  381.68    51.7  381.59   53.73  381.49   76.26  380.56   76.87  380.53
   77.82  380.46   79.53  380.32   83.18     380   86.26  379.56   88.68  379.19
   90.12  378.97   98.61     378  127.05   376.5  131.06   376.5  161.92   376.1
  189.14  374.65  197.54  369.94  197.55  369.93  203.42  366.64  221.43  366.39
  225.24  370.02  227.55  372.22  227.56  372.23  229.54   374.1  255.33   377.5
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        197.54  225.24            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5   375.5       F
   229.3  443.14   375.5       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
```

```
          Submerged Inlet Cd          =
          Submerged Inlet + Outlet Cd =      .8
          Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line
```

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	371.92	Element		
W.S. US. (ft)	371.60	E.G. Elev (ft)	371.49	371.13
Q Total (cfs)	209.00	W.S. Elev (ft)	370.80	371.06
Q Bridge (cfs)	209.00	Crit W.S. (ft)	370.57	368.07
Q Weir (cfs)		Max Chl Dpth (ft)	3.39	4.67
Weir Sta Lft (ft)		Vel Total (ft/s)	5.96	2.00
Weir Sta Rgt (ft)		Flow Area (sq ft)	35.04	104.58
Weir Submerg		Froude # Chl	0.78	0.16
Weir Max Depth (ft)		Specif Force (cu ft)	83.82	238.10
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	1.70	4.17
Min El Prs (ft)	375.36	W.P. Total (ft)	23.77	30.70
Delta EG (ft)	0.81	Conv. Total (cfs)	1759.3	8794.7
Delta WS (ft)	0.55	Top Width (ft)	20.61	25.07
BR Open Area (sq ft)	139.99	Frctn Loss (ft)	0.05	0.01
BR Open Vel (ft/s)	5.96	C & E Loss (ft)	0.31	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	1.30	0.12
BR Sel Method	Energy only	Power Total (lb/ft s)	7.75	0.24

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.86	Element		
W.S. US. (ft)	372.42	E.G. Elev (ft)	372.48	372.11
Q Total (cfs)	334.00	W.S. Elev (ft)	371.77	372.01
Q Bridge (cfs)	334.00	Crit W.S. (ft)	371.31	368.60
Q Weir (cfs)		Max Chl Dpth (ft)	4.36	5.62
Weir Sta Lft (ft)		Vel Total (ft/s)	5.92	2.60
Weir Sta Rgt (ft)		Flow Area (sq ft)	56.46	128.29
Weir Submerg		Froude # Chl	0.57	0.19
Weir Max Depth (ft)		Specif Force (cu ft)	153.73	362.33
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	2.47	5.12
Min El Prs (ft)	375.36	W.P. Total (ft)	27.12	32.59
Delta EG (ft)	0.77	Conv. Total (cfs)	3207.6	11881.6
Delta WS (ft)	0.43	Top Width (ft)	22.90	25.05
BR Open Area (sq ft)	139.99	Frctn Loss (ft)	0.06	0.02
BR Open Vel (ft/s)	5.92	C & E Loss (ft)	0.30	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	1.41	0.19
BR Sel Method	Energy only	Power Total (lb/ft s)	8.34	0.51

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	375.29	Element		
W.S. US. (ft)	374.65	E.G. Elev (ft)	374.79	374.17

Q Total (cfs)	772.00	W.S. Elev (ft)	373.47	373.87
Q Bridge (cfs)	772.00	Crit W.S. (ft)	372.90	369.98
Q Weir (cfs)		Max Chl Dpth (ft)	6.06	7.48
Weir Sta Lft (ft)		Vel Total (ft/s)	7.87	4.42
Weir Sta Rgt (ft)		Flow Area (sq ft)	98.12	174.78
Weir Submerg		Froude # Chl	0.66	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	430.63	722.68
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	3.92	6.99
Min El Prs (ft)	375.36	W.P. Total (ft)	32.04	36.31
Delta EG (ft)	1.18	Conv. Total (cfs)	7022.5	18511.2
Delta WS (ft)	0.80	Top Width (ft)	25.03	25.02
BR Open Area (sq ft)	139.99	Frctn Loss (ft)	0.11	0.04
BR Open Vel (ft/s)	7.87	C & E Loss (ft)	0.51	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	2.31	0.52
BR Sel Method	Energy only	Power Total (lb/ft s)	18.18	2.31

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	377.55	Element		
W.S. US. (ft)	376.80	E.G. Elev (ft)	377.54	377.50
Q Total (cfs)	1391.00	W.S. Elev (ft)	376.80	376.80
Q Bridge (cfs)	1345.09	Crit W.S. (ft)	374.57	371.47
Q Weir (cfs)	45.91	Max Chl Dpth (ft)	9.39	10.41
Weir Sta Lft (ft)	151.13	Vel Total (ft/s)	8.27	5.80
Weir Sta Rgt (ft)	237.39	Flow Area (sq ft)	168.24	239.78
Weir Submerg	0.00	Froude # Chl	0.68	0.37
Weir Max Depth (ft)	0.52	Specif Force (cu ft)	1140.70	1494.41
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)		
Min El Prs (ft)	375.36	W.P. Total (ft)	60.53	63.90
Delta EG (ft)	1.72	Conv. Total (cfs)		
Delta WS (ft)	1.50	Top Width (ft)		
BR Open Area (sq ft)	139.99	Frctn Loss (ft)		
BR Open Vel (ft/s)	9.61	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	378.37	Element		
W.S. US. (ft)	377.54	E.G. Elev (ft)	378.37	378.37
Q Total (cfs)	1736.00	W.S. Elev (ft)	377.54	377.54
Q Bridge (cfs)	1406.80	Crit W.S. (ft)	375.06	372.20
Q Weir (cfs)	329.20	Max Chl Dpth (ft)	10.13	11.15
Weir Sta Lft (ft)	97.96	Vel Total (ft/s)	6.50	5.14
Weir Sta Rgt (ft)	255.15	Flow Area (sq ft)	267.09	337.74
Weir Submerg	0.00	Froude # Chl	0.73	0.41
Weir Max Depth (ft)	1.34	Specif Force (cu ft)	1432.13	1781.52
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	3.11	3.69
Min El Prs (ft)	375.36	W.P. Total (ft)	146.29	155.57
Delta EG (ft)	1.77	Conv. Total (cfs)		
Delta WS (ft)	1.62	Top Width (ft)	85.75	91.64

BR Open Area (sq ft)	139.99	Frctn Loss (ft)	
BR Open Vel (ft/s)	10.05	C & E Loss (ft)	
BR Sluice Coef		Shear Total (lb/sq ft)	
BR Sel Method	Press/Weir	Power Total (lb/ft s)	

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

BRIDGE OUTPUT Profile #7-30-2016

			Inside BR US	Inside BR DS
E.G. US. (ft)	378.79	Element		
W.S. US. (ft)	377.88	E.G. Elev (ft)	378.79	378.79
Q Total (cfs)	2002.00	W.S. Elev (ft)	377.88	377.88
Q Bridge (cfs)	1408.56	Crit W.S. (ft)	375.06	372.73
Q Weir (cfs)	593.44	Max Chl Dpth (ft)	10.47	11.49
Weir Sta Lft (ft)	91.73	Vel Total (ft/s)	5.97	4.99
Weir Sta Rgt (ft)	249.70	Flow Area (sq ft)	335.62	401.30
Weir Submerg	0.00	Froude # Chl	0.73	0.43
Weir Max Depth (ft)	1.76	Specif Force (cu ft)	1602.47	1959.13
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	3.08	3.61
Min El Prs (ft)	375.36	W.P. Total (ft)	169.63	175.08
Delta EG (ft)	1.65	Conv. Total (cfs)		
Delta WS (ft)	1.54	Top Width (ft)	109.08	111.13
BR Open Area (sq ft)	139.99	Frctn Loss (ft)		
BR Open Vel (ft/s)	10.06	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6197

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39
225.24	370.02	227.55	372.22	227.56	372.23	229.54	374.1	255.33	377.5

```
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        197.54  225.24            75.78   74.81   73.83             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5   375.5       F
   229.3  443.14   375.5       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6122

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.69    8.11  379.53    9.53  379.45   17.27  379.23   20.32  379.02
   22.13  378.95    24.3  378.81   31.57  378.41   34.72  378.26   38.27  378.14
   47.27  377.96    49.2  377.94   52.81  377.79   56.11  377.88   60.11  377.91
   62.59  377.87   64.37  377.81   65.09  377.76   66.54   377.7   67.14  377.65
   68.62  377.58   71.62  377.27   75.62  376.99    79.3  376.57    81.7  376.35
   84.46     376  105.56  374.69  108.26  374.67  121.47  375.38  123.91   375.3
  125.19  375.41  127.48  375.55  129.74  375.66  131.98  375.57  134.89  375.74
  137.16  375.81  137.87  375.78  140.09  375.81  142.39  375.77  145.17  375.64
     148  375.41   151.1  375.05  154.75  374.52  159.06  373.88  159.11  374.24
   175.4  373.46  185.87  373.46  213.06  372.27  225.58  370.42  231.74  369.51
  232.66  367.04  234.89  366.62  240.64  367.46   244.1  370.65  253.02  370.54
  255.64  371.33  278.66  378.25  302.77  378.97  352.21     380   359.2  381.14
  364.26     382  367.65   382.7  370.16  383.19  373.86     384  378.45  385.21
  381.62     386  383.59  386.52  388.85     388  390.89  388.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  225.58     .04   244.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        225.58   244.1            98.18   94.21   91.92             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
   119.8   162.9     385       F
   185.6   201.5     385       F
   272.4   384.9     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   162.9   185.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6028

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   382.8   19.58  382.41   21.78  382.31   25.29     382   28.82  381.21
   33.73     380   38.53  378.96   47.92  377.02   53.08     376   53.61  375.96
   54.06  375.94    63.8  375.32   75.35  374.08   75.77     374   75.87     374
   79.55   373.5   79.83  373.47   80.44  373.45   80.74   373.5   108.3  372.93
  132.26  372.05  132.53     372  152.08     371  183.23  368.87  204.31   368.6
  204.32   368.6   205.1  368.59  214.72  368.32  216.43  366.61  219.36  365.53
```

223.23	366.03	225.53	367.69	234.47	368.82	242.06	369.78	266.05	372.16
283.38	373.66	295.75	374.49	302.61	375.35	306.21	375.74	307.44	375.9
308.45	376	309.16	376.16	309.43	376.21	312.19	376.42	326.29	377.09
336.37	377.85	338.16	378	343.77	379.27	346.84	380	352.57	381.65
353.72	382	360.42	384	366.91	386	373.75	388	374.25	388.15
375.39	388.44	376.82	388.77	382.2	390	385.62	390.91	387.5	391.38
390.05	392	391.18	392.24	393.51	392.7	394.79	392.94	395.7	393.09
396.68	393.28	398.05	393.5	400.71	394	401.05	394.02	401.31	394.02
401.89	394.05	402.27	394.05	404.67	394.17				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	214.72	.04	234.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
214.72	234.47	100.93	101.91	101.19	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
61	113.9	390	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
19.7	61	390	393.1	404.67	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5926

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.59	5.1	382	9.3	381.27	15.23	380.26	16.79	380
17.4	379.93	17.99	379.89	25.61	379.19	28.72	378.92	41.87	378.06
42.14	378.04	42.69	378.01	42.8	378	47.15	377.66	50.35	377.44
52.95	377.29	54.78	377.18	55.85	377.13	57.24	377.07	58.56	376.99
61.22	376.9	62.6	376.8	64.49	376.66	65.4	376.61	68.93	376.32
69.43	376.28	72.62	376	79.17	375.23	79.85	375.13	81.75	374.86
86.54	374.13	86.9	374.08	87.35	374	97.43	372.6	101.22	372
101.71	371.98	102.49	371.97	103.31	371.98	103.65	372	103.7	371.95
108.23	371.29	120.13	371.02	124.98	371.02	148.13	370.3	170.6	369.08
174.12	367.61	175.06	367.22	180.45	367.62	186.44	367.24	187.3	365.38
189.41	365.46	192.74	365.89	197.28	368.62	204.41	369.15	222.38	370.47
248.76	371.19	255	372	274.29	373.9	275.14	374	287.23	376
292.49	377.34	295.11	378	299.87	379.19	303.25	380	311.49	382
318.69	383.66	320.08	384	327.45	385.84	328.11	386	335.19	387.48
337.59	388	343.86	388.94	350.88	390	354.59	390.61	356.8	390.96

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.44	.04	197.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.44	197.28	102.11	102.54	102.93	.1 .3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
60.6	75.4	385	F
103.4	163.4	385	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
75.4	103.4	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5824

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.17	1.53	379.09	3.56	378.96	5.73	378.8	8.65	378.57
10.86	378.4	11.67	378.34	15.69	378	20.08	377.29	27.83	376
29.81	375.82	31.38	375.67	39.63	374.92	42.87	374.63	44.59	374.5
49.91	374	62.23	371.55	92.34	370.63	109.26	369.2	110.94	369.06
120.72	365.29	124.37	365.08	126.51	365.24	130.92	367.14	139.51	368.75
157.36	372.1	180.06	370.47	190.05	370.47	216.33	372	219.38	372.57

```
  223.55  373.34  225.27  373.66  227.19     374  231.58  375.26  234.22     376
  234.79  376.18  240.58     378  243.82  379.15  246.06     380  248.42  380.86
  251.63     382  257.95  383.86   258.4     384  260.44   384.5  266.77     386
  268.22  386.33  275.61     388  278.96   388.7   285.3     390  291.48  391.05
  292.67  391.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  109.26     .04  139.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        109.26  139.51            75.62   79.21   82.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5745

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     380    15.5  378.48   20.71     378    30.8  377.15   37.79  376.64
    40.3  376.44   46.11  376.04   46.38     376    47.1  375.96   69.11     374
    77.1  373.47  103.89  370.86  131.17   369.6  133.12  368.74  140.37  365.55
  143.61     365  144.73  363.71  148.48  363.03  150.47  363.33   159.4  368.15
  163.52  368.56  176.34  369.82  186.31   370.3  194.64  373.03  209.12  373.26
  225.27  372.55   225.6  372.55  225.92  372.54  226.18  372.55   226.7  372.55
   233.5  372.96   233.9  372.98  234.19     373  234.39     373  234.53  373.01
  234.67  373.01  234.83  373.02  242.93  373.56  243.64  373.58  246.98  373.68
  250.97   373.8  257.66     374  263.52  375.65  264.76     376  265.45  376.19
  271.67     378     272  378.09  278.61     380  283.25  381.15  286.54     382
  296.07  383.94  296.19  383.96  296.34     384  296.53  384.04  296.57  384.04
  296.61  384.05  296.75  384.07  297.08  384.12   302.2  384.91  306.31  385.41
  307.97  385.64  308.53  385.72  311.26     386  312.97  386.11  313.27  386.13
   317.7  386.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  131.17     .04   159.4    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        131.17   159.4             34.07   34.02   34.04             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   170.3   207.9     385       F
   225.8   247.8     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   207.9   225.8     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5711

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  159.68 366.004  162.62  367.56  165.67  367.85  185.89  369.73
  195.88  371.77  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09
  230.39  373.14  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18
  232.74     372  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03
  242.63  372.04  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43
  260.85     374  265.19   375.5  266.59     376  267.95  376.48  272.38     378
  276.41  378.97  280.63     380  288.84  381.31  293.41     382  301.54  382.96
  310.99     384   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.06  162.62            96.24   96.18   98.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 5650

INPUT
Description: Brookemede Road modified bridge opening to 20ft wide and assuming
             a 2ft thick roadway structure
Distance from Upstream XS =      37
Deck/Roadway Width        =      37
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     101 372.301             140  370.63  368.63     151 370.157 368.157
     160  370.11  368.11     188 369.953           218.7 370.181

Upstream Bridge Cross Section Data
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  159.68 366.004  162.62  367.56  165.67  367.85  185.89  369.73
  195.88  371.77  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09
  230.39  373.14  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18
  232.74     372  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03
  242.63  372.04  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43
  260.85     374  265.19   375.5  266.59     376  267.95  376.48  272.38     378
  276.41  378.97  280.63     380  288.84  381.31  293.41     382  301.54  382.96
  310.99     384   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        136.06  162.62            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  128.33  372.41           152.3 372.301           202.9 370.157
     211  370.11  368.11     231     370     368   238.6 369.953
   268.9 370.181

Downstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  375.09    1.07  375.04    1.94  375.04    2.62  375.01    3.78  375.02
       5  374.95    6.16  374.97   13.83   374.5   15.25  374.52   31.31  375.33
   32.18  375.35   39.66   374.3   45.41  373.86   50.93  373.59   53.48  373.55
   59.91  373.31    62.6  373.32   81.57  373.51   85.54  373.44   92.18  373.21
   98.33  373.03  102.35  373.09  105.39  372.98  113.27  372.64  128.33  372.41
  164.68   369.2  190.47  367.33  202.12  366.92  205.34  366.81  210.08   364.6
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
```

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  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        205.34   238.7             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8   369.5       F
     239   440.9   369.5       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)                367.11    Element                 Inside BR US  Inside BR DS
  W.S. US. (ft)                366.90    E.G. Elev (ft)               366.98        366.84
  Q Total (cfs)                209.00    W.S. Elev (ft)               366.73        366.74
  Q Bridge (cfs)               209.00    Crit W.S. (ft)               365.31        364.13
  Q Weir (cfs)                           Max Chl Dpth (ft)              4.22          4.93
  Weir Sta Lft (ft)                      Vel Total (ft/s)               4.00          2.56
  Weir Sta Rgt (ft)                      Flow Area (sq ft)             52.29         81.78
  Weir Submerg                           Froude # Chl                   0.34          0.20
  Weir Max Depth (ft)                    Specif Force (cu ft)         112.40        187.04
  Min El Weir Flow (ft)        369.97    Hydr Depth (ft)                2.67          4.09
  Min El Prs (ft)              368.63    W.P. Total (ft)               22.23         26.31
  Delta EG (ft)                  0.31    Conv. Total (cfs)            3435.2        6470.3
  Delta WS (ft)                  0.17    Top Width (ft)                19.57         20.02
  BR Open Area (sq ft)          83.21    Frctn Loss (ft)                0.07          0.02
  BR Open Vel (ft/s)             4.00    C & E Loss (ft)                0.07          0.01
  BR Sluice Coef                         Shear Total (lb/sq ft)         0.54          0.20
  BR Sel Method           Energy only    Power Total (lb/ft s)          2.17          0.52


Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or
greater than
         1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.

BRIDGE OUTPUT  Profile #2-YR

  E.G. US. (ft)                368.23    Element                 Inside BR US  Inside BR DS
  W.S. US. (ft)                367.97    E.G. Elev (ft)               368.10        367.94
  Q Total (cfs)                334.00    W.S. Elev (ft)               367.77        367.77
  Q Bridge (cfs)               334.00    Crit W.S. (ft)               366.07        364.70
  Q Weir (cfs)                           Max Chl Dpth (ft)              5.26          5.96
```

Weir Sta Lft (ft)		Vel Total (ft/s)	4.57	3.26
Weir Sta Rgt (ft)		Flow Area (sq ft)	73.09	102.49
Weir Submerg		Froude # Chl	0.35	0.24
Weir Max Depth (ft)		Specif Force (cu ft)	199.07	299.66
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)	3.65	5.12
Min El Prs (ft)	368.63	W.P. Total (ft)	24.61	28.38
Delta EG (ft)	0.35	Conv. Total (cfs)	5609.4	8963.0
Delta WS (ft)	0.18	Top Width (ft)	20.03	20.00
BR Open Area (sq ft)	83.21	Frctn Loss (ft)	0.08	0.02
BR Open Vel (ft/s)	4.57	C & E Loss (ft)	0.08	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.66	0.31
BR Sel Method	Energy only	Power Total (lb/ft s)	3.00	1.02

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	371.27	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	371.01	E.G. Elev (ft)	371.27	370.73
Q Total (cfs)	772.00	W.S. Elev (ft)	371.01	370.50
Q Bridge (cfs)	607.09	Crit W.S. (ft)	367.71	366.23
Q Weir (cfs)	164.91	Max Chl Dpth (ft)	8.50	8.69
Weir Sta Lft (ft)	124.99	Vel Total (ft/s)	5.30	3.00
Weir Sta Rgt (ft)	193.45	Flow Area (sq ft)	145.66	257.42
Weir Submerg	0.00	Froude # Chl	0.40	0.34
Weir Max Depth (ft)	1.31	Specif Force (cu ft)	594.08	706.09
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)	2.38	2.25
Min El Prs (ft)	368.63	W.P. Total (ft)	107.09	163.26
Delta EG (ft)	1.13	Conv. Total (cfs)		
Delta WS (ft)	1.04	Top Width (ft)	61.14	114.27
BR Open Area (sq ft)	83.21	Frctn Loss (ft)		
BR Open Vel (ft/s)	7.30	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy are based on critical
depth over the weir.

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	372.74	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	372.27	E.G. Elev (ft)	372.74	371.91
Q Total (cfs)	1391.00	W.S. Elev (ft)	372.27	371.47
Q Bridge (cfs)	603.89	Crit W.S. (ft)	368.24	367.97
Q Weir (cfs)	787.12	Max Chl Dpth (ft)	9.76	9.66
Weir Sta Lft (ft)	85.05	Vel Total (ft/s)	4.55	2.67
Weir Sta Rgt (ft)	254.79	Flow Area (sq ft)	305.61	520.47
Weir Submerg	0.36	Froude # Chl	0.40	0.34
Weir Max Depth (ft)	2.79	Specif Force (cu ft)	955.16	1032.35
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)	2.37	3.49
Min El Prs (ft)	368.63	W.P. Total (ft)	175.00	198.19
Delta EG (ft)	1.05	Conv. Total (cfs)		
Delta WS (ft)	0.80	Top Width (ft)	128.76	149.14
BR Open Area (sq ft)	83.21	Frctn Loss (ft)		
BR Open Vel (ft/s)	7.26	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	373.22	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	372.56	E.G. Elev (ft)	373.22	372.41
Q Total (cfs)	1736.00	W.S. Elev (ft)	372.56	372.07
Q Bridge (cfs)	574.85	Crit W.S. (ft)	372.30	371.39
Q Weir (cfs)	1161.15	Max Chl Dpth (ft)	10.05	10.26
Weir Sta Lft (ft)	76.48	Vel Total (ft/s)	4.47	2.74
Weir Sta Rgt (ft)	257.10	Flow Area (sq ft)	388.42	632.75
Weir Submerg	0.47	Froude # Chl	0.44	0.31
Weir Max Depth (ft)	3.26	Specif Force (cu ft)	1138.03	1273.28
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)	2.54	3.56
Min El Prs (ft)	368.63	W.P. Total (ft)	199.09	227.04
Delta EG (ft)	0.90	Conv. Total (cfs)		
Delta WS (ft)	0.49	Top Width (ft)	152.72	177.96
BR Open Area (sq ft)	83.21	Frctn Loss (ft)		
BR Open Vel (ft/s)	6.91	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	373.54	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	372.73	E.G. Elev (ft)	373.54	372.77
Q Total (cfs)	2002.00	W.S. Elev (ft)	372.73	372.48
Q Bridge (cfs)	548.56	Crit W.S. (ft)	372.79	371.62
Q Weir (cfs)	1453.44	Max Chl Dpth (ft)	10.22	10.67
Weir Sta Lft (ft)	71.50	Vel Total (ft/s)	4.49	2.82
Weir Sta Rgt (ft)	258.62	Flow Area (sq ft)	446.21	710.98
Weir Submerg	0.55	Froude # Chl	0.46	0.29
Weir Max Depth (ft)	3.58	Specif Force (cu ft)	1275.81	1478.74
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)	2.77	3.32
Min El Prs (ft)	368.63	W.P. Total (ft)	207.79	263.23
Delta EG (ft)	0.78	Conv. Total (cfs)		
Delta WS (ft)	0.25	Top Width (ft)	161.35	214.09
BR Open Area (sq ft)	83.21	Frctn Loss (ft)		
BR Open Vel (ft/s)	6.59	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected

from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5614

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	375.09	1.07	375.04	1.94	375.04	2.62	375.01	3.78	375.02
5	374.95	6.16	374.97	13.83	374.5	15.25	374.52	31.31	375.33
32.18	375.35	39.66	374.3	45.41	373.86	50.93	373.59	53.48	373.55
59.91	373.31	62.6	373.32	81.57	373.51	85.54	373.44	92.18	373.21
98.33	373.03	102.35	373.09	105.39	372.98	113.27	372.64	128.33	372.41
164.68	369.2	190.47	367.33	202.12	366.92	205.34	366.81	210.08	364.6
211.22	364.43	215.09	361.81	217.13	362.04	229.59	362.98	238.7	368.44
238.98	368.61	251.44	369.69	268.94	370.18	285.07	369.62	290.27	370.06
298.37	370.04	306.37	370.28	324.69	371.75	335.39	372	342.38	373.55
344.58	374	353.22	376	364.13	378	366.42	378.31	380.54	380.03
386.38	380.25	391.69	380.39	399.18	380.94	403.65	381.15	406.06	381.34
407.91	381.42	410.66	381.64	411.73	381.67	415.82	382	420.24	382.3
421.1	382.39	423.89	382.58	424.39	382.64	428.52	382.91	431.83	383.32
435.07	383.79	435.47	383.82	436.48	384	438.12	384.43	440.9	385.22

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	205.34	.04	238.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
205.34	238.7	60.47	54.67	45.26	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	193.8	369.5	F
239	440.9	369.5	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
72.7	102.2	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5560

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.71	12.44	380.66	20.28	380.48	30.01	380.06	32.55	380
35.14	379.9	40.44	379.76	66.9	378.85	77.73	378.19	86.8	377.53
106.28	376	135.5	374	137.27	373.83	145.55	373.21	146.86	373.14
152.29	373.03	158.19	372.73	169.54	372.53	171.14	372.42	174.7	372
177.92	371.83	200.19	370.97	216.51	371.11	224.54	370.88	233.81	370.74
237.26	370.65	249.92	370	272.36	369.5	305.11	368.25	330.75	367.7
351.63	367.26	351.64	367.26	352.8	367.24	361.62	364.64	365.14	363.68
366.63	362.08	370.12	362.09	377.69	362.11	381.2	366.86	381.86	366.92
381.88	366.92	400.75	368.4	415.84	369.84	428.22	370.13	441.48	370.08
454.62	370.47	468.56	371.58	474.03	371.79	478.41	372	486.49	373.21
492.4	374	496.8	374.72	506.14	376	510.13	376.65	519.35	378
525.84	378.52	527.4	378.56	530.32	378.74	538.47	379.03	541.22	379.02
541.91	379.05	543.2	379.02	545.47	379.17	545.81	379.17	552.05	379.68
557.2	380.19	563.37	380.95	569.96	382	577.27	384	584.9	386

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	352.8	.04	381.2	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
352.8	381.2	56.62	49.74	41.3	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5510

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.59	1.07	380.58	1.48	380.59	2.49	380.59	2.99	380.6
9.84	380.59	12.79	380.53	14.86	380.46	15.72	380.47	20.91	380.2
24.76	379.96	28.25	379.72	30.83	379.52	32.58	379.45	37.73	379.07
40.23	378.86	49.96	378	59.38	377.22	64.61	377	68.91	376.7
75.68	376.43	88.62	375.8	93.88	375.47	110.63	374.53	117.52	374
126.29	372.67	130.82	372	140.38	370	159.94	369.31	179.57	370
179.8	369.97	184.5	369.62	189.58	368.99	224.93	368.5	247.96	367.97
247.98	367.97	251.67	367.89	261.11	363.47	263.32	362.78	268.95	362.16
273.96	367.47	278.36	367.73	278.38	367.73	296.08	368.76	313.23	369.9
323.24	370.14	330.47	370.12	347.85	370.63	358.08	371.45	362.09	371.6
374.42	372	382.74	373.11	386.18	373.46	390.84	374	394.8	374.62
398.13	375.18	399.12	375.33	404.19	376	412.46	376.97	413.64	376.99
415.85	376.98	417.59	376.87	421.37	377.08	424.29	377.21	428.49	377.45
434.63	377.81	437.32	378	439.02	378.26	443.49	379	448.84	380
457.57	382	465.83	384						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	251.67	.04	273.96	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
251.67	273.96	36.56	36.42	38.18	.3	.5

Ineffective Flow num= 4

Sta L	Sta R	Elev	Permanent
3	60.5	385	F
180.5	232.8	385	F
232.8	241.8	367.86	F
281.5	313.2	368.03	F

BRIDGE

RIVER: Plumtree
REACH: Plumtree RS: 5500

INPUT
Description: Driveway
Distance from Upstream XS = 8.75
Deck/Roadway Width = 11.5
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 7

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
245	368		246.3	368.296		251.7	369.922	368.922
261.7	369.925	368.925	272.1	369.867	368.867	278.5	368.291	
281	367.8							

Upstream Bridge Cross Section Data
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.59	1.07	380.58	1.48	380.59	2.49	380.59	2.99	380.6
9.84	380.59	12.79	380.53	14.86	380.46	15.72	380.47	20.91	380.2
24.76	379.96	28.25	379.72	30.83	379.52	32.58	379.45	37.73	379.07
40.23	378.86	49.96	378	59.38	377.22	64.61	377	68.91	376.7
75.68	376.43	88.62	375.8	93.88	375.47	110.63	374.53	117.52	374
126.29	372.67	130.82	372	140.38	370	159.94	369.31	179.57	370
179.8	369.97	184.5	369.62	189.58	368.99	224.93	368.5	247.96	367.97
247.98	367.97	251.67	367.89	261.11	363.47	263.32	362.78	268.95	362.16
273.96	367.47	278.36	367.73	278.38	367.73	296.08	368.76	313.23	369.9
323.24	370.14	330.47	370.12	347.85	370.63	358.08	371.45	362.09	371.6
374.42	372	382.74	373.11	386.18	373.46	390.84	374	394.8	374.62
398.13	375.18	399.12	375.33	404.19	376	412.46	376.97	413.64	376.99
415.85	376.98	417.59	376.87	421.37	377.08	424.29	377.21	428.49	377.45
434.63	377.81	437.32	378	439.02	378.26	443.49	379	448.84	380
457.57	382	465.83	384						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	251.67	.04	273.96	.075

```
Bank Sta: Left   Right    Coeff Contr.   Expan.
        251.67  273.96            .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  218.37  367.75           222.9 368.709           228.8 369.891 368.891
   238.9 369.925 368.925     248 369.959 368.959   254.6 368.591
  256.61  368.13

Downstream Bridge Cross Section Data
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.2    5.49  380.43   19.15  378.55   22.99     378   24.44  377.87
    27.6  377.66   28.15  377.66   32.08  377.85   34.11  377.81   34.84  377.86
   36.16  377.76    36.5  377.71   36.95   377.6   37.24  377.63   37.53  377.55
   43.71  377.04   44.96  377.01   53.85  377.19   61.96  376.88   69.36  376.67
    78.2  376.53   80.32  376.46   85.59  376.16   86.54  376.08   87.13     376
   96.16     374  106.12     372  115.26     370  135.49  369.25  142.97   369.5
  155.72     370  160.13  369.38  160.65  369.34  161.19  369.38  161.22  369.44
  161.24  368.96  165.72  368.71  205.57  368.19  226.91  367.45  227.84  367.41
  239.06  361.76  241.96   361.6  245.76  361.52  251.97  367.85  256.98  368.15
  272.47  369.07  292.37  370.16  313.15  370.81  318.99   371.3  321.33   371.4
  339.22  371.96  340.43     372  349.15  373.24   355.3     374  368.27  375.86
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        227.84  251.97            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR
```

E.G. US. (ft)	366.59	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	366.24	E.G. Elev (ft)	366.53	366.39
Q Total (cfs)	209.00	W.S. Elev (ft)	366.15	366.19
Q Bridge (cfs)	209.00	Crit W.S. (ft)	365.16	364.18
Q Weir (cfs)		Max Chl Dpth (ft)	3.99	4.67
Weir Sta Lft (ft)		Vel Total (ft/s)	4.93	3.59
Weir Sta Rgt (ft)		Flow Area (sq ft)	42.39	58.16
Weir Submerg		Froude # Chl	0.44	0.29
Weir Max Depth (ft)		Specif Force (cu ft)	97.18	137.01
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.53	3.28
Min El Prs (ft)	368.93	W.P. Total (ft)	19.54	22.16
Delta EG (ft)	0.24	Conv. Total (cfs)	2638.3	4111.2
Delta WS (ft)	0.08	Top Width (ft)	16.73	17.76
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	4.93	C & E Loss (ft)	0.09	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.85	0.42
BR Sel Method	Energy only	Power Total (lb/ft s)	4.19	1.52

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	367.66	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	367.22	E.G. Elev (ft)	367.59	367.44
Q Total (cfs)	334.00	W.S. Elev (ft)	367.09	367.14
Q Bridge (cfs)	334.00	Crit W.S. (ft)	365.90	364.95
Q Weir (cfs)		Max Chl Dpth (ft)	4.93	5.62
Weir Sta Lft (ft)		Vel Total (ft/s)	5.65	4.41
Weir Sta Rgt (ft)		Flow Area (sq ft)	59.11	75.79
Weir Submerg		Froude # Chl	0.45	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	171.54	222.61
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.16	3.94
Min El Prs (ft)	368.93	W.P. Total (ft)	22.71	24.95
Delta EG (ft)	0.29	Conv. Total (cfs)	4154.9	5904.9
Delta WS (ft)	0.11	Top Width (ft)	18.74	19.22
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	5.65	C & E Loss (ft)	0.10	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	1.05	0.61
BR Sel Method	Energy only	Power Total (lb/ft s)	5.93	2.67

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	369.96	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	369.41	E.G. Elev (ft)	369.96	369.82
Q Total (cfs)	772.00	W.S. Elev (ft)	369.41	369.41
Q Bridge (cfs)	525.74	Crit W.S. (ft)	367.76	366.88
Q Weir (cfs)	246.26	Max Chl Dpth (ft)	7.25	7.89
Weir Sta Lft (ft)	141.53	Vel Total (ft/s)	4.21	3.66
Weir Sta Rgt (ft)	315.71	Flow Area (sq ft)	183.18	210.89
Weir Submerg	0.29	Froude # Chl	0.43	0.37
Weir Max Depth (ft)	2.10	Specif Force (cu ft)	479.55	560.19
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.35	3.09
Min El Prs (ft)	368.93	W.P. Total (ft)	102.95	118.68
Delta EG (ft)	0.53	Conv. Total (cfs)		
Delta WS (ft)	0.50	Top Width (ft)	101.34	68.15
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	5.50	C & E Loss (ft)		
BR Sluice Coef	0.37	Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Warning: The pure energy/weir calculations did not converge within the given number of iterations.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were
used for pressure flow.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	371.49	Element		
W.S. US. (ft)	370.83	E.G. Elev (ft)	371.48	371.45
Q Total (cfs)	1391.00	W.S. Elev (ft)	370.83	371.03
Q Bridge (cfs)	414.67	Crit W.S. (ft)	370.43	370.14
Q Weir (cfs)	880.27	Max Chl Dpth (ft)	8.67	9.51
Weir Sta Lft (ft)	133.31	Vel Total (ft/s)	3.32	3.06
Weir Sta Rgt (ft)	358.84	Flow Area (sq ft)	419.40	454.23
Weir Submerg	0.93	Froude # Chl	0.32	0.26
Weir Max Depth (ft)	3.61	Specif Force (cu ft)	846.23	1016.27
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.60	2.68
Min El Prs (ft)	368.93	W.P. Total (ft)	210.09	223.94
Delta EG (ft)	0.04	Conv. Total (cfs)		
Delta WS (ft)	-0.20	Top Width (ft)	213.90	169.80
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	4.34	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.11	Element		
W.S. US. (ft)	371.53	E.G. Elev (ft)	372.11	372.07
Q Total (cfs)	1736.00	W.S. Elev (ft)	371.53	371.63
Q Bridge (cfs)	424.92	Crit W.S. (ft)	370.75	370.45
Q Weir (cfs)	1311.08	Max Chl Dpth (ft)	9.37	10.11
Weir Sta Lft (ft)	130.09	Vel Total (ft/s)	3.24	3.02
Weir Sta Rgt (ft)	375.23	Flow Area (sq ft)	535.07	574.55
Weir Submerg	0.94	Froude # Chl	0.27	0.23
Weir Max Depth (ft)	4.24	Specif Force (cu ft)	1124.24	1308.69
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.06	3.10
Min El Prs (ft)	368.93	W.P. Total (ft)	223.55	240.95
Delta EG (ft)	0.04	Conv. Total (cfs)		
Delta WS (ft)	-0.10	Top Width (ft)	227.27	185.53
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	4.45	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

BRIDGE OUTPUT Profile #7-30-2016

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.53	Element		
W.S. US. (ft)	371.96	E.G. Elev (ft)	372.53	372.49
Q Total (cfs)	2002.00	W.S. Elev (ft)	371.96	372.04
Q Bridge (cfs)	432.38	Crit W.S. (ft)	370.92	370.68
Q Weir (cfs)	1569.62	Max Chl Dpth (ft)	9.80	10.52
Weir Sta Lft (ft)	127.23	Vel Total (ft/s)	3.24	3.03
Weir Sta Rgt (ft)	378.41	Flow Area (sq ft)	618.10	660.50
Weir Submerg	0.94	Froude # Chl	0.25	0.23
Weir Max Depth (ft)	4.67	Specif Force (cu ft)	1352.47	1548.07
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.25	3.31
Min El Prs (ft)	368.93	W.P. Total (ft)	238.64	255.62
Delta EG (ft)	0.04	Conv. Total (cfs)		
Delta WS (ft)	-0.07	Top Width (ft)	242.31	199.33
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	4.53	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5474

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87
27.6	377.66	28.15	377.66	32.08	377.85	34.11	377.81	34.84	377.86
36.16	377.76	36.5	377.71	36.95	377.6	37.24	377.63	37.53	377.55
43.71	377.04	44.96	377.01	53.85	377.19	61.96	376.88	69.36	376.67
78.2	376.53	80.32	376.46	85.59	376.16	86.54	376.08	87.13	376
96.16	374	106.12	372	115.26	370	135.49	369.25	142.97	369.5
155.72	370	160.13	369.38	160.65	369.34	161.19	369.38	161.22	369.44
161.24	368.96	165.72	368.71	205.57	368.19	226.91	367.45	227.84	367.41
239.06	361.76	241.96	361.6	245.76	361.52	251.97	367.85	256.98	368.15
272.47	369.07	292.37	370.16	313.15	370.81	318.99	371.3	321.33	371.4
339.22	371.96	340.43	372	349.15	373.24	355.3	374	368.27	375.86
369.44	376	372.93	376.21	375.85	376.35	378.58	376.44	379.95	376.57
383.94	376.7	387.23	377.09	388.78	377.16	390.64	377.28	394.93	378
401.34	379.4	405.24	380.21	406.53	380.45	414	382	419.84	383.75
427.66	386.31								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	227.84	.04	251.97	.075

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        227.84  251.97             54.4   54.86   54.94             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5419

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.86    3.78  380.71    4.98  380.68    6.09  380.65   17.15  380.11
   18.16     380   18.96  379.91   19.28  379.88   19.92  379.82   26.66  379.12
   33.04  378.58   34.43  378.44   39.87     378   40.43  377.97    45.3  377.68
   47.96  377.57   55.03  377.19   58.61  377.04   63.94  376.76   68.35  376.51
   75.42  376.11   77.27     376   79.39   375.6   88.74     374   95.93  372.25
  103.06  370.55  105.38     370  106.52  369.95   124.3  369.13  143.21  368.92
  147.73  368.65  154.71  368.29  193.74  367.43  212.87  367.11  212.89  367.11
   213.8   367.1  221.32  362.36  228.08  361.46  230.72  362.15  234.51  367.15
  243.11  367.53  243.13  367.53  255.89   368.1  273.39  369.09  289.93  371.07
  313.65  371.93  314.49  371.98   314.7     372  316.49  372.27  319.14  372.61
  322.78  373.12  328.35  373.78  330.34  374.01  330.63  374.04  333.66   374.3
   334.1  374.33  334.72  374.39  338.27  374.58  342.52   374.8  344.74  375.07
   346.7  375.32  347.32  375.37  350.65  375.82  350.83  375.84  351.12  375.87
  351.94     376  361.89     378  362.32  378.12   369.2     380   375.4     382
  381.54     384  387.14     386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   213.8     .04  234.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        213.8  234.51            93.04   95.36   97.65             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    25.8     385       F
   161.5   202.4     385       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5323

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.88   33.33  380.11   40.06     380   44.89   379.5      59     378
   67.02   377.3   71.41  376.93   82.12     376   85.17  375.72   86.89  375.57
  104.57     374  104.96  373.94  105.28  373.89  109.01  373.33  110.74  373.08
  113.95  372.58   116.4  372.26  118.47     372  119.44  371.89  121.49  371.67
  125.25  371.29  126.03  371.19  132.92     370   135.4  369.51  137.55  369.08
  143.39  368.87  152.17  368.34  189.23  365.45  207.94  365.88  213.15     366
  215.76  361.32  219.54  361.54  222.99  361.95  225.61  363.08  227.85  363.55
  233.11  366.26     238  366.82  242.41  367.33  259.77  368.53  278.63  371.43
  280.36     372  318.89     376  320.12  376.01  321.57  376.05  349.64  377.86
  349.73  377.86   349.8  377.87  351.93     378  359.87  379.62  362.53     380
   367.1  381.08  369.42  381.61  370.97     382  374.97  382.95  379.47     384
  383.38   384.6  383.92  384.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  213.15     .04  233.11    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        213.15  233.11           116.69  114.31   111.9             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
```

0	28.6	385	

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5209

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.03	.15	378.03	1.95	378	2.36	377.96	6.29	377.85
16.45	377.5	32.34	376.94	33.33	376.83	33.48	376.82	33.68	376.79
33.96	376.77	34.79	376.69	35.57	376.61	36.06	376.58	36.71	376.52
37.31	376.46	37.67	376.43	38.36	376.39	38.61	376.37	39.48	376.31
42.48	376.17	42.92	376.13	45.71	376	45.73	376	49.13	375.52
50	375.39	51.69	375.13	54.05	374.76	55.37	374.56	56.81	374.32
58.6	374	58.66	374	59.06	373.96	84.53	372.91	98.55	372.35
98.82	372.33	99.63	372.28	103.93	372.02	104.29	372	104.3	372
106.14	371.66	116.08	370.04	116.42	370	139.5	368.78	180.51	365.75
201.11	365.1	209.66	364.83	212.88	361.1	216.14	361.11	219.68	361.44
225.21	365.18	231.24	365.5	231.26	365.5	242.79	366.12	270.5	369.12
274.64	369.12	323.97	372.18	340.57	374.96	340.58	375.25	340.59	375.28
344.72	375.7	345.37	375.76	347.71	376	348.59	376.15		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.66	.04	225.21	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.66	225.21	111.42	101.59	91.47	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
298.8	301.6	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	22.5	380	270.4	298.8	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5107

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.01	.24	376	7.07	375.83	9.07	375.73	10.81	375.67
14.62	375.53	15.38	375.51	17.77	375.4	18.91	375.37	34.75	374.53
41.77	374.45	50.79	374.46	55.85	374.46	57.09	374.44	66.02	374.11
71.3	374	75.88	373.97	100.91	373.67	129.38	373.15	147.16	372.84
170.03	372.61	172.25	372.56	172.92	372.55	178.44	372.44	185.81	372.3
200.51	372.07	201.43	371.98	201.7	371.98	202.67	371.92	215.72	371.52
224.6	371.21	235.57	370.77	237.04	370.74	250.15	370.35	252.81	370.32
253.08	370.31	263.87	370.17	266.55	370.18	267.52	370.19	268.58	370.13
278.39	370.23	284.41	370.28	291.18	370.38	294.8	370.34	311.68	370.28
315.54	370.35	315.75	370.35	322.33	370.22	323.94	370.21	332.11	370.09
355.05	371.1	364.88	371.1	382.36	369.28	393.14	367.95	393.15	367.95
397.41	367.43	406.55	360.36	409.03	359.92	412.88	360.59	414.63	362.95
416.03	363.17	422.1	365.13	424.57	365.29	439.58	366.25	464.4	370.03
475.81	370.03	507.28	370.74	534.67	372.32	549.02	374.66	549.03	374.92
549.05	374.92	551.62	375.01	559.75	376	561.38	376.32		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	397.41	.04	422.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.41	422.1	67.29	67.07	66.86	.1 .3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
295.8	317.3	380	F
445.9	465.3	380	F
474.6	515.9	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
317.3	364.3	380	465.3	474.6	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5040

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78
60.84	374.76	65.24	374.68	66.8	374.67	69.29	374.63	82.36	374.74
84.96	374.72	94.2	374.58	98.84	374.02	99.09	374	100.29	373.97
104.65	373.88	105.56	373.85	106.59	373.78	109.92	373.71	111.01	373.7
130.98	373.7	135.97	373.62	165.62	372.83	166.72	372.81	174.13	372.86
190.11	373	193.32	373	195.48	372.98	206.16	372.44	206.59	372.42
208.47	372.4	218.24	372.4	219.79	372.28	225.13	372	226.38	371.95
226.58	371.93	245.52	371.43	256.75	371.11	261.14	370.99	264.15	370.9
269.51	370.76	283.05	370.32	296.66	370.06	300.29	370	307.5	369.97
310.36	369.98	336.01	370.03	366.23	369.58	397.63	368.96	412.55	368.2
412.96	367.93	415.6	366.107	424.49	359.97	427.96	359.23	429.97	359.61
432.2	361.31	434.59	361.8	443.41	365.9	443.42	365.91	448.7	368.36
463.33	369.65	490.22	370.98	518.26	372.76	527.06	373.76	535.03	374
548.23	375.55	551.99	376	559.22	376.93	568.7	378	584.52	379.08

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	415.6	.04	443.41	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
415.6	443.41	104.82	108.2	107.53	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	408.3	369.89	F
463.6	584.52	369.89	F

BRIDGE

RIVER: Plumtree
REACH: Plumtree RS: 5000

INPUT
Description: Longview Drive - Modified to 25' wide opening and assuming a 2' high bridge structure
Distance from Upstream XS = 38
Deck/Roadway Width = 27
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 17

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
122	374		231	372		346.8	370.217	
363.6	369.987		384.5	369.89		390	370.049	
400.6	370.192		404.7	370.096		415.6	370.14	368.14
417.9	370.146	368.146	424.64	370.31	368.31	433.4	370.53	368.53
440.6	370.8	368.8	456.1	371.384		479.9	372.4	
523.7	374		556.9	376				

Upstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78
60.84	374.76	65.24	374.68	66.8	374.67	69.29	374.63	82.36	374.74
84.96	374.72	94.2	374.58	98.84	374.02	99.09	374	100.29	373.97
104.65	373.88	105.56	373.85	106.59	373.78	109.92	373.71	111.01	373.7
130.98	373.7	135.97	373.62	165.62	372.83	166.72	372.81	174.13	372.86
190.11	373	193.32	373	195.48	372.98	206.16	372.44	206.59	372.42
208.47	372.4	218.24	372.4	219.79	372.28	225.13	372	226.38	371.95
226.58	371.93	245.52	371.43	256.75	371.11	261.14	370.99	264.15	370.9
269.51	370.76	283.05	370.32	296.66	370.06	300.29	370	307.5	369.97
310.36	369.98	336.01	370.03	366.23	369.58	397.63	368.96	412.55	368.2
412.96	367.93	415.6	366.107	424.49	359.97	427.96	359.23	429.97	359.61
432.2	361.31	434.59	361.8	443.41	365.9	443.42	365.91	448.7	368.36
463.33	369.65	490.22	370.98	518.26	372.76	527.06	373.76	535.03	374
548.23	375.55	551.99	376	559.22	376.93	568.7	378	584.52	379.08

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         415.6  443.41            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  369.89       F
   463.6  584.52  369.89       F

Downstream  Deck/Roadway Coordinates
    num=      17
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  375.75             124     374           270.8     372
   386.7 370.217           403.6 369.987           424.4  369.89
   429.9 370.049           440.5 370.192           442.9  370.13  368.13
   444.4 370.096 368.096   457.6 370.146 368.146   467.9   370.4   368.4
   473.1  370.53           495.7 371.384           519.5   372.4
   561.3     374           594.1     376

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  381.34    1.15  381.36    5.15  381.18    6.14   381.2    7.86  381.16
   10.94  381.18   23.92     381   30.33  380.86   45.55  380.35   51.93  380.07
   65.77   379.6   68.46  379.68   70.71  379.61   75.04  379.33   80.36  379.11
  107.04  378.79  117.65  378.45  125.92     378  132.09  376.99  138.71     376
  142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
  164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
  181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
  210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
   248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
  296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
  405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
  444.02  363.09  449.76  359.84  461.09  359.04  468.33 363.925  475.48  368.75
  476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
  568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
  588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
  633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        442.94  468.33            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442     366       F
   476.1  633.02     366       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line
```

BRIDGE OUTPUT Profile #1-YR

E.G. US. (ft)	363.88	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	363.57	E.G. Elev (ft)	363.35	362.76
Q Total (cfs)	209.00	W.S. Elev (ft)	362.44	362.48
Q Bridge (cfs)	209.00	Crit W.S. (ft)	362.44	361.42
Q Weir (cfs)		Max Chl Dpth (ft)	3.21	3.44
Weir Sta Lft (ft)		Vel Total (ft/s)	7.65	4.24
Weir Sta Rgt (ft)		Flow Area (sq ft)	27.31	49.35
Weir Submerg		Froude # Chl	1.00	0.49
Weir Max Depth (ft)		Specif Force (cu ft)	82.29	95.60
Min El Weir Flow (ft)	369.90	Hydr Depth (ft)	1.81	2.34
Min El Prs (ft)	368.80	W.P. Total (ft)	16.70	22.86
Delta EG (ft)	1.43	Conv. Total (cfs)	1408.1	3061.8
Delta WS (ft)	1.54	Top Width (ft)	15.05	21.09
BR Open Area (sq ft)	162.03	Frctn Loss (ft)	0.24	0.82
BR Open Vel (ft/s)	7.65	C & E Loss (ft)	0.32	0.13
BR Sluice Coef		Shear Total (lb/sq ft)	2.25	0.63
BR Sel Method	Energy only	Power Total (lb/ft s)	17.21	2.66

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	364.85	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	364.43	E.G. Elev (ft)	364.30	363.71
Q Total (cfs)	334.00	W.S. Elev (ft)	363.22	363.34
Q Bridge (cfs)	334.00	Crit W.S. (ft)	363.18	362.06
Q Weir (cfs)		Max Chl Dpth (ft)	3.99	4.30
Weir Sta Lft (ft)		Vel Total (ft/s)	8.32	4.86
Weir Sta Rgt (ft)		Flow Area (sq ft)	40.14	68.71
Weir Submerg		Froude # Chl	0.98	0.51
Weir Max Depth (ft)		Specif Force (cu ft)	145.10	169.19
Min El Weir Flow (ft)	369.90	Hydr Depth (ft)	2.25	2.88
Min El Prs (ft)	368.80	W.P. Total (ft)	19.92	26.15
Delta EG (ft)	1.43	Conv. Total (cfs)	2378.5	4859.8
Delta WS (ft)	1.51	Top Width (ft)	17.86	23.89
BR Open Area (sq ft)	162.03	Frctn Loss (ft)	0.23	0.25
BR Open Vel (ft/s)	8.32	C & E Loss (ft)	0.35	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	2.48	0.77
BR Sel Method	Energy only	Power Total (lb/ft s)	20.64	3.77

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	367.14	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	366.46	E.G. Elev (ft)	366.54	365.89

Q Total (cfs)	772.00	W.S. Elev (ft)	365.01	365.19
Q Bridge (cfs)	772.00	Crit W.S. (ft)	364.93	363.69
Q Weir (cfs)		Max Chl Dpth (ft)	5.78	6.15
Weir Sta Lft (ft)		Vel Total (ft/s)	9.92	6.73
Weir Sta Rgt (ft)		Flow Area (sq ft)	77.78	114.71
Weir Submerg		Froude # Chl	0.73	0.48
Weir Max Depth (ft)		Specif Force (cu ft)	401.00	449.48
Min El Weir Flow (ft)	369.90	Hydr Depth (ft)	3.32	4.59
Min El Prs (ft)	368.80	W.P. Total (ft)	26.79	30.51
Delta EG (ft)	1.56	Conv. Total (cfs)	5881.0	10654.1
Delta WS (ft)	1.73	Top Width (ft)	23.46	25.02
BR Open Area (sq ft)	162.03	Frctn Loss (ft)	0.24	0.26
BR Open Vel (ft/s)	9.92	C & E Loss (ft)	0.41	0.05
BR Sluice Coef		Shear Total (lb/sq ft)	3.12	1.23
BR Sel Method	Energy only	Power Total (lb/ft s)	31.00	8.29

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	370.62	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	370.08	E.G. Elev (ft)	370.62	370.60
Q Total (cfs)	1391.00	W.S. Elev (ft)	370.08	370.08
Q Bridge (cfs)	1299.46	Crit W.S. (ft)	366.52	365.18
Q Weir (cfs)	91.54	Max Chl Dpth (ft)	10.85	11.04
Weir Sta Lft (ft)	360.32	Vel Total (ft/s)	0.00	5.80
Weir Sta Rgt (ft)	475.56	Flow Area (sq ft)		240.00
Weir Submerg	0.00	Froude # Chl	0.46	0.39
Weir Max Depth (ft)	0.73	Specif Force (cu ft)	1209.65	1420.76
Min El Weir Flow (ft)	369.90	Hydr Depth (ft)		6.74
Min El Prs (ft)	368.80	W.P. Total (ft)	95.20	97.26
Delta EG (ft)	3.22	Conv. Total (cfs)		
Delta WS (ft)	3.87	Top Width (ft)	35.65	35.59
BR Open Area (sq ft)	162.03	Frctn Loss (ft)		
BR Open Vel (ft/s)	8.02	C & E Loss (ft)		
BR Sluice Coef	0.44	Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were
used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	371.15	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	370.48	E.G. Elev (ft)	371.15	371.15
Q Total (cfs)	1736.00	W.S. Elev (ft)	370.48	370.48
Q Bridge (cfs)	1436.54	Crit W.S. (ft)	367.25	365.92
Q Weir (cfs)	299.46	Max Chl Dpth (ft)	11.25	11.44
Weir Sta Lft (ft)	286.09	Vel Total (ft/s)	6.06	5.56
Weir Sta Rgt (ft)	449.94	Flow Area (sq ft)	286.34	312.01
Weir Submerg	0.00	Froude # Chl	0.53	0.45
Weir Max Depth (ft)	1.26	Specif Force (cu ft)	1447.63	1643.70
Min El Weir Flow (ft)	369.90	Hydr Depth (ft)	2.83	3.09
Min El Prs (ft)	368.80	W.P. Total (ft)	160.80	162.72
Delta EG (ft)	2.83	Conv. Total (cfs)		
Delta WS (ft)	3.52	Top Width (ft)	101.24	101.04

BR Open Area (sq ft)	162.03	Frctn Loss (ft)	
BR Open Vel (ft/s)	8.87	C & E Loss (ft)	
BR Sluice Coef	0.46	Shear Total (lb/sq ft)	
BR Sel Method	Press/Weir	Power Total (lb/ft s)	

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected from the downstream cross section. The selected bridge modeling method does not compute answers inside the bridge.

BRIDGE OUTPUT Profile #7-30-2016

			Element	Inside BR US	Inside BR DS
E.G. US. (ft)	371.49		E.G. Elev (ft)	371.49	371.49
W.S. US. (ft)	370.70		W.S. Elev (ft)	370.70	370.70
Q Total (cfs)	2002.00		Crit W.S. (ft)	367.78	366.44
Q Bridge (cfs)	1505.55		Max Chl Dpth (ft)	11.47	11.66
Q Weir (cfs)	496.45		Vel Total (ft/s)	5.78	5.48
Weir Sta Lft (ft)	329.56		Flow Area (sq ft)	346.18	365.56
Weir Sta Rgt (ft)	498.09		Froude # Chl	0.56	0.48
Weir Submerg	0.00		Specif Force (cu ft)	1614.80	1809.49
Weir Max Depth (ft)	1.60		Hydr Depth (ft)	2.82	2.98
Min El Weir Flow (ft)	369.90		W.P. Total (ft)	182.27	184.17
Min El Prs (ft)	368.80		Conv. Total (cfs)		
Delta EG (ft)	2.51		Top Width (ft)	122.70	122.49
Delta WS (ft)	3.19		Frctn Loss (ft)		
BR Open Area (sq ft)	162.03		C & E Loss (ft)		
BR Open Vel (ft/s)	9.29		Shear Total (lb/sq ft)		
BR Sluice Coef	0.47		Power Total (lb/ft s)		
BR Sel Method	Press/Weir				

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected from the downstream cross section. The selected bridge modeling method does not compute answers inside the bridge.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4932

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.34	1.15	381.36	5.15	381.18	6.14	381.2	7.86	381.16
10.94	381.18	23.92	381	30.33	380.86	45.55	380.35	51.93	380.07

65.77	379.6	68.46	379.68	70.71	379.61	75.04	379.33	80.36	379.11
107.04	378.79	117.65	378.45	125.92	378	132.09	376.99	138.71	376
142.75	375.74	145.13	375.77	151.41	375.65	152.99	375.6	162.62	375.4
164.08	375.33	165.89	375.33	172.24	375.73	177.38	376	177.63	376.05
181.27	376.17	185.16	376.34	192.75	376.58	200.87	376.58	208.17	376.57
210.94	376.5	239.9	376	245.1	375.7	245.52	375.7	248.29	375.54
248.6	375.54	250.31	375.45	256.27	375.5	262.18	375.3	281.18	374
296.71	372.3	299.71	372	320.36	371.86	345.94	370.82	375.13	370.26
405.43	368.96	424.73	368.62	429.83	363.66	442.94	363.7	444	363.1
444.02	363.09	449.76	359.84	461.09	359.04	468.33	363.925	475.48	368.75
476.07	368.78	476.1	368.79	501.36	370.51	527.01	371.18	549.43	374
568.87	375.7	572.79	376	583.63	376.6	584.84	376.64	587.35	376.78
588.79	376.83	590.9	376.94	610.8	377.12	614.03	377.22	619.02	377.46
633.02	378.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	442.94	.04	468.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
442.94	468.33	86.54	87.15	87.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	442	366	F
476.1	633.02	366	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4845

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.58	4.55	380.55	6.68	380.49	9.66	380.28	16.63	379.98
26.33	379.81	62.1	378.84	98.92	378	99.32	377.89	136.94	376
143	375.91	149.44	376	152.28	376.1	156.17	376.13	191.4	376.8
203.32	376.79	209.98	376.63	238.93	376.59	244.45	376.21	250.81	376
261.25	374.62	275.77	372	281.64	371.31	290.21	370.67	304.89	369.51
331.41	367.13	348.83	364.14	380.45	364.27	402.65	363.64	402.68	363.64
406.34	363.53	414.27	358.13	417.64	357.81	425.27	358.61	432.32	365.43
433.19	365.53	433.22	365.53	453.71	367.76	474.07	367.76	485.62	368
502.49	370	503.75	370.14	505.06	370.4	505.48	370.53	507.56	370.13
509	370	513.04	370	518.39	370.19	521.7	370.19	524.91	370.37
537.92	371.65	541.22	371.89	542.32	372.1	545.8	372.19	575.74	373.74
577.08	373.86	599.27	377.01	605.31	377.77	608.04	378.01	611.15	378.12
614.15	378.14	616.12	378.1	621.88	378.21	625.35	378.34	639.16	379.09
657.61	380	661.97	380.57	669.23	381.67	678.71	383.47		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	406.34	.04	433.22	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.34	433.22	89.54	100.49	110.66	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336.4	363.2	385	F
550.5	618	385	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
127.8	235.6	385	296.1	336.4	385	454	504.5	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4745

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.11	21.9	380.04	28.76	379.88	34.3	379.51	43.1	379.86
53.28	379.9	56.58	379.78	62.04	379.32	72.76	379.37	82.93	379.28
86.47	379.41	92.14	379.33	95.69	379.17	109.62	379.08	135.12	378.66
137.45	378.48	167.42	378.8	171.95	378.72	192.21	378	200.65	377.24

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  235.54  377.01  241.83  376.74  253.23   377.1  255.58  376.97  271.08  376.62
  275.97  376.65  279.99  377.08  282.06  377.08  293.56  376.33  300.79  376.13
  316.78  375.92  330.78  375.45  339.87  375.04  353.65     374  362.03  373.25
  376.22   371.8  398.14  369.91  398.19  368.67  441.73  364.73  471.43  362.82
  491.34  362.87  497.92  361.09  497.93  361.09  503.16  359.68  507.05  359.79
  508.57  357.67  513.05  357.45  516.27  357.67     524  363.35  528.02  363.37
  528.05  363.37  543.42  363.45  576.59  363.78  580.38     364  587.66   364.1
  599.83  364.36  607.95  364.42   639.8     366  660.86   367.5  675.48  368.86
  685.51     370  701.05  372.18  718.22  373.29  725.55  373.48  731.12  374.02
  748.44  374.98  752.53   375.3   765.7  375.87  778.37  376.85  791.24     378
  806.37     380  808.13  380.31  815.79  381.16  824.93     382  831.66  382.72

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  491.34     .04     524    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        491.34     524           111.08  108.67  106.25             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4636

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.34    6.89  380.72    8.14  380.72    21.8  379.64   39.34     378
   67.85     376  132.49  373.43  147.33     374  162.25     376   169.4  376.34
  178.16  375.89  185.65  375.64  200.34  375.76   233.4  375.68  239.11  375.36
   249.5  375.34  251.25  375.42   257.5  375.35  267.44  374.96  277.67  374.75
  315.27  374.57  318.08  374.63  344.76     374   355.8     372  365.77     370
  409.43     368  426.89  366.86  461.95  364.11   477.5  361.95  477.88   361.7
  477.89  361.69   483.5  357.91  493.33  357.61  499.07  357.85   502.3  362.25
  508.59  362.41  508.61  362.41   524.4  362.83  556.76  362.64  588.33  363.03
  609.48  362.74  620.82  363.21  643.23  363.52  650.91  363.84  673.28  365.16
  690.67  365.89   697.4  365.96  767.85  369.67   776.5     370  791.17  370.91
  827.59     374  829.12  374.06  835.04     374  840.77  373.45  865.39     370
  874.22     368  886.48  367.07   898.7     368  908.05     370  921.08     372
  930.79     374  936.24     376  940.95     378  945.37     380  961.95     388
  966.25     390  970.84     392  976.29     394   984.5     396

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   477.5     .04   502.3    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         477.5   502.3            90.09   85.72   81.01             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  829.12  930.96  374.06       T
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    12.5    47.6     385   159.7   233.5     385   289.2   333.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4550

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
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  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         487.5  517.99           205.67  206.54  206.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 4400

INPUT
Description: US 40 - modified to a 50 ft bridge opening and assuming a 3' depth
             of the roadway
Distance from Upstream XS =      53
Deck/Roadway Width        =     104
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      20
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     5.8     380              83     378             165     376
     237     374             324     372             391 371.588
     429 371.157           463.7 370.927           467.5  370.92  367.92
   490.9 370.876 367.876   517.5  371.19  368.19   527.4 371.004
   560.1 371.263           596.7  371.72             644     372
     732     374             786     376             860     378
     928     380             999     382

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         487.5  517.99             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

Downstream  Deck/Roadway Coordinates
    num=      13
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      13     378              97     376             158     374
   290.3 372.244             328  371.79           354.7 371.615
  356.06  371.61  368.61   387.1 371.555 368.555  406.13  371.59  368.59
   419.8  371.62           453.4 371.896           491.3 372.287
     600     374
```

Downstream Bridge Cross Section Data
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01
603.8	375.23	612.54	376	624.11	376.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	369.78	.04	399.49	.075

Bank Sta: Left Right Coeff Contr. Expan.
369.78 399.49 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	356	371.55	F
407	624.11	371.55	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd = .8
Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	360.83	Element		
W.S. US. (ft)	360.58	E.G. Elev (ft)	360.24	359.48
Q Total (cfs)	209.00	W.S. Elev (ft)	359.44	359.45
Q Bridge (cfs)	209.00	Crit W.S. (ft)	359.44	354.77
Q Weir (cfs)		Max Chl Dpth (ft)	2.20	7.76
Weir Sta Lft (ft)		Vel Total (ft/s)	7.17	1.51
Weir Sta Rgt (ft)		Flow Area (sq ft)	29.14	138.00
Weir Submerg		Froude # Chl	1.00	0.12
Weir Max Depth (ft)		Specif Force (cu ft)	74.07	413.62
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	1.60	4.98
Min El Prs (ft)	368.19	W.P. Total (ft)	19.18	33.17
Delta EG (ft)	1.36	Conv. Total (cfs)	1430.4	13259.7
Delta WS (ft)	1.15	Top Width (ft)	18.25	27.69
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.08	3.78
BR Open Vel (ft/s)	7.17	C & E Loss (ft)	0.38	0.36
BR Sluice Coef		Shear Total (lb/sq ft)	2.02	0.06
BR Sel Method	Energy only	Power Total (lb/ft s)	14.52	0.10

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	361.71	Element		
W.S. US. (ft)	361.38	E.G. Elev (ft)	361.08	360.33
Q Total (cfs)	334.00	W.S. Elev (ft)	360.09	360.26
Q Bridge (cfs)	334.00	Crit W.S. (ft)	360.09	355.38
Q Weir (cfs)		Max Chl Dpth (ft)	2.85	8.57
Weir Sta Lft (ft)		Vel Total (ft/s)	7.99	2.07
Weir Sta Rgt (ft)		Flow Area (sq ft)	41.81	161.09
Weir Submerg		Froude # Chl	1.00	0.15
Weir Max Depth (ft)		Specif Force (cu ft)	133.24	547.14
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	1.99	5.56
Min El Prs (ft)	368.19	W.P. Total (ft)	22.19	35.25
Delta EG (ft)	1.40	Conv. Total (cfs)	2369.4	16481.0
Delta WS (ft)	1.14	Top Width (ft)	20.97	28.95
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.13	3.56
BR Open Vel (ft/s)	7.99	C & E Loss (ft)	0.46	0.44
BR Sluice Coef		Shear Total (lb/sq ft)	2.34	0.12
BR Sel Method	Energy only	Power Total (lb/ft s)	18.67	0.24

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	363.78	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	363.24	E.G. Elev (ft)	363.11	362.07
Q Total (cfs)	772.00	W.S. Elev (ft)	361.66	361.86
Q Bridge (cfs)	772.00	Crit W.S. (ft)	361.66	357.00
Q Weir (cfs)		Max Chl Dpth (ft)	4.42	10.17
Weir Sta Lft (ft)		Vel Total (ft/s)	9.65	3.51
Weir Sta Rgt (ft)		Flow Area (sq ft)	79.97	219.82
Weir Submerg		Froude # Chl	1.00	0.20
Weir Max Depth (ft)		Specif Force (cu ft)	376.34	914.57
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	2.90	4.61
Min El Prs (ft)	368.19	W.P. Total (ft)	29.51	55.57
Delta EG (ft)	1.76	Conv. Total (cfs)	5774.6	24868.0
Delta WS (ft)	1.43	Top Width (ft)	27.57	47.69
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.26	3.05
BR Open Vel (ft/s)	9.65	C & E Loss (ft)	0.62	0.62
BR Sluice Coef		Shear Total (lb/sq ft)	3.02	0.24
BR Sel Method	Energy only	Power Total (lb/ft s)	29.19	0.84

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	365.84	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	365.13	E.G. Elev (ft)	365.10	363.59
Q Total (cfs)	1391.00	W.S. Elev (ft)	363.09	363.14
Q Bridge (cfs)	1391.00	Crit W.S. (ft)	363.09	358.66
Q Weir (cfs)		Max Chl Dpth (ft)	5.85	11.45
Weir Sta Lft (ft)		Vel Total (ft/s)	11.36	4.91
Weir Sta Rgt (ft)		Flow Area (sq ft)	122.45	283.44
Weir Submerg		Froude # Chl	0.83	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	780.88	1378.33
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	3.92	5.65
Min El Prs (ft)	368.19	W.P. Total (ft)	34.78	60.42
Delta EG (ft)	2.34	Conv. Total (cfs)	10757.8	33583.4
Delta WS (ft)	2.09	Top Width (ft)	31.24	50.13
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.41	2.72
BR Open Vel (ft/s)	11.36	C & E Loss (ft)	0.78	0.70
BR Sluice Coef		Shear Total (lb/sq ft)	3.67	0.50
BR Sel Method	Energy only	Power Total (lb/ft s)	41.74	2.47

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than

1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	366.85	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	366.09	E.G. Elev (ft)	366.06	364.33
Q Total (cfs)	1736.00	W.S. Elev (ft)	363.75	363.74
Q Bridge (cfs)	1736.00	Crit W.S. (ft)	363.75	359.42
Q Weir (cfs)		Max Chl Dpth (ft)	6.51	12.05
Weir Sta Lft (ft)		Vel Total (ft/s)	12.06	5.54
Weir Sta Rgt (ft)		Flow Area (sq ft)	143.96	313.53
Weir Submerg		Froude # Chl	0.84	0.31
Weir Max Depth (ft)		Specif Force (cu ft)	1034.63	1655.84
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	4.23	6.26
Min El Prs (ft)	368.19	W.P. Total (ft)	38.40	61.64
Delta EG (ft)	2.62	Conv. Total (cfs)	13703.6	38155.6
Delta WS (ft)	2.46	Top Width (ft)	34.07	50.12
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.47	2.59
BR Open Vel (ft/s)	12.06	C & E Loss (ft)	0.86	0.73
BR Sluice Coef		Shear Total (lb/sq ft)	3.76	0.66
BR Sel Method	Energy only	Power Total (lb/ft s)	45.29	3.64

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	367.55	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	366.80	E.G. Elev (ft)	366.74	365.02

Q Total (cfs)	2002.00	W.S. Elev (ft)	364.28	364.35
Q Bridge (cfs)	2002.00	Crit W.S. (ft)	364.28	359.97
Q Weir (cfs)		Max Chl Dpth (ft)	7.04	12.66
Weir Sta Lft (ft)		Vel Total (ft/s)	12.27	5.82
Weir Sta Rgt (ft)		Flow Area (sq ft)	163.16	344.26
Weir Submerg		Froude # Chl	0.84	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	1240.48	1930.80
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	4.21	6.87
Min El Prs (ft)	368.19	W.P. Total (ft)	43.63	62.86
Delta EG (ft)	2.64	Conv. Total (cfs)	16222.9	43091.9
Delta WS (ft)	2.55	Top Width (ft)	38.73	50.12
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.47	2.47
BR Open Vel (ft/s)	12.27	C & E Loss (ft)	0.90	0.78
BR Sluice Coef		Shear Total (lb/sq ft)	3.56	0.74
BR Sel Method	Energy only	Power Total (lb/ft s)	43.63	4.29

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4344

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01
603.8	375.23	612.54	376	624.11	376.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	369.78	.04	399.49	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

```
       369.78  399.49            54.24    54.2   54.21             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     356  371.55       F
     407  624.11  371.55       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4289

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  377.16    4.18  376.93    6.02  376.92   13.94  376.67   20.26   376.2
    24.9  376.18   33.24  377.06   38.69  377.12   40.04  377.22   48.07  377.42
   60.83   377.6    66.6  377.54    72.7  377.21   85.85     376   95.14  375.32
  109.02  374.79  111.75  374.73  114.36   374.6   120.7  374.51  138.66     374
  141.06  373.73  149.42  372.56  154.25     372   161.5  371.27  163.79  371.11
  170.81     370  173.81  369.84  195.17  369.42   204.6  369.46  213.04  369.62
   222.3     370  223.43  370.15   226.4  370.41  227.06  370.31  236.85  369.39
  247.27  369.56  249.28   369.5  253.56   369.2  259.27  368.95  271.49     368
  281.02     366  283.53  365.58  284.63  365.72  287.61  365.54  294.16     364
  296.04  363.42  300.15  363.15  323.16   361.6  346.64  361.49  362.78  361.62
  366.58  358.56  372.42  353.86  381.79  352.78  389.78  353.42  392.45  357.73
  395.52  357.99  397.76  358.89  397.77   358.9  401.82  360.54  427.65   361.5
  461.12  362.68  474.19     364  499.06  364.89  510.36  365.54  512.25  365.53
  519.79     366  531.35  367.23  537.87     368  549.98     370  574.53  371.66
  580.97  371.69  592.69  371.17  604.52  371.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  362.78     .04  401.82    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        362.78  401.82           104.83  104.42  103.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4185

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  370.48     9.2  369.89   11.88  369.82   17.34  369.84   34.57   369.3
   53.84  368.42   59.13  368.23   62.34  368.17   68.09  368.17   70.92  368.38
    76.7  368.52   81.21  368.71   88.53  369.21  100.23  369.08  113.03  368.39
  118.84  368.28  119.85  368.31  124.69  368.28  130.99  368.32  143.69  368.07
  174.23  367.24  184.05  366.87  189.65  366.83  193.83  366.87  199.74  366.51
  200.31  366.52  202.71  366.37  206.47     366  222.83  365.23  229.16   365.1
  237.63  364.59  245.34     364  270.04  362.83  279.56  362.32  284.22     362
  317.36  360.81  352.39  360.17  380.43  360.08  403.96  360.43  405.79  359.32
  407.94  358.02  410.35  357.61     417  355.97   420.8  354.77  430.79  360.87
   435.8  361.06  435.83  361.06  448.07  361.52  480.45   361.7  518.27  363.36
  531.33     364  532.88  364.19  543.89  364.64  551.51  365.01  553.39  365.05
  557.04   365.2  562.67  365.52  565.16  365.53  571.76  365.76  589.17  365.65
   601.4  365.75  611.19   365.7  613.71  365.74  619.92     366  625.24  366.72
   632.9  367.41  636.14  367.76  639.39     368  644.27  368.63  644.65  368.64
  646.39   368.9  647.36  368.89   650.3  369.29

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  403.96     .04  430.79    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        403.96  430.79           151.73  151.97  152.24             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4033

INPUT
```

Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	371.31	6.28	371.09	10.1	370.82	11.41	370.78	13.41	370.65
16.07	370.59	24.34	370.14	26.91	370.09	30.53	370.19	38.94	370.2
41.71	370.32	43.77	370.21	45.82	370	47.56	369.91	61.47	368.93
64.73	368.91	74.46	369.43	84.71	369.4	87.19	369.59	93.43	369.89
94.09	369.89	96.1	370	98.42	370.2	102.15	370.38	104.17	370.4
106.65	370.37	110.1	370.2	112.15	370	115.71	369.82	128.08	369.81
137.68	369.7	151.03	369.46	154.18	369.16	164.93	368.77	175.08	368.49
185.11	368.1	190.59	367.77	192.4	367.74	209.8	366.53	222.55	365.72
229.81	365.17	231.09	365.15	237.47	365.25	254.65	364.85	274.84	362
281.46	361.45	311.04	360.26	324.61	359.69	324.63	359.69	327.57	359.56
332.63	355.53	339.8	355.05	344.88	355.72	350.28	359.03	354.96	359.02
354.99	359.02	368.82	358.97	388.87	359.13	402.39	358.88	463.03	360
463.46	360.12	468.3	360.75	482.77	362	495.13	362.44	501.53	362.51
509.75	362.5	519.32	362.16	523.42	362.13	524.98	362	532.66	361.82
536.09	361.79	548.11	361.82	551.96	362	557.9	362.44	583.12	363.9
596.37	364.95								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	327.57	.04	350.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
327.57	350.28	105.3	103.27	101.24	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3930

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	373.25	5.62	373.04	18.75	372.65	20.05	372.56	51.89	373.28
67.22	372.62	75.52	372.21	81.21	372	82.89	371.8	83.35	371.81
100.65	370.82	104.09	370.51	109.16	370	119.9	369.24	121.3	369.19
125.83	369.28	143.55	369.25	145.3	369.37	145.92	369.31	149.12	369.58
149.56	369.54	151.28	369.67	155.23	369.78	159.52	369.77	162.64	369.66
165.16	369.5	170.48	369	173.88	368.53	174.87	368.43	177.64	368
179.57	367.59	182.98	366.78	185.85	366	189.84	365.01	193.24	364
205.26	362.99	232.35	361.15	264.16	359.45	274.41	358.31	274.42	358.31
280.37	357.65	286.95	354.74	289.44	354.49	294.11	355.34	299.09	358.68
305.18	358.74	305.19	358.74	321.51	358.88	353.18	358.92	436.87	360
449.41	362	451.92	362.47	457.66	363.46	461.04	364	466.97	364.48
469.66	364.48	474.3	364.61	476.21	364.58	476.86	364.61	477.78	364.59
488.71	364.64	490.27	364.68	512.72	365.88	514.21	366	532.64	368
542.86	370	544.26	370.23	546.1	370.43	549.88	370.48	552.59	370.59

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	280.37	.04	299.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
280.37	299.09	112.01	113.72	114.59	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
176	200.4	375	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
163.1	176	375

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3816

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	374.86	10.9	374	35.12	372	42.05	371.48	47.58	371.12
58.88	370.34	59.53	370.34	78.46	370.9	81.56	371.04	85.42	370.91
91.5	370.8	96.65	370.74	108.4	370.09	110.41	370	112.14	369.8
112.78	369.76	116.9	369.37	121.06	369	125.02	368.8	128.66	368.54

132.43	368.4	135.47	368.11	138.27	368.07	140.86	368.14	143.7	368.03
150.81	367.6	154.5	367.24	157.37	366.85	163.04	366	174.59	362.82
217.65	358.92	236.4	357.65	236.42	357.65	237.46	357.58	243.76	354.29
251.5	353.5	252.56	353.49	255.1	356.69	266.5	357.28	266.52	357.28
271.38	357.54	301.23	358.52	327.76	358.95	350.57	360	371.84	361.19
386.87	362	399.91	363.11	404.12	363.54	410.91	364.18	416.03	364.61
421.73	365	428.74	365.37	429.75	365.39	438.84	365.39	440.51	365.38
443.31	365.3	444.17	365.29	449.76	365.05	455.01	364.86	460.03	365.2
465.28	365.49	469.1	365.73	472.03	365.86	472.64	365.86	474.82	366.04
496.26	366.8	498.97	366.85	515.31	366.69	518.73	366.8	522.16	366.85
525.33	367.02	526.96	367.04	534.8	367.32	549.03	368	554.32	368.52

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	237.46	.04	255.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
237.46	255.1	128.5	127.87	127.21	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
173.5	186.9	375	F
373.3	445.4	375	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
142.2	173.5	375

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3688

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	367.19	12.07	367.61	20.74	367.88	33.44	368.3	35.81	368.34
36.91	368.35	38.51	368.3	41.9	368.05	42.34	368	46.49	367.62
57.82	366.07	58.06	366	58.98	365.89	59.73	365.86	61.35	365.74
62.76	365.59	63.36	365.54	64.65	365.39	65.31	365.33	65.53	365.3
68.14	364.99	69.06	364.94	77.78	365.17	78.29	365.12	78.87	365.13
79.51	365.14	81.34	364.92	81.98	364.92	82.64	364.91	84.22	364.72
85.27	364.68	87.32	364.44	87.96	364.4	91.82	364	92.71	363.94
94.56	363.8	107.05	361.62	112.03	361.62	156.44	357.41	156.46	357.41
166.74	356.43	170.56	353.16	171.46	352.86	179.43	353.24	182.46	356.86
186.46	357	186.47	357.01	203.22	357.63	227.7	358.5	256.67	360
261.88	360.34	264.57	360.54	271.14	360.98	283.16	361.89	284.48	362
293.32	363.31	295.65	363.6	300.63	364.22	302.93	364.48	304.51	364.65
310.25	365.25	317.77	366.05	320.57	366.39	321.8	366.52	324.49	366.86
328.15	367.23	329.94	367.46	331.84	367.65	332.96	367.78	334.64	368
343.14	368.38	353.94	368.67						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	166.74	.04	182.46	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
166.74	182.46	137.67	137.99	138.3	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
72.5	108.3	370	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
309.8	338.6	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3550

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	367.59	21.83	366	22.15	365.93	22.36	365.91	22.65	365.88
24.81	365.75	34.15	365.49	36.08	365.41	36.47	365.41	56.33	364.39
62.74	364.35	64.54	364.35	78.24	364.86	78.82	364.87	80.11	364.9
92.13	365.45	95.39	365.49	97.19	365.52	98.79	365.54	111.29	364.66

113.06	364.51	113.63	364.52	115.75	364.34	116.17	364.34	118.14	364.18
118.26	364.18	120.55	364	125.47	363.66	128.06	363.49	130.87	363.32
133.62	363.17	137.86	362.93	141.25	362.78	142.84	362.67	144.42	362.54
144.88	362.52	147.11	362.3	147.6	362.27	150.07	362	168.07	360.18
202.08	358.28	222.67	356.22	222.69	356.22	229.29	355.55	231.57	353.11
237.67	352.85	241.52	353.14	245.66	357.02	252.8	357.45	270.01	358.5
299.86	361.08	320.94	363.87	322.12	363.98	326.43	364.47	335.31	366
338.09	366.52	340.43	367.05	344.77	368	352.58	368.68	357.63	369.11
363.94	369.54	366.26	369.71	370.89	370	376.06	370.55	378.66	370.84
385.91	371.5	387.76	371.7	391.56	372	393.08	372.13	393.26	372.12
394.51	372.2	396.42	372.27	400.73	372.39	401.46	372.38		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	222.67	.04	245.66	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
222.67	245.66	121.58	121.96	122.09	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
132	172.9	370	F
358.4	401.46	375	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3428

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.25	.08	366.25	.21	366.24	2.49	366.31	5.55	366.33
6.5	366.31	6.69	366.3	6.85	366.29	6.95	366.28	7.02	366.27
7.07	366.26	7.09	366.26	7.37	366.14	7.5	366.11	7.73	366.11
7.81	366	17.71	365.88	17.76	365.88	35.41	362.54	54.26	359.25
71.12	356.77	71.14	356.77	72.75	356.53	82.67	355.38	85.4	352.15
86.22	352.06	88.74	351.86	91.45	352.09	93.89	352.39	98.94	357.17
101.38	357.43	121.79	359.59	156.9	362.39	164.18	363.89	164.43	364.14
168.22	363.93	172.23	363.84	172.9	363.86	176	363.96	177.1	364
178.13	364.1	190.23	365.12	198.83	365.85	199.59	365.91	200.67	366
208.9	367.19	214.54	368	221.01	368.41	227.99	368.94	228.59	368.95
229.18	368.96	244.28	369.43						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	82.67	.04	98.94	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
82.67	98.94	131.85	132.32	132.95	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
31.2	57.1	370	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
7.4	31.2	370	207.8	224.4	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3296

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.04	7.44	368.25	8.57	368.2	13.73	368	15.86	367.86
16.24	367.82	20.57	367.48	24.23	367.01	30.3	366.41	32.66	366
34.91	365.82	36.33	365.68	37.74	365.56	39.57	365.37	40.92	365.29
43.15	365.29	43.9	365.26	57.19	365.22	65.98	364.57	67.12	364.52
74.19	364	78.97	363.56	80.16	363.45	86.96	362.83	90.65	362.47
94.56	362.11	95.89	362	97.9	362.2	98.84	362.19	107.93	362.58
109.64	362.69	113.85	362.82	117.37	362.83	135.78	361.77	153.23	361.58
168.24	361.26	168.8	361.63	178.91	362.18	192.98	358.61	195.06	357.92
201.72	355.69	204.53	352.08	205.68	351.83	208.07	351.91	210.45	351.72
213.06	352.1	214.14	351.94	214.68	352.11	218.9	356.65	223.16	358.34
225.56	358.53	225.57	358.53	241.1	359.76	252.96	359.64	253.63	359.34

274.2	360.14	298.22	360.84	338.52	362	345.28	362.49	349.83	362.8
358.24	363.42	360.55	363.61	366.27	364	376.16	364.76	381.02	365.1
384.43	365.36	386.5	365.49	387.73	365.58	388.62	365.62	390.74	365.78
391.33	365.8	393.98	366	397.53	366.12	401.29	366.23		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	195.06	.04	223.16	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
195.06	223.16	117.57	116.94	115.99	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3179

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.99	2.92	366.32	4.49	366	7.03	365.74	10.65	365.61
11.25	365.55	16.84	365.58	20.65	365.55	33.69	365.26	37.05	365.27
37.83	365.19	39.74	365.22	40.57	365.13	41.71	365.14	42.29	365.07
42.83	365.07	44.3	364.91	44.81	364.89	52.54	364.19	59.05	363.73
59.96	363.72	64.43	364	81.81	364.24	90.25	364.43	92.01	364.4
99.97	364	104.37	363.32	108.33	362.78	110.63	362.49	114.3	362.12
115.81	362	120.17	361.84	122.87	361.79	123.54	361.75	128	361.77
128.34	361.74	133.43	361.84	133.74	361.82	143.14	361.87	149.1	361.65
164.07	359.25	179.76	356.13	194.67	355.75	202.4	355.27	206.08	354.62
206.1	354.62	214.08	353.21	222.22	351.72	224.4	350.87	225.57	350.64
226.07	350.5	226.87	350.39	227.28	351.49	228.52	356.98	237.22	357.51
237.24	357.52	245.5	358.02	261.13	358.56	278.43	358.68	287.56	359.19
290.34	359.37	293.7	359.56	297.36	359.67	300.98	359.87	307.03	360
313.84	360.92	321.07	362	329.79	363.01	342	364.37	355.84	366
363.77	366.33	385.35	367.64	391.11	368.04	397.46	368.33		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	179.76	.04	228.52	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
179.76	228.52	101.1	102.24	103.14	.1 .3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	63.2	370	F
80.2	98	370	F
277.5	332.8	370	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
98	149	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3077

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.18	1.12	364.15	2.53	364.12	3.97	364.1	8.56	364.2
8.98	364.2	10.31	364.25	11.19	364.24	13.14	364.15	13.5	364.12
14.57	364	18.43	363.88	21.38	363.78	24.61	363.74	33.92	363.48
39.77	363.33	48.31	362.93	50.98	362.82	61.21	362.37	63.02	362.31
70.2	362	74.59	361.6	77.1	361.43	82.58	360.97	83.28	360.94
95.42	360.41	99.21	360.31	103.01	360.23	103.64	360.21	104.52	360.13
105.54	360	107.69	359.58	114.03	358	134.95	356.4	140.36	356
163.01	355.01	179.63	355.11	193.39	354.95	204.81	355.12	210.64	354.59
210.65	354.59	217	354.02	219.69	351.67	221.67	350.95	222.49	350.87
223.8	350.87	226.26	350.75	228.21	350.72	229.11	350.89	230.73	354.07
234.33	355.41	241.4	355.41	250.01	355.42	265.82	356.22	283.13	356.64
290.94	357.97	293.37	357.99	293.48	358	295.67	358.42	300.65	359.3
303.5	359.83	304.53	360	320.68	361.37	322.55	361.51	328.44	362
330.19	362.24	341.42	364	344.14	364.6	349.88	366	354.73	367.09

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	204.81	.04	234.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204.81	234.33	99.64	98.98	98.39	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2978

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	362.91	26.14	362.3	28.29	362.14	29.8	362.2	30.23	362.16
30.97	362	35.23	361.59	35.47	361.59	37.04	361.43	37.26	361.43
38.5	361.3	38.73	361.31	45.76	360.54	80.82	360.96	102.15	360.38
114.55	360.01	118.88	359.77	161.71	358.87	229.91	358	230.71	357.16
236.45	357.02	243.79	356.29	243.81	356.29	245.02	356.16	250.07	353.33
252.35	352.96	254.47	350.89	255.74	350.56	257.29	350.63	259.41	350.68
261.6	350.53	263.18	350.69	263.71	350.84	265.48	354.05	274.04	355.2
274.05	355.2	275.87	355.44	297.22	357.18	316.25	361.84	320.6	362.22
347.97	363.14	347.98	363.82	352.13	364	360.46	364.7	368.43	365.33
374.4	365.77	378.19	366	379.71	366.15	380.66	366.19	383.79	366.08
384.49	366.11	386.36	366	389.31	365.95	390.69	366	391.27	366.26
391.59	366.47	398.39	367.21	402.86	368	410.75	370	415.21	370.52
417.39	370.39	425.64	370.89	432.78	372	437.01	373.28	442.02	374.48
446.02	375.38	448.25	375.83	449.28	376	451.72	376.13	455.64	376.24
456.7	376.24	472.15	376.84	479.93	377.06	491.12	376.37		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	245.02	.04	274.04	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.02	274.04	61.85	60.74	60.21	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	141.71	359.42	F
333.74	436.4	359.42	F
436.4	487.3	370	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
23.3	86.1	370	160.1	223.6	370	343	389	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2917

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84
653.46	371.06	662.64	371.32	668.42	372	676.66	372.58	679.51	372.87

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	440.02	.04	471.92	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
440.02	471.92	89.63	90.26	89.98	.3	.5

```
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 2900

INPUT
Description: Frederick Road
Distance from Upstream XS =      32
Deck/Roadway Width        =      33
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      17
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   368.5              23     368              86     366
     146     364             200     362             259     360
   337.5 359.415           380.1 359.626           407.4 359.923
   427.3 360.169          440.02  360.26     358   456.8 360.827     358
  471.93  360.99     358   563.7 363.651             590     364
     641     366          679.51     367

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.13    2.63  368.04    6.35  367.71    9.99  367.48    11.7  367.47
   35.48  366.41    37.6   366.2   47.35     366    53.1  365.63   55.49  365.67
   59.74  365.47   61.17  365.78   62.32   365.9   63.72  365.91   67.25  365.78
      68  365.82    71.7  365.74   87.56  365.03  104.39     364  110.05  363.87
  115.72     364  121.31  364.39  126.33  364.38  131.94  364.63  136.94  363.92
  168.89     362   189.9  361.76   192.5     362  193.52  362.01  197.76   361.7
  204.56  361.38  249.88  360.38  263.45  359.81  270.42  359.65  306.63   359.2
  346.56  358.69  357.45  358.68  370.03  358.66  382.52  358.63  395.46  358.28
  408.81  358.21  431.48  357.13  440.02  355.31  440.05  355.31  441.62  354.97
   449.4  353.04  452.07  350.76  453.48  350.54  456.39  350.36  460.31  350.51
  460.82  350.59  463.55  354.74  471.92  355.74  471.94  355.74  475.59  356.18
  490.04  357.59  503.18  359.84  518.18  361.77  535.05  361.94   560.7  363.42
  591.03  363.84  596.29     364  615.98  366.75  623.66  366.17  626.79  366.33
  628.12  366.32  630.23  366.52  637.46     368  644.61     370  649.83  370.84
  653.46  371.06  662.64  371.32  668.42     372  676.66  372.58  679.51  372.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  440.02     .04  471.92    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        440.02  471.92            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

Downstream  Deck/Roadway Coordinates
    num=      13
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0     368              60     366             120     364
     174     362             234     360           312.1 359.415
   354.5 359.626           382.1 359.923           401.6 360.169     358
   431.7 360.827     358   538.1 363.651             556     364
     615     366

Downstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   369.6    2.79  369.53    7.15  369.53   11.31  369.26   13.16  369.19
   29.03  369.08   30.88     369    36.7  368.66   39.93  368.57   49.72  368.38
   60.81     368    70.9  367.78   72.58  367.64    82.8  367.42   83.97  367.32
   85.38  367.24   87.77  367.18  103.95  366.38  107.73  366.28   112.2     366
   120.8  365.91  127.85  365.89  128.36  365.86  135.62  365.86  136.08  365.83
  142.61  365.76  143.72  365.66  148.33  365.55  150.36  365.39  156.37  365.12
  167.42  364.81  172.69  364.56  182.09  364.16  185.28     364  191.33   363.8
  196.54  363.59  198.83  363.62   204.7  363.42  205.45  363.36   212.4  363.01
  219.55  362.54  226.48     362  235.55  361.62  255.36     360  265.66  359.25
  278.67  358.18  280.71     358  313.84  356.42  337.03  355.63  363.87     355
  377.78   354.9  391.73  354.54   400.8  353.95  402.55  353.74  411.94  352.62
```

```
  421.34  350.08  422.54     352  426.28  353.73  432.62   354.3  432.64  354.31
  432.77  354.32  441.96   355.6  462.76  357.08  477.11  359.05  499.49  362.25
  513.76  363.04  527.63     362  539.48  362.57  551.98  362.82  561.27  363.13
  572.05  363.79   574.3     364  591.29  364.92   612.3  365.73  623.32  366.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   400.8     .04  432.64    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         400.8  432.64            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  395.05   356.5       F
   445.1  623.32   356.5       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)               354.89    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               354.70    E.G. Elev (ft)              354.78        354.65
  Q Total (cfs)               194.00    W.S. Elev (ft)              354.57        354.45
  Q Bridge (cfs)              194.00    Crit W.S. (ft)              352.82        353.52
  Q Weir (cfs)                          Max Chl Dpth (ft)             4.21          4.37
  Weir Sta Lft (ft)                     Vel Total (ft/s)              3.67          3.57
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            52.88         54.32
  Weir Submerg                          Froude # Chl                  0.40          0.30
  Weir Max Depth (ft)                   Specif Force (cu ft)        114.82         90.39
  Min El Weir Flow (ft)       359.43    Hydr Depth (ft)               2.62          1.79
  Min El Prs (ft)             358.00    W.P. Total (ft)              23.42         33.12
  Delta EG (ft)                 0.40    Conv. Total (cfs)           3380.1        2805.8
  Delta WS (ft)                 0.47    Top Width (ft)               20.22         30.43
  BR Open Area (sq ft)        155.62    Frctn Loss (ft)               0.13          0.15
  BR Open Vel (ft/s)            3.67    C & E Loss (ft)               0.01          0.02
  BR Sluice Coef                        Shear Total (lb/sq ft)        0.46          0.49
  BR Sel Method          Energy only    Power Total (lb/ft s)         1.70          1.75


Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the
downstream
         energy.  This is not physically possible, the momentum answer has been disregarded.
Note:    Momentum answer is not valid if the water surface is above the low chord or if there is weir
flow.  The momentum
         answer has been disregarded.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.

BRIDGE OUTPUT  Profile #2-YR

  E.G. US. (ft)               355.62    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               355.35    E.G. Elev (ft)              355.46        355.27
```

Q Total (cfs)	295.00	W.S. Elev (ft)	355.14	355.01
Q Bridge (cfs)	295.00	Crit W.S. (ft)	353.56	354.05
Q Weir (cfs)		Max Chl Dpth (ft)	4.78	4.93
Weir Sta Lft (ft)		Vel Total (ft/s)	4.48	4.13
Weir Sta Rgt (ft)		Flow Area (sq ft)	65.86	71.38
Weir Submerg		Froude # Chl	0.50	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	167.60	142.02
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)	2.52	2.35
Min El Prs (ft)	358.00	W.P. Total (ft)	29.51	34.25
Delta EG (ft)	0.47	Conv. Total (cfs)	4178.1	4326.7
Delta WS (ft)	0.47	Top Width (ft)	26.13	30.38
BR Open Area (sq ft)	155.62	Frctn Loss (ft)	0.16	0.12
BR Open Vel (ft/s)	4.48	C & E Loss (ft)	0.02	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.69	0.60
BR Sel Method	Energy only	Power Total (lb/ft s)	3.11	2.50

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	357.48	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	356.92	E.G. Elev (ft)	357.21	356.93
Q Total (cfs)	741.00	W.S. Elev (ft)	356.44	356.18
Q Bridge (cfs)	741.00	Crit W.S. (ft)	355.67	355.31
Q Weir (cfs)		Max Chl Dpth (ft)	6.08	6.10
Weir Sta Lft (ft)		Vel Total (ft/s)	7.00	6.94
Weir Sta Rgt (ft)		Flow Area (sq ft)	105.88	106.80
Weir Submerg		Froude # Chl	0.50	0.50
Weir Max Depth (ft)		Specif Force (cu ft)	398.72	368.00
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)	3.31	3.53
Min El Prs (ft)	358.00	W.P. Total (ft)	37.35	36.59
Delta EG (ft)	0.79	Conv. Total (cfs)	8159.7	8103.4
Delta WS (ft)	0.88	Top Width (ft)	32.03	30.27
BR Open Area (sq ft)	155.62	Frctn Loss (ft)	0.27	0.19
BR Open Vel (ft/s)	7.00	C & E Loss (ft)	0.01	0.05
BR Sluice Coef		Shear Total (lb/sq ft)	1.46	1.52
BR Sel Method	Energy only	Power Total (lb/ft s)	10.21	10.57

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	360.11	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	359.77	E.G. Elev (ft)	360.11	360.07
Q Total (cfs)	1395.00	W.S. Elev (ft)	359.77	359.77
Q Bridge (cfs)	1280.58	Crit W.S. (ft)	357.03	356.70
Q Weir (cfs)	114.42	Max Chl Dpth (ft)	9.41	9.69
Weir Sta Lft (ft)	253.98	Vel Total (ft/s)	6.24	0.00
Weir Sta Rgt (ft)	397.17	Flow Area (sq ft)	223.57	
Weir Submerg	0.00	Froude # Chl	0.51	0.48
Weir Max Depth (ft)	0.70	Specif Force (cu ft)	1098.50	1107.08
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)	2.15	
Min El Prs (ft)	358.00	W.P. Total (ft)	176.13	173.80
Delta EG (ft)	2.36	Conv. Total (cfs)		
Delta WS (ft)	2.52	Top Width (ft)	103.75	103.45
BR Open Area (sq ft)	155.62	Frctn Loss (ft)		
BR Open Vel (ft/s)	8.23	C & E Loss (ft)		
BR Sluice Coef	0.48	Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The momentum method has computed a class B profile.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were
used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	360.65	Element		
W.S. US. (ft)	360.29	E.G. Elev (ft)	360.65	360.57
Q Total (cfs)	1765.00	W.S. Elev (ft)	360.29	360.28
Q Bridge (cfs)	1382.21	Crit W.S. (ft)	357.70	357.38
Q Weir (cfs)	382.79	Max Chl Dpth (ft)	9.93	10.20
Weir Sta Lft (ft)	247.37	Vel Total (ft/s)	5.38	0.00
Weir Sta Rgt (ft)	423.76	Flow Area (sq ft)	327.87	
Weir Submerg	0.00	Froude # Chl	0.53	0.51
Weir Max Depth (ft)	1.24	Specif Force (cu ft)	1330.52	1337.54
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)	1.74	
Min El Prs (ft)	358.00	W.P. Total (ft)	261.21	225.17
Delta EG (ft)	2.39	Conv. Total (cfs)		
Delta WS (ft)	2.58	Top Width (ft)	188.82	154.81
BR Open Area (sq ft)	155.62	Frctn Loss (ft)		
BR Open Vel (ft/s)	8.88	C & E Loss (ft)		
BR Sluice Coef	0.49	Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were
used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy are based on critical
depth over the weir.

BRIDGE OUTPUT Profile #7-30-2016

			Inside BR US	Inside BR DS
E.G. US. (ft)	360.86	Element		
W.S. US. (ft)	360.33	E.G. Elev (ft)	360.86	360.86
Q Total (cfs)	2157.00	W.S. Elev (ft)	360.33	360.33
Q Bridge (cfs)	1638.47	Crit W.S. (ft)	361.00	360.93
Q Weir (cfs)	518.53	Max Chl Dpth (ft)	9.97	10.25
Weir Sta Lft (ft)	244.89	Vel Total (ft/s)	5.80	6.18
Weir Sta Rgt (ft)	432.81	Flow Area (sq ft)	372.13	348.94
Weir Submerg	0.00	Froude # Chl	0.63	0.60
Weir Max Depth (ft)	1.44	Specif Force (cu ft)	1569.27	1569.02
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)	1.95	2.22
Min El Prs (ft)	358.00	W.P. Total (ft)	263.29	227.88
Delta EG (ft)	2.11	Conv. Total (cfs)		
Delta WS (ft)	2.16	Top Width (ft)	190.90	157.51
BR Open Area (sq ft)	155.62	Frctn Loss (ft)		
BR Open Vel (ft/s)	10.53	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected

from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2827

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
400.8 432.64 59.3 67.61 75.81 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	395.05	356.5	F
445.1	623.32	356.5	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2759

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	372.77	2.31	372.75	3.21	372.76	3.79	372.7	5.35	372.51
10.05	372	17.86	370.67	21.54	370	22.94	369.68	29.73	368
38.04	366	41.31	365.14	46.41	364	49.98	363.37	58.32	362
62.31	361.29	70.12	360	83.48	358.75	88.76	358.48	93.5	358.22
94.45	358.15	97.16	358	128.47	356.25	137.97	356	166.97	354.77
188.46	354.27	206.85	354.18	213.44	353.14	217.92	353.75	217.94	353.75
221.54	354.24	229.72	353.68	232.16	349.32	242.11	350.03	244.47	353.83
247.97	353.92	254.64	354.1	273.96	354.9	288.2	354.55	327.4	356
337.32	356.54	361.29	357.92	361.9	358	364.26	358.17	365.41	358.24
367	358.37	372.78	358.74	375.31	358.81	388.46	358.79	394.15	358.8
397.84	358.95	400.41	358.96	402.23	359.06	404.53	359.21	405.49	359.23
408.57	359.48	408.95	359.49	411.45	359.7	411.87	359.72	415.03	359.99
415.31	360	417.03	360.2	418.39	360.3	428.8	360.31	433.64	360.4
438.69	360.56	442.82	360.73	450.11	361.09	466.87	362	474.25	362.98
481.02	364	491.61	366	492.4	366.16	501.24	368		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	229.72	.04	244.47	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
229.72 244.47 166.79 169.71 170.1 .1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.5	6.39	370	8.12	369.55	9.88	369.06	13.59	368
15.68	366.43	16.18	366	16.5	365.69	18.44	364	19.42	363
20.51	362	21.74	361.02	22.67	360	27.21	358.55	28.42	358.17
28.89	358	48.8	356	56.94	355.65	62.31	355.06	97.9	354.08
104.04	353.91	106.64	349.71	112.07	349.9	114.29	352	118.86	352.08
128.02	352.48	129.83	352.56	142.4	352.11	158.46	352.06	163.77	353.31
176.98	353.81	195.26	354.09	212.76	355.32	219.91	355.94	220.06	355.97
220.33	356	220.34	356	220.77	356.04	224.36	356.3	227.8	356.43
228.59	356.43	235.01	356.02	235.26	356	235.49	356	244.56	356.04
247.2	356.04	248.45	356.03	254.75	356.02	257.6	356.01	259.1	356
259.88	356.04	262.22	356.13	262.67	356.15	272.42	356.42	274.41	356.5
275.87	356.57	277.84	356.65	283.08	356.9	287.67	357.1	289.83	357.2
291	357.25	295.04	357.45	305.68	358	327.61	359.52	335.25	360
342.18	360.46	349.91	360.96	357.47	361.46	361.02	361.68		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	104.04	.04	114.29	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.04	114.29	102.11	104.17	106.57	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2485

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.38	4.47	368.19	8.54	368.03	9.3	368	11.37	367.71
12.69	367.6	12.97	367.59	21.49	367.83	21.72	367.79	24.75	367.98
24.78	367.97	25.94	368.02	27.18	368.02	28.49	367.97	29.82	367.87
30.25	367.77	31.68	367.58	33.56	367.26	35	366.85	38.23	366
38.64	365.88	39.08	365.73	41.93	364.86	44.58	364	51.26	362.13
51.81	362	52.07	361.95	53.08	361.71	59.58	360.24	60.5	360
66.26	358.56	68.19	358	79.86	356.07	80.2	356	108.17	354.1
116.73	353.3	136.32	353.03	148.67	352.95	152.4	351.89	153.8	351.49
156.31	351.59	159.04	352.43	164.74	351.94	168.76	349.2	174.15	349.34
176.14	352.31	183.78	352.86	185.84	353.01	202.53	353.09	228.12	353.77
242.58	354	243.08	354.08	268.03	355.47	271.1	355.65	276.88	356
279.61	356.42	290.09	358	293.7	358.35	295.16	358.52	296.99	358.71
299.04	359.06	299.15	359.06	301.56	358.95	310.74	358.55	311.53	358.57
326.08	360	343.08	362	362.94	363.92	363.84	364	373.86	364.98
379.95	365.59								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	164.74	.04	176.14	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
164.74	176.14	153.6	154.59	153.42	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2331

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.49	6.68	364.41	7.02	364.4	14.19	364.07	14.82	364.03
15.07	364	20.81	363.68	24.25	363.45	29.07	363.13	39.92	362.46
45.16	362.09	46.53	362	47.28	361.49	49.54	360	52.15	358.3
52.62	358	55.48	356.39	56.22	356	57.41	355.85	63.81	354.98
71.45	353.58	95.41	352.52	117.31	352.1	137.93	352.42	139.13	352.39
143.89	352.26	149.2	348.51	154.15	348.1	159.57	348.42	163.74	351.17
170.01	352.12	172.55	352.5	187.7	353.21	192.26	353.51	195.07	354
218.88	355.98	218.91	355.98	219.4	355.99	219.65	356	241.82	357.49
246.88	357.84	249.17	358	261.51	359.33	265.1	359.63	265.64	359.68

```
  269.31     360  281.07  361.43  286.16     362  288.44  362.36  288.85  362.43
  290.52  362.72  297.61     364  300.67  364.91  304.17     366  307.87  366.43
     309   366.5  310.22  366.57  314.29  366.95  316.04   367.1  316.75  367.15
  319.13  367.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  143.89     .04  163.74    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        143.89  163.74           179.37   177.6  175.87             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2153

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.32    3.92  364.56    4.01  364.56     8.3   364.3   12.46  364.04
   12.76  364.02   13.08     364   13.25  363.87   13.45  363.73   16.05     362
   16.68  361.53   18.91     360   20.77  358.61    21.6     358   21.89  357.75
   24.09     356   30.84  354.47   33.11     354   52.92  352.32   74.07  351.81
  101.65  351.28  120.22  351.43  120.23  351.43   120.5  351.43  127.63  349.88
  130.12  350.05  131.34  346.86     142  346.39  144.29  352.45  150.56  352.61
  153.23  352.68  168.08  353.97  172.88   354.8  182.71     356  183.66  356.09
  183.87  356.11  184.85  356.22  185.07  356.24  187.04  356.46  193.55  357.16
  200.75     358  212.41  359.89  213.06     360  217.64  360.89  223.61     362
  228.58  363.12  232.74     364  234.97  364.51  241.92     366  244.79  366.58
  251.21     368   256.5  369.43   258.4     370   259.7  370.42  264.45     372
  269.94  372.39  273.44  372.63

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  130.12     .04  144.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.12  144.29           160.15  158.75  157.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1994

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.16    1.03  359.27    6.73  358.67   10.37  358.29   12.97     358
   17.14  356.63      19     356   24.53  354.42   26.07     354   48.12   352.4
   57.17  351.28   75.62  351.28   92.39  351.14  101.12   350.8  106.95  350.57
  106.96  350.57  116.46  350.19   118.2  346.45  127.95  346.81  131.85  351.13
  136.96  351.29  150.75  351.72  165.28  352.31  177.37  352.98  196.01     354
  199.93  354.72  201.85  354.82  202.83  354.87  204.78  354.98  212.96  355.47
  214.68   355.8  216.21  355.53  218.47   355.7  222.42     356  236.41  357.33
  243.08     358  253.87   359.4  258.55     360  260.61  360.31  272.91     362
  275.22  362.56  277.16  363.07  277.31  363.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  116.46     .04  131.85    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        116.46  131.85            108.1  106.05  103.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1888

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
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```
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354    68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        129.91  142.97            61.13   58.24    54.2             .3       .5

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 1850

INPUT
Description: Private Bridge
Distance from Upstream XS =    18.5
Deck/Roadway Width        =      16
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       8
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    3.66  359.97           81.5  359.87  357.87   101.7 360.452 358.452
   126.6 360.865 358.865     153 360.835 358.835   175.1 360.491 358.491
     201 360.491 358.491  320.31   359.1

Upstream Bridge Cross Section Data
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354    68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        129.91  142.97            .3       .5

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  359.24           91.4 359.823 357.823   114.8 360.523 358.523
   139.8  360.92  358.92     165 360.892 358.892   189.6 360.465 358.465
   211.7 359.771 357.771

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.24    2.43  358.98    4.52  358.77    8.77  358.35   11.48  358.04
   11.83     358   17.63  357.39   27.59  356.34   30.83     356    31.3  355.95
   50.96     354   66.68  349.58   82.55  349.15    94.6  350.53  103.53  350.29
  110.77  348.95  112.07  348.71  119.64  348.74   131.1  348.28  134.38  346.61
  143.36  346.68  149.09  351.02  155.33  350.92  161.76  350.82  177.15  351.12
  196.32  351.55  209.07  352.05  209.56  359.76  230.29  360.75  314.46  356.32
     319  356.67  323.81  357.07  332.17  357.73  334.02  357.88  335.57     358
  340.94  358.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   131.1     .04  149.09    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
```

```
         131.1  149.09            .3       .5

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)                 350.59    Element                 Inside BR US  Inside BR DS
  W.S. US. (ft)                 350.34    E.G. Elev (ft)               350.52        350.40
  Q Total (cfs)                 194.00    W.S. Elev (ft)               350.24        350.28
  Q Bridge (cfs)                194.00    Crit W.S. (ft)               348.85        348.91
  Q Weir (cfs)                            Max Chl Dpth (ft)              4.51          3.67
  Weir Sta Lft (ft)                       Vel Total (ft/s)               3.36          2.17
  Weir Sta Rgt (ft)                       Flow Area (sq ft)             57.76         89.58
  Weir Submerg                            Froude # Chl                   0.43          0.25
  Weir Max Depth (ft)                     Specif Force (cu ft)         106.49        130.09
  Min El Weir Flow (ft)         359.11    Hydr Depth (ft)                1.26          1.94
  Min El Prs (ft)               358.87    W.P. Total (ft)               48.21         48.10
  Delta EG (ft)                   0.24    Conv. Total (cfs)            3211.9        4621.8
  Delta WS (ft)                   0.09    Top Width (ft)                45.71         46.13
  BR Open Area (sq ft)          994.03    Frctn Loss (ft)                0.04          0.04
  BR Open Vel (ft/s)              3.36    C & E Loss (ft)                0.08          0.01
  BR Sluice Coef                          Shear Total (lb/sq ft)         0.27          0.20
  BR Sel Method           Energy only     Power Total (lb/ft s)          0.92          0.44


Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or
greater than
         1.4.  This may indicate the need for additional cross sections.

BRIDGE OUTPUT  Profile #2-YR

  E.G. US. (ft)                 351.29    Element                 Inside BR US  Inside BR DS
  W.S. US. (ft)                 351.00    E.G. Elev (ft)               351.21        351.09
  Q Total (cfs)                 295.00    W.S. Elev (ft)               350.89        350.93
  Q Bridge (cfs)                295.00    Crit W.S. (ft)               349.70        349.40
  Q Weir (cfs)                            Max Chl Dpth (ft)              5.16          4.32
  Weir Sta Lft (ft)                       Vel Total (ft/s)               3.11          2.33
  Weir Sta Rgt (ft)                       Flow Area (sq ft)             94.94        126.41
  Weir Submerg                            Froude # Chl                   0.44          0.26
  Weir Max Depth (ft)                     Specif Force (cu ft)         169.88        210.88
  Min El Weir Flow (ft)         359.11    Hydr Depth (ft)                1.38          1.77
  Min El Prs (ft)               358.87    W.P. Total (ft)               71.41         74.18
  Delta EG (ft)                   0.27    Conv. Total (cfs)            4862.5        6624.2
  Delta WS (ft)                   0.09    Top Width (ft)                68.87         71.27
  BR Open Area (sq ft)          994.03    Frctn Loss (ft)                0.04          0.04
  BR Open Vel (ft/s)              3.11    C & E Loss (ft)                0.09          0.02
  BR Sluice Coef                          Shear Total (lb/sq ft)         0.31          0.21
  BR Sel Method           Energy only     Power Total (lb/ft s)          0.95          0.49


BRIDGE OUTPUT  Profile #10-YR

  E.G. US. (ft)                 352.85    Element                 Inside BR US  Inside BR DS
  W.S. US. (ft)                 352.55    E.G. Elev (ft)               352.79        352.69
```

Q Total (cfs)	741.00	W.S. Elev (ft)	352.45	352.46
Q Bridge (cfs)	741.00	Crit W.S. (ft)	351.71	350.92
Q Weir (cfs)		Max Chl Dpth (ft)	6.72	5.85
Weir Sta Lft (ft)		Vel Total (ft/s)	2.86	2.58
Weir Sta Rgt (ft)		Flow Area (sq ft)	258.85	287.00
Weir Submerg		Froude # Chl	0.32	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	491.20	571.01
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	2.15	2.43
Min El Prs (ft)	358.87	W.P. Total (ft)	124.09	123.03
Delta EG (ft)	0.26	Conv. Total (cfs)	12672.8	15746.4
Delta WS (ft)	0.08	Top Width (ft)	120.34	118.06
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.86	C & E Loss (ft)	0.06	0.05
BR Sluice Coef		Shear Total (lb/sq ft)	0.45	0.32
BR Sel Method	Energy only	Power Total (lb/ft s)	1.27	0.83

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	354.15	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	353.80	E.G. Elev (ft)	354.07	353.98
Q Total (cfs)	1395.00	W.S. Elev (ft)	353.67	353.65
Q Bridge (cfs)	1395.00	Crit W.S. (ft)	352.64	352.13
Q Weir (cfs)		Max Chl Dpth (ft)	7.94	7.04
Weir Sta Lft (ft)		Vel Total (ft/s)	3.44	3.26
Weir Sta Rgt (ft)		Flow Area (sq ft)	405.74	427.57
Weir Submerg		Froude # Chl	0.32	0.31
Weir Max Depth (ft)		Specif Force (cu ft)	997.13	1098.38
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.38	3.62
Min El Prs (ft)	358.87	W.P. Total (ft)	126.54	125.41
Delta EG (ft)	0.29	Conv. Total (cfs)	22970.5	26502.1
Delta WS (ft)	0.13	Top Width (ft)	120.16	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	3.44	C & E Loss (ft)	0.03	0.07
BR Sluice Coef		Shear Total (lb/sq ft)	0.74	0.59
BR Sel Method	Energy only	Power Total (lb/ft s)	2.54	1.92

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	354.74	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.38	E.G. Elev (ft)	354.65	354.57
Q Total (cfs)	1765.00	W.S. Elev (ft)	354.21	354.18
Q Bridge (cfs)	1765.00	Crit W.S. (ft)	353.00	352.54
Q Weir (cfs)		Max Chl Dpth (ft)	8.48	7.57
Weir Sta Lft (ft)		Vel Total (ft/s)	3.76	3.61
Weir Sta Rgt (ft)		Flow Area (sq ft)	469.96	489.39
Weir Submerg		Froude # Chl	0.32	0.32
Weir Max Depth (ft)		Specif Force (cu ft)	1298.22	1406.78
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.91	4.15
Min El Prs (ft)	358.87	W.P. Total (ft)	127.61	126.46
Delta EG (ft)	0.32	Conv. Total (cfs)	28299.4	32018.7
Delta WS (ft)	0.18	Top Width (ft)	120.09	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.06
BR Open Vel (ft/s)	3.76	C & E Loss (ft)	0.03	0.09
BR Sluice Coef		Shear Total (lb/sq ft)	0.89	0.73
BR Sel Method	Energy only	Power Total (lb/ft s)	3.36	2.65

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	355.33	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.96	E.G. Elev (ft)	355.23	355.15
Q Total (cfs)	2157.00	W.S. Elev (ft)	354.74	354.70
Q Bridge (cfs)	2157.00	Crit W.S. (ft)	353.33	352.91
Q Weir (cfs)		Max Chl Dpth (ft)	9.01	8.09
Weir Sta Lft (ft)		Vel Total (ft/s)	4.04	3.91
Weir Sta Rgt (ft)		Flow Area (sq ft)	533.72	551.12
Weir Submerg		Froude # Chl	0.33	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	1639.89	1755.90
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	4.45	4.67
Min El Prs (ft)	358.87	W.P. Total (ft)	128.68	127.51
Delta EG (ft)	0.34	Conv. Total (cfs)	34036.2	37958.7
Delta WS (ft)	0.22	Top Width (ft)	120.01	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.06	0.06
BR Open Vel (ft/s)	4.04	C & E Loss (ft)	0.02	0.10
BR Sluice Coef		Shear Total (lb/sq ft)	1.04	0.87
BR Sel Method	Energy only	Power Total (lb/ft s)	4.20	3.41

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1830

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.1	149.09	183.1	189.46	194.94	.3	.5

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1641

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.1	4.25	358	4.42	357.95	4.44	357.94	5.13	357.91
5.87	357.89	19.69	357.39	35.1	356.79	40.55	356.56	48.51	356.22
50.1	356.16	53.65	356	83.2	353.06	108.43	350.69	126.88	349.28
127.65	348.68	128.6	347.92	138.1	348.36	140.07	345.19	146.51	345.53
151.14	349.6	158.59	349.89	158.6	349.89	162.23	350.02	178.14	350
203.35	350.65	232.7	352	242.28	353.59	244.74	354	245.26	354.15
247.65	354.81	250.51	355.6	252.04	356	253.98	356.59	258.69	358
258.77	358.02	262.44	359.03	266	360	266.2	360.05	268.14	360.44
269.28	360.66	271.48	361.07	272.68	361.28	273.3	361.39		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	138.1	.04	151.14	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.1	151.14	176.17	177.29	178.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1463

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	356.46	5.61	356.33	11.71	356.19	16.33	356.06	18.18	356.02
18.32	356.02	18.54	356	21.8	355.67	22.14	355.65	22.36	355.64
22.69	355.6	22.89	355.58	27.15	355.19	29.24	355.09	30.76	355.02
40.4	354.87	40.86	354.85	41.76	354.8	42.75	354.73	52.82	354
69.61	352.87	75.51	352.42	79.43	352.14	79.72	352.12	81.65	352
84.43	351.86	90.72	351.56	92.09	351.48	94.79	351.34	97.19	351.19
107.32	350.52	111.7	350.26	115.41	350	138.29	349.1	159.11	349.1
178.46	349.47	180.13	349.17	185.3	348.24	187.99	347.08	189.19	343.45
196.87	343.35	197.98	346.06	206.54	348.53	210.52	348.75	210.53	348.75
221.24	349.34	234.53	349.78	266.44	352.56	278.62	358	283.38	359.43
285.38	360	287	360.55	290.28	361.58	291.64	362	294.58	362.89
295.91	363.28	296.57	363.47	298.25	364	302.9	365.77	303.51	366
309.02	367.06	310.22	367.29	310.97	367.42	314.74	368	315.87	368.18
323.73	369.62								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	180.13	.04	206.54	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
180.13	206.54	172.51	172.28	171.74	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1291

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	363.49	2.9	363.09	10.68	362.14	11.86	362	19.26	360.55
22.08	360	26.38	358.97	30.59	358	34.4	357.21	38.91	356
43.26	354.82	46.23	354.17	47.03	354	49.14	353.62	58.14	352
66.85	350.97	70.1	350.58	71.43	350.42	75.07	350	108.53	348.38
120.68	348.74	128.48	348.81	133.87	347.09	136.5	346.81	137.71	345.2
141.95	344.89	151.53	345.15	155.49	348.28	157.84	348.3	161.16	349.47
178.09	349.55	199.34	350.93	214.63	351.7	228.4	351.81	242.53	351.32
264.66	350.52	286.44	349.15	310.41	348.72	338.21	349	371.72	348.77
400.9	348.48	416.8	348.59	427.74	348.67	430.58	344.68	431.8	344.26
436.65	344.85	441.26	344.51	442.29	347.58	447.46	349.08	448.01	349.24
458.85	350.67	471.3	352.75	481.29	354.33	491.23	357.26		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	427.74	.04	447.46	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
427.74	447.46	167.7	167.44	166.86	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1124

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	365.04	4.51	364.72	9.16	364.27	9.25	364.27	12.12	364
15.5	363.29	21.22	362	23.39	361.54	30.93	360	35.95	358.97
39.85	358.17	50.58	356	54.08	355.4	62.03	354	62.65	353.83
63.34	353.65	73.01	352.9	74.16	352.78	80.64	352	83.69	351.62
99.16	350	114.6	348.69	124.02	348.63	131.1	347.62	149.71	348.01
162.72	347.51	168.53	347.49	170.35	344.49	173.71	344.74	179.87	343.88
182.52	344.16	184.05	346.89	186.24	347	189.68	348.23	195.55	348.19
207	347.6	214.71	347.82	233.96	347.66	252.64	348.2	276.32	348.2
304.29	347.84	332.45	347.91	346.81	348.51	347.97	348.3	348	348.3
350.12	347.92	353.36	347.9	355.26	348.34	360.2	343.58	367.1	344.05
375.37	349.26	378.03	349.7	378.05	349.7	380.33	350.08	392.73	351.02
398.58	351.56	403.03	351.81	420.09	354	435.53	356	439.63	356.61
442.77	357.02	450.32	358	455.33	358.77	457.5	359.06	460.77	359.47
461.87	359.63	462.18	359.68	465.1	360	473.65	361.11	476.71	361.53
479.97	362	480.72	362.12	480.94	362.16	483.56	362.62		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	355.26	.04	375.37	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
355.26	375.37	134.05	129.91	125.5	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
8.7	60.7	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 994

INPUT

Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.1	9.62	358	14.71	356.95	19.8	356	30.42	354.45
33.38	354	36.49	353.7	54.6	352	57.99	351.76	59.66	351.64
70.88	350.84	72.94	350.7	82.85	350	114.72	348.11	135.81	347.8
150.43	347.49	170.48	346.43	171.74	343.41	176.87	342.99	186.86	344.33
188.91	347.54	212.62	347.3	226.74	347	231.31	347.32	247.53	347.69
256.13	347.8	270.71	347.72	281.14	348.11	284.5	347.5	286.04	347.21
292.04	347.03	296.33	343.73	302.06	343.28	306.33	342.85	309.85	346.99
314.78	348.42	315.81	348.64	315.83	348.64	320.17	349.59	333.26	350.57
351	352.36	364.37	354	373	355.3	375.39	355.67	377.77	356
383.23	356.87	390.35	358	393.92	358.56	397.2	359.05	403.45	360
407.85	360.84	413.86	362	417.04	362.66				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	281.14	.04	315.83	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
281.14	315.83	82.93	82.66	81.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 911

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	2.24	358.56	3.51	358.32	5.22	358	12.31	356.66
15.03	356.09	15.46	356	22.75	354.09	23.08	354	23.55	353.96
24.83	353.84	24.92	353.83	25.43	353.83	29.76	353.58	30	353.57
30.58	353.5	31.25	353.48	33.98	353.69	35.3	353.7	36.97	353.98
37.02	353.98	37.13	354	37.9	354.04	38.06	354.05	38.27	354.04
38.32	354.04	38.42	354.03	38.82	354	38.99	353.95	39.2	353.82
44.56	353.53	50.12	353.05	56.89	352.42	59.95	352.14	61.41	352
82.47	350.57	91.08	350	100.51	349.7	117.56	348.31	130.96	347.87
157.71	347.03	178.22	347.23	181.99	344.27	189.47	343.55	196.66	344.12
201.78	347.5	223.44	347.06	243.05	346.93	252.46	346.76	252.6	346.85
292.54	347.06	306.34	347.38	312.43	347.51	317.18	343.33	321.46	342.92
325.5	343.21	332.27	348.29	337.05	349	337.06	349	351.26	351.11
381.21	355.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	312.43	.04	332.27	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
312.43	332.27	138.48	148.66	157.22	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 762

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.13	2.35	357.03	6.48	356.67	7.69	356.61	9.39	356.51
14.41	356	19.83	355.44	21	355.32	22.74	355.12	32.28	354
34.37	353.8	35.36	353.71	51.57	352.14	52.81	352.02	53.01	352
61.67	351.41	65.26	351.17	67.97	350.99	73.71	350.62	76.99	350.42
81.35	350.17	81.78	350.14	84.01	350.03	84.52	350	108.7	348.46
145.52	346.99	169.46	347.05	186.24	347.42	197.19	345.22	199.28	343.68
205.18	343.3	208.29	343.86	210.89	346.07	228.95	347.18	235.77	347.3
240.55	347.28	244.65	347.26	244.66	347.26	252.8	347.23	257.6	343.09
259.66	342.54	263.98	342.94	271.9	344.77	276.21	346.65	276.24	346.66
276.97	346.98	298.22	347.67	328.56	347.99	360.33	351.01	370.76	351.97
371.89	352	373.6	352.14	375.07	352.27	376.35	352.4	384.34	353.82
384.65	353.87	384.83	353.9	384.94	353.92	385.3	354	392	355.62
393.35	356	395.32	356.4	403.54	358	408.28	358.51	410.83	358.82
411.55	358.82	412.84	358.8	416.14	358.49				

Manning's n Values num= 3

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     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   252.8     .04  276.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         252.8  276.97           101.69  104.14  104.96             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   366.8   407.4     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree          RS: 658

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  358.95    2.26  358.79     5.3  358.55    9.28   358.2   11.48     358
   14.26  357.65   16.66  357.36   20.41  356.87   26.22  356.16   35.44  355.02
   41.74  354.15   42.79     354   59.31   352.1    59.6  352.07   59.76  352.05
    60.3     352   70.49  351.39    76.4  351.02   86.06  350.44   92.55     350
  118.81     348  200.75  346.51  222.09  346.42  240.58  346.42  240.59  346.42
   245.1  346.43  248.95  343.16  255.63  340.34   262.8   340.2  267.31  342.59
  270.68  343.91  277.89  346.74  301.79  346.57  332.03  346.36  388.47  347.88
  391.63  347.92  394.29  347.92  394.49  347.91  400.05     348  401.61  348.21
  402.93   348.4  404.42  348.65   405.7  348.87  406.58  349.04  407.19  349.17
  412.03     350  415.92  350.98  417.72  351.13  418.47  351.21  420.03  351.39
  422.64  351.75  422.86  351.79  424.26     352  426.31  352.71  429.22  353.83
  429.43  353.91  429.85  354.09  434.45     356  442.51  357.75  442.83  357.83
  443.54     358  450.24  358.39  464.98  359.29  465.18  359.32  466.53  359.48
  470.64     360  471.72  360.06  477.88   360.4  481.52  360.61  490.37  361.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   245.1     .04  277.89    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         245.1  277.89           129.48  132.55  137.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree          RS: 526

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  357.29    9.33  356.07    9.88     356   15.36  355.41   18.93  355.03
      21  354.81   28.17     354   30.46  353.79    34.1  353.48   42.62  352.81
   46.05  352.53    47.8   352.4   49.22  352.29   53.02     352   59.04  351.42
   61.87  351.16   67.63  350.62   73.95     350   93.12  348.67  121.73  346.39
  157.75  346.18  186.76  345.79  188.34  345.18  188.36  345.17  195.28  342.48
  203.56  341.63  212.23  342.05  213.87   346.6  218.56  346.44  218.57  346.44
  237.47   345.8  275.28  345.64  307.64  346.39  309.73  346.39   311.5  346.41
  313.11  346.41  314.75   346.4  329.39  346.38  337.83  346.31  340.98  346.28
  350.53  346.19  372.03     346  378.64  346.57  382.54   346.9  390.22  347.56
  395.28     348  402.02  349.12  407.12     350  408.46  350.19  409.19  350.29
  409.96  350.41  415.16  351.21  417.91  351.63  420.21     352  425.22  352.92
  430.26     354  432.81  354.65  434.33     355  437.88  355.74  438.42  355.87
  439.17     356  441.01  356.24   446.9  356.96  448.95  357.26  452.86  357.84
  453.18  357.89  453.89     358  458.07  358.55  459.62  358.79  462.41  359.19
  467.23     360  483.54  360.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.76     .04  213.87    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.76  213.87           143.66  145.78  147.57             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     443   476.3     360

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 380

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.67	.48	366.64	10.41	366	17.37	364.74	21.25	364
25.91	363.14	31.6	362	37.28	360.91	41.95	360	46.91	359.56
63.27	358	71.54	357.11	76.74	356.56	81.96	356	84.51	355.63
95.36	354	101.45	352.61	104.07	352	106.08	351.38	110.9	350
116.69	348.33	117.74	348	119.59	347.7	121.4	347.41	126.04	346.65
130	346	133.26	346.1	135.45	346.16	138.15	346.24	146.78	346.47
149.42	346.45	150.34	346.44	151.1	346.43	151.57	346.42	155.44	346.29
164.04	345.66	193.28	345.53	212.79	346.39	212.81	346.39	215.37	346.51
219.06	341.92	227.8	342.05	238.17	343.21	243.49	346.6	243.7	346.6
243.72	346.59	260.79	346.48	291.92	346.27	304.59	346	319.84	347.43
322.97	347.65	328.49	348	330.64	348.16	332.41	348.38	334.7	348.61
337.77	348.94	346.14	350	350.1	350.95	354.1	352	360.75	353.66
362.11	354	365.83	354.84	369.98	355.77	370.39	355.85	371.06	356
372.08	356.17	382.09	358	386.28	358.59	390.61	359.14		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.37	.04	243.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.37	243.7	235.8	234.15	232.25	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10	44.6	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 146

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	6.37	358.83	15.88	358.07	16.47	358.02	16.84	358
21.14	357.01	25.77	356	28.06	355.5	30.16	355.06	34.73	354.18
35.2	354.08	35.66	354	37.68	353.72	38.1	353.66	41.6	353.18
44.05	352.85	45.88	352.61	50.58	352.01	50.71	352	52.8	351.88
60.34	351.5	61.05	351.44	66.3	351.17	67.3	351.09	70.18	350.94
72.76	350.72	76.24	350.54	81.27	350	100.43	348.85	105.06	348.54
115.51	348	138.29	346.9	181.73	345.23	210.07	344.41	210.09	344.41
215.13	344.26	220.35	341.19	225.41	340.73	231.22	340.96	236.01	344.28
240.33	344.79	253.16	346.33	258.95	349.49	260.11	349.59	263.96	350.56
267.35	352	269.7	353.13	271.51	354	273.55	355.07	275.21	356
277.09	356.89	279.29	358	283.62	359.32	285.5	359.78	286.47	360
291.06	360.4	294.96	360.73	299.25	361.08	301.38	361.31	304.13	361.54
306.53	361.84	306.74	361.86	307.86	362	314.98	363.37	318.1	364
325.64	365.64	327.27	366	335.18	367.64	336.93	368	339.58	368.18
343.85	368.49	346.34	368.31						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.13	.04	236.01	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.13	236.01	88.09	82.88	77.62	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
15.2	56.5	365	296.2	338	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 63

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	354	7.34	353.26	12.41	352.73	16.79	352.29	19.4	352
27.1	350.79	31.84	350	38.59	349.24	50.74	348	57.78	347.37
58.67	347.29	60.21	347.18	62.82	346.94	66.66	346.68	68.29	346.54
76.91	346	79.38	345.88	79.63	345.86	80	345.83	80.68	345.78
83.85	345.58	87.55	345.35	103.02	344	108.36	342.62	114.01	342
118.01	340	138.02	340	142.02	342	147.2	343.25	150.03	344
151.66	344.32	153.16	344.61	153.93	344.74	155.1	344.92	156.66	345.2
158.34	345.42	159.11	345.56	160.97	345.74	161.25	345.79	163.2	345.94
163.62	346	170.72	346	174.59	346.47	175.77	346.56	176.48	346.66
177.66	346.84	178.56	346.94	180.57	347.23	181.89	347.4	182.5	347.49
185.96	348	187.92	348.58	193.03	350	195.4	350.82	198.31	352
201.23	353.21	203.77	354	207.9	355.67	208.87	356	212.01	357.21
214.25	358	216.21	358.46	223.24	360	225.85	360.29	227.5	360.52
231.62	361.04	238.04	362	248.29	363.79	249.46	364	253.46	364.5
253.68	364.53								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	103.02	.04	150.03	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
103.02	150.03	0	0	.1	.3

SUMMARY OF MANNING'S N VALUES

River:Plumtree

Reach	River Sta.	n1	n2	n3
Plumtree	10286	.085	.04	.085
Plumtree	10044	.085	.04	.085
Plumtree	9814	.085	.04	.085
Plumtree	9762	.085	.04	.085
Plumtree	9732	.075	.04	.075
Plumtree	9650	Culvert		
Plumtree	9589	.075	.04	.075
Plumtree	9499	.075	.04	.075
Plumtree	9398	.085	.04	.085
Plumtree	9301	.085	.04	.085
Plumtree	9196	.085	.04	.085
Plumtree	8987	.085	.04	.085
Plumtree	8753	.065	.04	.085
Plumtree	8579	.075	.04	.085
Plumtree	8374	.075	.04	.085
Plumtree	8229	.075	.04	.085
Plumtree	8094	.075	.04	.085
Plumtree	7954	.075	.04	.085
Plumtree	7800	.075	.04	.085
Plumtree	7548	.075	.04	.085
Plumtree	7367	.075	.04	.075
Plumtree	7216	.075	.04	.075
Plumtree	7030	.075	.04	.075
Plumtree	6893	.075	.04	.075
Plumtree	6766	.075	.04	.075
Plumtree	6663	.075	.04	.075
Plumtree	6568	.075	.04	.075
Plumtree	6454	.075	.04	.075
Plumtree	6350	.075	.04	.075
Plumtree	6296	.075	.04	.075
Plumtree	6250	Bridge		
Plumtree	6197	.075	.04	.075
Plumtree	6122	.075	.04	.075
Plumtree	6028	.075	.04	.075
Plumtree	5926	.075	.04	.075
Plumtree	5824	.075	.04	.075
Plumtree	5745	.075	.04	.075
Plumtree	5711	.075	.04	.075
Plumtree	5650	Bridge		
Plumtree	5614	.075	.04	.075
Plumtree	5560	.075	.04	.075
Plumtree	5510	.075	.04	.075
Plumtree	5500	Bridge		
Plumtree	5474	.075	.04	.075
Plumtree	5419	.075	.04	.075
Plumtree	5323	.075	.04	.075
Plumtree	5209	.075	.04	.075
Plumtree	5107	.075	.04	.075

Plumtree	5040	.075	.04	.075
Plumtree	5000	Bridge		
Plumtree	4932	.075	.04	.075
Plumtree	4845	.075	.04	.075
Plumtree	4745	.075	.04	.075
Plumtree	4636	.075	.04	.075
Plumtree	4550	.075	.04	.075
Plumtree	4400	Bridge		
Plumtree	4344	.075	.04	.075
Plumtree	4289	.075	.04	.075
Plumtree	4185	.075	.04	.075
Plumtree	4033	.075	.04	.075
Plumtree	3930	.075	.04	.075
Plumtree	3816	.075	.04	.075
Plumtree	3688	.075	.04	.075
Plumtree	3550	.075	.04	.075
Plumtree	3428	.075	.04	.075
Plumtree	3296	.075	.04	.075
Plumtree	3179	.075	.04	.075
Plumtree	3077	.075	.04	.075
Plumtree	2978	.075	.04	.075
Plumtree	2917	.075	.04	.075
Plumtree	2900	Bridge		
Plumtree	2827	.075	.04	.075
Plumtree	2759	.075	.04	.075
Plumtree	2589	.075	.04	.075
Plumtree	2485	.075	.04	.075
Plumtree	2331	.075	.04	.075
Plumtree	2153	.075	.04	.075
Plumtree	1994	.075	.04	.075
Plumtree	1888	.075	.04	.075
Plumtree	1850	Bridge		
Plumtree	1830	.075	.04	.075
Plumtree	1641	.075	.04	.075
Plumtree	1463	.075	.04	.075
Plumtree	1291	.075	.04	.075
Plumtree	1124	.075	.04	.075
Plumtree	994	.075	.04	.075
Plumtree	911	.075	.04	.075
Plumtree	762	.075	.04	.075
Plumtree	658	.075	.04	.075
Plumtree	526	.075	.04	.075
Plumtree	380	.075	.04	.075
Plumtree	146	.075	.04	.075
Plumtree	63	.075	.04	.075

SUMMARY OF REACH LENGTHS

River: Plumtree

Reach	River Sta.	Left	Channel	Right
Plumtree	10286	240.46	241.25	237.2
Plumtree	10044	233.9	230.57	222.97
Plumtree	9814	52.19	51.52	50.85
Plumtree	9762	32.64	30.09	27.57
Plumtree	9732	145.71	143.47	141.55
Plumtree	9650	Culvert		
Plumtree	9589	74.95	89.37	103.36
Plumtree	9499	98.65	101.8	104.92
Plumtree	9398	97.24	96.47	94.54
Plumtree	9301	109.84	105	100.42
Plumtree	9196	197.07	208.89	195.59
Plumtree	8987	233.38	233.77	226.61
Plumtree	8753	178.41	174.76	168.62
Plumtree	8579	198.29	204.23	206.04
Plumtree	8374	144.9	145.45	146.03
Plumtree	8229	135.27	135.16	134.66
Plumtree	8094	138.21	139.81	140.01
Plumtree	7954	155.28	153.64	152.99
Plumtree	7800	252.37	252.82	252.55
Plumtree	7548	174.12	180.41	186.79
Plumtree	7367	143.37	150.84	157.8
Plumtree	7216	190.28	186.42	181.46
Plumtree	7030	140.13	137.19	133.92
Plumtree	6893	124.46	126.53	128.02

Plumtree	6766	103.31	103.53	104.46
Plumtree	6663	90.58	94.53	97.72
Plumtree	6568	112.95	114.27	115.74
Plumtree	6454	102.69	103.78	104.74
Plumtree	6350	52.33	53.78	55.24
Plumtree	6296	98.47	99.02	99.58
Plumtree	6250	Bridge		
Plumtree	6197	75.78	74.81	73.83
Plumtree	6122	98.18	94.21	91.92
Plumtree	6028	100.93	101.91	101.19
Plumtree	5926	102.11	102.54	102.93
Plumtree	5824	75.62	79.21	82.75
Plumtree	5745	34.07	34.02	34.04
Plumtree	5711	96.24	96.18	98.71
Plumtree	5650	Bridge		
Plumtree	5614	60.47	54.67	45.26
Plumtree	5560	56.62	49.74	41.3
Plumtree	5510	36.56	36.42	38.18
Plumtree	5500	Bridge		
Plumtree	5474	54.4	54.86	54.94
Plumtree	5419	93.04	95.36	97.65
Plumtree	5323	116.69	114.31	111.9
Plumtree	5209	111.42	101.59	91.47
Plumtree	5107	67.29	67.07	66.86
Plumtree	5040	104.82	108.2	107.53
Plumtree	5000	Bridge		
Plumtree	4932	86.54	87.15	87.5
Plumtree	4845	89.54	100.49	110.66
Plumtree	4745	111.08	108.67	106.25
Plumtree	4636	90.09	85.72	81.01
Plumtree	4550	205.67	206.54	206.28
Plumtree	4400	Bridge		
Plumtree	4344	54.24	54.2	54.21
Plumtree	4289	104.83	104.42	103.52
Plumtree	4185	151.73	151.97	152.24
Plumtree	4033	105.3	103.27	101.24
Plumtree	3930	112.01	113.72	114.59
Plumtree	3816	128.5	127.87	127.21
Plumtree	3688	137.67	137.99	138.3
Plumtree	3550	121.58	121.96	122.09
Plumtree	3428	131.85	132.32	132.95
Plumtree	3296	117.57	116.94	115.99
Plumtree	3179	101.1	102.24	103.14
Plumtree	3077	99.64	98.98	98.39
Plumtree	2978	61.85	60.74	60.21
Plumtree	2917	89.63	90.26	89.98
Plumtree	2900	Bridge		
Plumtree	2827	59.3	67.61	75.81
Plumtree	2759	166.79	169.71	170.1
Plumtree	2589	102.11	104.17	106.57
Plumtree	2485	153.6	154.59	153.42
Plumtree	2331	179.37	177.6	175.87
Plumtree	2153	160.15	158.75	157.04
Plumtree	1994	108.1	106.05	103.75
Plumtree	1888	61.13	58.24	54.2
Plumtree	1850	Bridge		
Plumtree	1830	183.1	189.46	194.94
Plumtree	1641	176.17	177.29	178.52
Plumtree	1463	172.51	172.28	171.74
Plumtree	1291	167.7	167.44	166.86
Plumtree	1124	134.05	129.91	125.5
Plumtree	994	82.93	82.66	81.8
Plumtree	911	138.48	148.66	157.22
Plumtree	762	101.69	104.14	104.96
Plumtree	658	129.48	132.55	137.52
Plumtree	526	143.66	145.78	147.57
Plumtree	380	235.8	234.15	232.25
Plumtree	146	88.09	82.88	77.62
Plumtree	63	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Plumtree

Reach	River Sta.	Contr.	Expan.

Plumtree	10286		.1	.3
Plumtree	10044		.1	.3
Plumtree	9814		.1	.3
Plumtree	9762		.1	.3
Plumtree	9732		.3	.5
Plumtree	9650	Culvert		
Plumtree	9589		.3	.5
Plumtree	9499		.1	.3
Plumtree	9398		.1	.3
Plumtree	9301		.1	.3
Plumtree	9196		.1	.3
Plumtree	8987		.1	.3
Plumtree	8753		.1	.3
Plumtree	8579		.1	.3
Plumtree	8374		.1	.3
Plumtree	8229		.1	.3
Plumtree	8094		.1	.3
Plumtree	7954		.1	.3
Plumtree	7800		.1	.3
Plumtree	7548		.1	.3
Plumtree	7367		.1	.3
Plumtree	7216		.1	.3
Plumtree	7030		.1	.3
Plumtree	6893		.1	.3
Plumtree	6766		.1	.3
Plumtree	6663		.1	.3
Plumtree	6568		.1	.3
Plumtree	6454		.1	.3
Plumtree	6350		.1	.3
Plumtree	6296		.3	.5
Plumtree	6250	Bridge		
Plumtree	6197		.3	.5
Plumtree	6122		.1	.3
Plumtree	6028		.1	.3
Plumtree	5926		.1	.3
Plumtree	5824		.1	.3
Plumtree	5745		.1	.3
Plumtree	5711		.3	.5
Plumtree	5650	Bridge		
Plumtree	5614		.3	.5
Plumtree	5560		.1	.3
Plumtree	5510		.3	.5
Plumtree	5500	Bridge		
Plumtree	5474		.3	.5
Plumtree	5419		.1	.3
Plumtree	5323		.1	.3
Plumtree	5209		.1	.3
Plumtree	5107		.1	.3
Plumtree	5040		.3	.5
Plumtree	5000	Bridge		
Plumtree	4932		.3	.5
Plumtree	4845		.1	.3
Plumtree	4745		.1	.3
Plumtree	4636		.1	.3
Plumtree	4550		.3	.5
Plumtree	4400	Bridge		
Plumtree	4344		.3	.5
Plumtree	4289		.1	.3
Plumtree	4185		.1	.3
Plumtree	4033		.1	.3
Plumtree	3930		.1	.3
Plumtree	3816		.1	.3
Plumtree	3688		.1	.3
Plumtree	3550		.1	.3
Plumtree	3428		.1	.3
Plumtree	3296		.1	.3
Plumtree	3179		.1	.3
Plumtree	3077		.1	.3
Plumtree	2978		.1	.3
Plumtree	2917		.3	.5
Plumtree	2900	Bridge		
Plumtree	2827		.3	.5
Plumtree	2759		.1	.3
Plumtree	2589		.1	.3
Plumtree	2485		.1	.3
Plumtree	2331		.1	.3
Plumtree	2153		.1	.3
Plumtree	1994		.1	.3
Plumtree	1888		.3	.5

Plumtree	1850	Bridge		
Plumtree	1830		.3	.5
Plumtree	1641		.1	.3
Plumtree	1463		.1	.3
Plumtree	1291		.1	.3
Plumtree	1124		.1	.3
Plumtree	994		.1	.3
Plumtree	911		.1	.3
Plumtree	762		.1	.3
Plumtree	658		.1	.3
Plumtree	526		.1	.3
Plumtree	380		.1	.3
Plumtree	146		.1	.3
Plumtree	63		.1	.3

HEC-RAS Plan: B River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	10286	1-YR	223.00	395.09	396.81	396.59	396.90	0.008138	3.23	121.42	150.01	0.58
Plumtree	10286	2-YR	307.00	395.09	396.98	396.60	397.10	0.008539	3.69	147.05	154.15	0.62
Plumtree	10286	10-YR	596.00	395.09	397.61	396.95	397.76	0.006496	4.33	248.53	169.55	0.58
Plumtree	10286	50-YR	995.00	395.09	398.01	397.34	398.27	0.008537	5.71	319.43	179.33	0.69
Plumtree	10286	100-YR	1200.00	395.09	398.12	397.51	398.46	0.010360	6.50	338.95	180.10	0.76
Plumtree	10286	7-30-2016	1333.00	395.09	398.20	397.62	398.58	0.011255	6.93	353.34	180.66	0.80
Plumtree	10044	1-YR	223.00	392.49	394.38	394.17	394.55	0.012033	4.01	95.57	160.05	0.71
Plumtree	10044	2-YR	307.00	392.49	394.57	394.26	394.76	0.011181	4.31	128.56	181.74	0.71
Plumtree	10044	10-YR	596.00	392.49	394.81	394.81	395.21	0.019905	6.42	174.65	200.40	0.97
Plumtree	10044	50-YR	995.00	392.49	395.39		395.77	0.013024	6.57	298.64	234.35	0.83
Plumtree	10044	100-YR	1200.00	392.49	395.74		396.07	0.009632	6.31	384.48	255.67	0.74
Plumtree	10044	7-30-2016	1333.00	392.49	395.95		396.26	0.008317	6.22	439.55	268.46	0.69
Plumtree	9814	1-YR	223.00	388.76	391.65	391.32	391.94	0.010722	4.30	51.91	43.53	0.69
Plumtree	9814	2-YR	307.00	388.76	392.01	391.61	392.32	0.010099	4.47	68.69	52.13	0.69
Plumtree	9814	10-YR	596.00	388.76	393.97	392.33	394.04	0.000995	2.52	424.51	272.22	0.25
Plumtree	9814	50-YR	995.00	388.76	395.24	393.16	395.30	0.000598	2.45	789.28	304.39	0.20
Plumtree	9814	100-YR	1200.00	388.76	395.55	393.38	395.62	0.000647	2.66	886.00	315.10	0.21
Plumtree	9814	7-30-2016	1333.00	388.76	395.75	393.50	395.82	0.000664	2.77	948.65	317.79	0.22
Plumtree	9762	1-YR	223.00	388.00	390.84		391.29	0.014434	5.36	41.63	30.27	0.81
Plumtree	9762	2-YR	307.00	388.00	391.35	390.95	391.76	0.011216	5.15	64.37	69.10	0.73
Plumtree	9762	10-YR	596.00	388.00	393.94		394.00	0.000648	2.21	479.19	228.01	0.20
Plumtree	9762	50-YR	995.00	388.00	395.21		395.27	0.000538	2.45	796.82	286.89	0.19
Plumtree	9762	100-YR	1200.00	388.00	395.52		395.59	0.000598	2.69	890.44	322.86	0.21
Plumtree	9762	7-30-2016	1333.00	388.00	395.71		395.79	0.000658	2.89	954.17	331.68	0.22
Plumtree	9732	1-YR	223.00	387.00	390.89	389.66	391.03	0.002737	3.09	72.07	34.50	0.38
Plumtree	9732	2-YR	307.00	387.00	391.35	390.00	391.54	0.002876	3.45	88.95	37.47	0.39
Plumtree	9732	10-YR	596.00	387.00	393.80	390.90	393.96	0.000990	3.21	193.76	166.87	0.26
Plumtree	9732	50-YR	995.00	387.00	395.11	391.81	395.24	0.000766	3.32	527.07	223.95	0.24
Plumtree	9732	100-YR	1200.00	387.00	395.40	392.17	395.56	0.000880	3.68	593.43	235.24	0.26
Plumtree	9732	7-30-2016	1333.00	387.00	395.59	392.41	395.76	0.000934	3.86	638.78	241.96	0.27
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	223.00	386.27	389.31	388.43	389.52	0.004152	3.67	61.60	35.83	0.46
Plumtree	9589	2-YR	307.00	386.27	389.99	388.79	390.20	0.002856	3.72	85.70	43.20	0.40
Plumtree	9589	10-YR	596.00	386.27	391.04	389.65	391.43	0.003384	5.07	123.56	63.32	0.47
Plumtree	9589	50-YR	995.00	386.27	392.07	390.53	392.59	0.003515	6.09	227.25	135.97	0.50
Plumtree	9589	100-YR	1200.00	386.27	392.60	390.93	393.12	0.003223	6.26	327.48	245.13	0.48
Plumtree	9589	7-30-2016	1333.00	386.27	392.89	391.32	393.38	0.002996	6.26	402.44	267.37	0.47
Plumtree	9499	1-YR	204.00	385.35	388.97		389.15	0.003898	3.51	70.65	50.97	0.44
Plumtree	9499	2-YR	321.00	385.35	389.75		389.92	0.002934	3.58	125.38	124.78	0.40
Plumtree	9499	10-YR	719.00	385.35	390.88		391.08	0.002582	4.32	294.26	158.77	0.40
Plumtree	9499	50-YR	1263.00	385.35	391.97		392.20	0.002314	4.88	474.75	171.09	0.40
Plumtree	9499	100-YR	1578.00	385.35	392.51		392.74	0.002216	5.13	567.74	175.97	0.40
Plumtree	9499	7-30-2016	1757.00	385.35	392.79		393.03	0.002177	5.27	617.40	178.49	0.40
Plumtree	9398	1-YR	204.00	384.42	388.37		388.70	0.004701	4.54	44.89	15.87	0.48
Plumtree	9398	2-YR	321.00	384.42	388.92	387.78	389.45	0.006779	5.86	65.41	97.70	0.58
Plumtree	9398	10-YR	719.00	384.42	390.45		390.76	0.003626	5.57	289.42	167.13	0.45
Plumtree	9398	50-YR	1263.00	384.42	391.67		391.93	0.002885	5.79	503.70	182.79	0.42
Plumtree	9398	100-YR	1578.00	384.42	392.22		392.49	0.002794	6.05	606.79	192.69	0.42
Plumtree	9398	7-30-2016	1757.00	384.42	392.51		392.78	0.002729	6.16	664.04	196.97	0.42
Plumtree	9301	1-YR	204.00	383.31	388.11		388.33	0.002680	3.80	62.04	32.60	0.37
Plumtree	9301	2-YR	321.00	383.31	388.50		388.89	0.004323	5.16	81.35	69.83	0.48
Plumtree	9301	10-YR	719.00	383.31	389.23	389.18	390.17	0.009143	8.49	142.78	91.28	0.72
Plumtree	9301	50-YR	1263.00	383.31	390.17	390.17	391.36	0.010478	10.35	232.10	100.36	0.80
Plumtree	9301	100-YR	1578.00	383.31	390.59	390.59	391.91	0.011035	11.19	275.72	104.50	0.83
Plumtree	9301	7-30-2016	1757.00	383.31	390.79	390.79	392.19	0.011514	11.69	296.68	106.44	0.85
Plumtree	9196	1-YR	204.00	383.81	387.40	387.40	387.81	0.010238	5.48	61.09	107.80	0.69
Plumtree	9196	2-YR	321.00	383.81	387.74	387.73	388.20	0.010946	6.21	99.99	121.59	0.73
Plumtree	9196	10-YR	719.00	383.81	388.82		389.17	0.006723	6.33	246.23	143.82	0.61
Plumtree	9196	50-YR	1263.00	383.81	389.79	389.01	390.16	0.005917	7.03	390.74	154.81	0.60
Plumtree	9196	100-YR	1578.00	383.81	390.24	389.28	390.64	0.005766	7.42	461.97	159.38	0.60
Plumtree	9196	7-30-2016	1757.00	383.81	390.48	389.44	390.89	0.005701	7.62	500.52	161.92	0.60
Plumtree	8987	1-YR	204.00	382.77	386.54	385.23	386.67	0.002345	3.34	119.75	115.30	0.34
Plumtree	8987	2-YR	321.00	382.77	387.00		387.15	0.002549	3.84	174.45	121.03	0.37
Plumtree	8987	10-YR	719.00	382.77	387.95		388.19	0.003433	5.25	295.29	132.81	0.44
Plumtree	8987	50-YR	1263.00	382.77	388.79		389.13	0.004364	6.66	410.83	141.71	0.52
Plumtree	8987	100-YR	1578.00	382.77	389.19		389.58	0.004762	7.31	467.81	145.45	0.54
Plumtree	8987	7-30-2016	1757.00	382.77	389.40		389.82	0.004958	7.64	498.21	147.40	0.56

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	8753	1-YR	204.00	381.99	385.24	385.24	385.66	0.009692	5.85	60.16	79.52	0.66
Plumtree	8753	2-YR	321.00	381.99	385.62	385.55	386.06	0.010043	6.55	91.63	87.32	0.69
Plumtree	8753	10-YR	719.00	381.99	386.73		387.08	0.006968	6.81	225.01	174.86	0.61
Plumtree	8753	50-YR	1263.00	381.99	387.83		388.07	0.004512	6.46	448.27	231.04	0.51
Plumtree	8753	100-YR	1578.00	381.99	388.33		388.55	0.003768	6.29	569.25	245.93	0.47
Plumtree	8753	7-30-2016	1757.00	381.99	388.59		388.80	0.003460	6.22	634.06	251.24	0.46
Plumtree	8579	1-YR	204.00	381.13	384.21	383.48	384.40	0.004728	4.12	88.21	90.48	0.48
Plumtree	8579	2-YR	321.00	381.13	384.75		384.94	0.003945	4.34	141.08	101.78	0.46
Plumtree	8579	10-YR	719.00	381.13	385.97		386.19	0.003546	5.22	276.06	121.09	0.46
Plumtree	8579	50-YR	1263.00	381.13	387.05		387.34	0.003765	6.30	417.89	143.41	0.49
Plumtree	8579	100-YR	1578.00	381.13	387.55		387.87	0.003821	6.76	491.56	151.07	0.50
Plumtree	8579	7-30-2016	1757.00	381.13	387.81		388.15	0.003835	6.98	531.31	154.43	0.51
Plumtree	8374	1-YR	204.00	380.31	383.79		383.88	0.001467	2.73	125.40	87.23	0.28
Plumtree	8374	2-YR	321.00	380.31	384.29		384.40	0.001770	3.25	170.67	94.20	0.32
Plumtree	8374	10-YR	719.00	380.31	385.42		385.60	0.002339	4.48	286.78	111.54	0.38
Plumtree	8374	50-YR	1263.00	380.31	386.39		386.67	0.002922	5.73	401.35	123.87	0.44
Plumtree	8374	100-YR	1578.00	380.31	386.83		387.17	0.003216	6.33	456.77	130.00	0.47
Plumtree	8374	7-30-2016	1757.00	380.31	387.05		387.42	0.003372	6.65	486.33	133.64	0.48
Plumtree	8229	1-YR	204.00	379.79	382.85	382.85	383.38	0.010607	6.43	55.07	65.24	0.72
Plumtree	8229	2-YR	321.00	379.79	383.45	383.29	383.89	0.008132	6.50	101.18	86.73	0.65
Plumtree	8229	10-YR	719.00	379.79	384.49		385.00	0.008173	7.90	206.91	116.46	0.68
Plumtree	8229	50-YR	1263.00	379.79	385.40		385.97	0.008374	9.13	323.88	136.34	0.72
Plumtree	8229	100-YR	1578.00	379.79	385.82		386.43	0.008442	9.66	381.90	142.15	0.73
Plumtree	8229	7-30-2016	1757.00	379.79	386.02		386.65	0.008655	10.01	410.04	144.93	0.74
Plumtree	8094	1-YR	204.00	378.24	381.72	380.86	382.12	0.007250	5.29	52.91	63.21	0.57
Plumtree	8094	2-YR	321.00	378.24	382.06	381.98	382.66	0.010033	6.70	79.41	93.32	0.68
Plumtree	8094	10-YR	719.00	378.24	382.97	382.97	383.69	0.011281	8.46	178.68	125.68	0.75
Plumtree	8094	50-YR	1263.00	378.24	383.69	383.69	384.56	0.012929	10.14	277.14	145.63	0.83
Plumtree	8094	100-YR	1578.00	378.24	384.01	384.01	384.96	0.013794	10.94	324.44	153.05	0.87
Plumtree	8094	7-30-2016	1757.00	378.24	384.19	384.19	385.16	0.013852	11.24	353.17	157.07	0.87
Plumtree	7954	1-YR	204.00	377.79	381.03	380.76	381.13	0.005744	3.86	126.50	155.83	0.50
Plumtree	7954	2-YR	321.00	377.79	381.31	380.96	381.43	0.006207	4.41	171.27	160.64	0.53
Plumtree	7954	10-YR	719.00	377.79	382.00	381.39	382.18	0.007361	5.77	285.71	176.79	0.60
Plumtree	7954	50-YR	1263.00	377.79	382.67	381.85	382.91	0.007889	6.89	408.30	187.44	0.65
Plumtree	7954	100-YR	1578.00	377.79	383.00	382.11	383.28	0.008071	7.39	470.73	192.59	0.66
Plumtree	7954	7-30-2016	1757.00	377.79	383.18	382.22	383.47	0.008151	7.65	504.36	195.26	0.67
Plumtree	7800	1-YR	204.00	378.73	379.84		379.92	0.011082	3.70	118.96	173.24	0.67
Plumtree	7800	2-YR	321.00	378.73	380.07		380.17	0.011140	4.28	159.11	178.65	0.70
Plumtree	7800	10-YR	719.00	378.73	380.71		380.87	0.009918	5.39	276.14	188.90	0.71
Plumtree	7800	50-YR	1263.00	378.73	381.37		381.59	0.009327	6.43	404.71	199.54	0.72
Plumtree	7800	100-YR	1578.00	378.73	381.70		381.94	0.009179	6.92	470.07	204.74	0.73
Plumtree	7800	7-30-2016	1757.00	378.73	381.87		382.13	0.009088	7.17	505.82	207.53	0.73
Plumtree	7548	1-YR	204.00	375.57	378.60		378.65	0.002822	3.01	196.75	273.00	0.37
Plumtree	7548	2-YR	321.00	375.57	378.91		378.95	0.002633	3.18	281.31	279.96	0.36
Plumtree	7548	10-YR	719.00	375.57	379.63		379.69	0.002594	3.76	490.44	297.62	0.37
Plumtree	7548	50-YR	1263.00	375.57	380.37		380.44	0.002516	4.26	717.13	311.71	0.38
Plumtree	7548	100-YR	1578.00	375.57	380.69		380.77	0.002622	4.59	816.80	316.02	0.39
Plumtree	7548	7-30-2016	1757.00	375.57	380.88		380.96	0.002620	4.72	875.48	318.47	0.40
Plumtree	7367	1-YR	204.00	378.30	377.68		377.74	0.010709		102.04	116.77	0.00
Plumtree	7367	2-YR	321.00	378.30	378.00		378.08	0.010875		144.59	149.00	0.00
Plumtree	7367	10-YR	719.00	378.30	378.74		378.85	0.009931	1.35	279.96	214.67	0.50
Plumtree	7367	50-YR	1263.00	378.30	379.52		379.63	0.010027	2.91	490.46	360.43	0.61
Plumtree	7367	100-YR	1578.00	378.30	379.94		380.04	0.006934	3.15	653.35	399.43	0.54
Plumtree	7367	7-30-2016	1757.00	378.30	380.22		380.31	0.005319	3.21	763.85	405.35	0.49
Plumtree	7216	1-YR	204.00	375.26	377.08	376.50	377.12	0.002049	1.88	169.34	193.43	0.30
Plumtree	7216	2-YR	321.00	375.26	377.38	376.67	377.43	0.002166	2.25	229.61	210.45	0.33
Plumtree	7216	10-YR	719.00	375.26	378.08	377.10	378.18	0.002465	3.10	391.09	246.54	0.37
Plumtree	7216	50-YR	1263.00	375.26	378.85	377.53	378.97	0.002376	3.72	588.32	271.50	0.38
Plumtree	7216	100-YR	1578.00	375.26	379.43	377.75	379.55	0.001835	3.69	753.22	289.75	0.35
Plumtree	7216	7-30-2016	1757.00	375.26	379.79	377.86	379.90	0.001573	3.64	857.81	300.65	0.33
Plumtree	7030	1-YR	204.00	373.43	376.00	376.00	376.26	0.015907	6.07	87.90	152.85	0.83
Plumtree	7030	2-YR	321.00	373.43	376.17	376.17	376.50	0.019508	7.18	114.64	158.76	0.94
Plumtree	7030	10-YR	719.00	373.43	376.62	376.62	377.07	0.024514	9.31	189.75	177.07	1.09
Plumtree	7030	50-YR	1263.00	373.43	378.27		378.40	0.004006	5.42	523.14	218.64	0.48
Plumtree	7030	100-YR	1578.00	373.43	379.03		379.14	0.002676	4.98	692.38	228.56	0.41
Plumtree	7030	7-30-2016	1757.00	373.43	379.45		379.55	0.002236	4.82	789.22	234.17	0.38

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	6893	1-YR	204.00	370.68	374.15	373.50	374.35	0.005075	4.00	89.37	107.64	0.50
Plumtree	6893	2-YR	321.00	370.68	374.61	373.69	374.80	0.004410	4.28	143.06	126.30	0.48
Plumtree	6893	10-YR	719.00	370.68	376.15	374.86	376.27	0.001975	3.96	378.53	174.83	0.35
Plumtree	6893	50-YR	1263.00	370.68	378.07		378.15	0.000958	3.58	758.98	221.76	0.26
Plumtree	6893	100-YR	1578.00	370.68	378.86		378.94	0.000825	3.62	940.67	236.27	0.25
Plumtree	6893	7-30-2016	1757.00	370.68	379.29		379.37	0.000765	3.63	1045.11	244.53	0.24
Plumtree	6766	1-YR	204.00	369.76	373.53		373.71	0.004896	3.69	83.76	96.97	0.48
Plumtree	6766	2-YR	321.00	369.76	374.21		374.35	0.002811	3.46	156.35	114.80	0.39
Plumtree	6766	10-YR	719.00	369.76	375.96		376.06	0.001325	3.39	424.29	195.27	0.29
Plumtree	6766	50-YR	1263.00	369.76	377.98		378.05	0.000639	3.05	882.92	260.16	0.22
Plumtree	6766	100-YR	1578.00	369.76	378.78		378.85	0.000574	3.14	1104.19	290.44	0.21
Plumtree	6766	7-30-2016	1757.00	369.76	379.22		379.29	0.000550	3.20	1238.63	316.42	0.21
Plumtree	6663	1-YR	204.00	369.26	373.20		373.36	0.002436	3.36	80.58	80.58	0.35
Plumtree	6663	2-YR	321.00	369.26	373.95		374.10	0.001962	3.51	152.21	111.06	0.33
Plumtree	6663	10-YR	719.00	369.26	375.84		375.94	0.001013	3.37	457.96	201.12	0.26
Plumtree	6663	50-YR	1263.00	369.26	377.92		377.98	0.000529	3.02	1001.33	312.61	0.19
Plumtree	6663	100-YR	1578.00	369.26	378.74		378.79	0.000448	2.98	1264.60	332.19	0.18
Plumtree	6663	7-30-2016	1757.00	369.26	379.18		379.24	0.000411	2.95	1413.90	340.25	0.18
Plumtree	6568	1-YR	209.00	368.65	372.80		373.07	0.003824	4.34	66.65	56.98	0.42
Plumtree	6568	2-YR	334.00	368.65	373.61		373.86	0.003229	4.62	131.15	100.52	0.40
Plumtree	6568	10-YR	772.00	368.65	375.70		375.83	0.001465	4.11	439.73	191.60	0.29
Plumtree	6568	50-YR	1391.00	368.65	377.85		377.92	0.000754	3.60	934.24	263.96	0.22
Plumtree	6568	100-YR	1736.00	368.65	378.67		378.74	0.000659	3.58	1159.85	283.29	0.21
Plumtree	6568	7-30-2016	2002.00	368.65	379.11		379.18	0.000664	3.71	1286.63	293.81	0.21
Plumtree	6454	1-YR	209.00	368.30	372.22		372.52	0.005995	4.41	48.92	31.98	0.54
Plumtree	6454	2-YR	334.00	368.30	373.12		373.44	0.004146	4.67	88.18	57.90	0.48
Plumtree	6454	10-YR	772.00	368.30	375.52		375.67	0.001276	3.85	405.51	179.24	0.29
Plumtree	6454	50-YR	1391.00	368.30	377.75		377.84	0.000650	3.46	836.95	205.15	0.22
Plumtree	6454	100-YR	1736.00	368.30	378.57		378.67	0.000606	3.58	1018.74	236.23	0.22
Plumtree	6454	7-30-2016	2002.00	368.30	379.01		379.11	0.000629	3.77	1124.45	252.48	0.22
Plumtree	6350	1-YR	209.00	366.97	371.96	370.05	372.12	0.002289	3.16	66.04	24.12	0.34
Plumtree	6350	2-YR	334.00	366.97	372.86	370.82	373.07	0.002547	3.74	89.28	28.18	0.37
Plumtree	6350	10-YR	772.00	366.97	375.14	372.46	375.48	0.002125	4.77	190.93	67.73	0.36
Plumtree	6350	50-YR	1391.00	366.97	377.35	374.07	377.71	0.001632	5.27	409.11	136.14	0.34
Plumtree	6350	100-YR	1736.00	366.97	378.17	374.85	378.54	0.001553	5.51	538.98	207.88	0.34
Plumtree	6350	7-30-2016	2002.00	366.97	378.57	375.41	378.98	0.001645	5.84	614.80	225.55	0.35
Plumtree	6296	1-YR	209.00	367.41	371.60	370.57	371.92	0.005137	4.77	52.95	24.21	0.48
Plumtree	6296	2-YR	334.00	367.41	372.42	371.29	372.86	0.005407	5.68	74.74	29.08	0.51
Plumtree	6296	10-YR	772.00	367.41	374.65	373.00	375.29	0.004758	7.25	155.73	43.62	0.52
Plumtree	6296	50-YR	1391.00	367.41	376.80	374.71	377.55	0.004152	8.30	272.73	104.38	0.51
Plumtree	6296	100-YR	1736.00	367.41	377.54	375.85	378.37	0.004457	9.11	396.36	126.45	0.54
Plumtree	6296	7-30-2016	2002.00	367.41	377.88	376.25	378.79	0.004832	9.72	440.63	137.09	0.56
Plumtree	6250 Hearthstone Rd		Bridge									
Plumtree	6197	1-YR	209.00	366.39	371.05	368.06	371.11	0.000479	1.92	110.44	30.76	0.17
Plumtree	6197	2-YR	334.00	366.39	372.00	368.60	372.09	0.000589	2.46	140.79	33.44	0.20
Plumtree	6197	10-YR	772.00	366.39	373.86	370.01	374.10	0.001035	4.04	207.93	38.73	0.27
Plumtree	6197	50-YR	1391.00	366.39	375.30	371.43	375.83	0.001707	5.91	269.19	61.83	0.36
Plumtree	6197	100-YR	1736.00	366.39	375.92	372.13	376.60	0.002044	6.78	318.30	78.02	0.40
Plumtree	6197	7-30-2016	2002.00	366.39	376.34	372.64	377.14	0.002289	7.40	354.81	102.83	0.43
Plumtree	6122	1-YR	209.00	366.62	369.72	369.68	370.72	0.023191	8.01	26.08	12.76	0.99
Plumtree	6122	2-YR	334.00	366.62	370.60	370.60	371.67	0.021614	8.28	40.58	24.91	0.99
Plumtree	6122	10-YR	772.00	366.62	372.25	372.25	373.59	0.014182	9.75	101.86	45.52	0.88
Plumtree	6122	50-YR	1391.00	366.62	373.71	373.71	375.25	0.011977	11.12	185.68	77.96	0.85
Plumtree	6122	100-YR	1736.00	366.62	374.24	374.24	375.97	0.012288	12.00	219.27	86.02	0.88
Plumtree	6122	7-30-2016	2002.00	366.62	374.61	374.61	376.49	0.012534	12.63	243.03	89.74	0.90
Plumtree	6028	1-YR	209.00	365.53	369.80	368.84	369.93	0.002413	3.27	97.45	72.61	0.36
Plumtree	6028	2-YR	334.00	365.53	370.52	369.37	370.67	0.002084	3.58	156.61	90.53	0.35
Plumtree	6028	10-YR	772.00	365.53	372.18	370.39	372.36	0.001815	4.38	343.94	137.62	0.35
Plumtree	6028	50-YR	1391.00	365.53	373.60	371.34	373.80	0.001714	5.03	567.03	203.79	0.35
Plumtree	6028	100-YR	1736.00	365.53	374.18	371.79	374.40	0.001723	5.35	667.23	216.60	0.36
Plumtree	6028	7-30-2016	2002.00	365.53	374.58	372.05	374.81	0.001731	5.56	739.74	225.74	0.36
Plumtree	5926	1-YR	209.00	365.38	369.23	368.48	369.55	0.005769	5.12	59.36	37.61	0.53
Plumtree	5926	2-YR	334.00	365.38	369.89	369.08	370.31	0.006076	6.03	89.72	58.85	0.56
Plumtree	5926	10-YR	772.00	365.38	371.58	370.49	372.05	0.004976	7.08	207.78	145.59	0.54
Plumtree	5926	50-YR	1391.00	365.38	372.96	371.84	373.49	0.004864	8.17	337.75	161.34	0.56
Plumtree	5926	100-YR	1736.00	365.38	373.46	372.25	374.08	0.005241	8.91	390.19	166.47	0.59
Plumtree	5926	7-30-2016	2002.00	365.38	373.81	372.56	374.48	0.005497	9.42	427.92	170.00	0.61

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5824	1-YR	209.00	365.08	367.70	367.70	368.47	0.021927	7.07	29.58	19.41	1.01
Plumtree	5824	2-YR	334.00	365.08	368.40	368.35	369.25	0.018900	7.37	45.31	25.03	0.97
Plumtree	5824	10-YR	772.00	365.08	371.14		371.61	0.003711	5.70	179.65	107.30	0.49
Plumtree	5824	50-YR	1391.00	365.08	372.65		373.09	0.002835	6.12	398.18	163.08	0.45
Plumtree	5824	100-YR	1736.00	365.08	373.18		373.65	0.002802	6.46	486.89	168.67	0.46
Plumtree	5824	7-30-2016	2002.00	365.08	373.55		374.03	0.002792	6.70	549.92	172.52	0.46
Plumtree	5745	1-YR	209.00	363.03	366.95	366.10	367.31	0.006620	4.79	43.68	20.00	0.57
Plumtree	5745	2-YR	334.00	363.03	368.01	366.79	368.40	0.005246	4.97	67.23	24.38	0.53
Plumtree	5745	10-YR	772.00	363.03	371.02	368.46	371.35	0.002056	4.80	196.24	86.25	0.37
Plumtree	5745	50-YR	1391.00	363.03	372.28	370.09	372.86	0.002823	6.49	290.46	103.08	0.45
Plumtree	5745	100-YR	1736.00	363.03	372.59	370.82	373.37	0.003641	7.60	315.94	108.78	0.51
Plumtree	5745	7-30-2016	2002.00	363.03	372.76	371.32	373.71	0.004383	8.47	330.20	113.79	0.56
Plumtree	5711	1-YR	209.00	362.51	366.90	365.32	367.11	0.003163	3.73	56.09	21.22	0.40
Plumtree	5711	2-YR	334.00	362.51	367.97	366.07	368.23	0.002904	4.14	81.55	28.70	0.40
Plumtree	5711	10-YR	772.00	362.51	371.01	367.80	371.27	0.001412	4.30	237.80	76.54	0.31
Plumtree	5711	50-YR	1391.00	362.51	372.27	369.56	372.74	0.002151	6.02	354.77	129.55	0.39
Plumtree	5711	100-YR	1736.00	362.51	372.56	370.31	373.22	0.002860	7.13	396.86	152.72	0.46
Plumtree	5711	7-30-2016	2002.00	362.51	372.73	370.79	373.54	0.003439	7.93	423.22	161.35	0.50
Plumtree	5650 Brookmede Rd		Bridge									
Plumtree	5614	1-YR	209.00	361.81	366.73	364.14	366.80	0.000832	2.19	95.49	30.34	0.22
Plumtree	5614	2-YR	334.00	361.81	367.78	364.75	367.88	0.000841	2.57	137.35	53.35	0.23
Plumtree	5614	10-YR	772.00	361.81	369.98	366.23	370.14	0.000860	3.42	306.80	120.21	0.25
Plumtree	5614	50-YR	1391.00	361.81	371.47	367.78	371.69	0.001013	4.30	548.88	182.13	0.28
Plumtree	5614	100-YR	1736.00	361.81	372.07	368.41	372.33	0.001087	4.69	664.73	203.53	0.29
Plumtree	5614	7-30-2016	2002.00	361.81	372.48	368.81	372.76	0.001134	4.95	750.49	214.09	0.30
Plumtree	5560	1-YR	209.00	362.08	366.63		366.74	0.001389	2.66	78.61	26.15	0.27
Plumtree	5560	2-YR	334.00	362.08	367.66		367.81	0.001371	3.08	115.81	58.89	0.28
Plumtree	5560	10-YR	772.00	362.08	369.93		370.09	0.000983	3.57	371.70	166.37	0.26
Plumtree	5560	50-YR	1391.00	362.08	371.43		371.61	0.001001	4.18	713.11	278.54	0.27
Plumtree	5560	100-YR	1736.00	362.08	372.05		372.23	0.000967	4.33	894.29	304.52	0.27
Plumtree	5560	7-30-2016	2002.00	362.08	372.48		372.65	0.000930	4.39	1025.61	311.35	0.26
Plumtree	5510	1-YR	209.00	362.16	366.24	365.15	366.59	0.005688	4.73	44.17	17.61	0.53
Plumtree	5510	2-YR	334.00	362.16	367.22	365.92	367.66	0.005582	5.31	62.92	20.63	0.54
Plumtree	5510	10-YR	772.00	362.16	369.41	367.79	369.96	0.004019	6.25	167.91	125.30	0.49
Plumtree	5510	50-YR	1391.00	362.16	370.83	369.75	371.49	0.004005	7.37	349.63	213.90	0.51
Plumtree	5510	100-YR	1736.00	362.16	371.53	370.70	372.11	0.003431	7.32	467.95	227.27	0.48
Plumtree	5510	7-30-2016	2002.00	362.16	371.96	370.96	372.53	0.003310	7.48	546.39	242.31	0.48
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	209.00	361.52	366.16	364.20	366.35	0.002414	3.47	60.24	19.99	0.35
Plumtree	5474	2-YR	334.00	361.52	367.11	364.96	367.37	0.002823	4.15	80.51	22.80	0.39
Plumtree	5474	10-YR	772.00	361.52	368.91	366.82	369.43	0.003534	5.93	159.32	72.38	0.46
Plumtree	5474	50-YR	1391.00	361.52	371.03	368.93	371.45	0.002252	5.96	426.48	169.80	0.39
Plumtree	5474	100-YR	1736.00	361.52	371.63	369.78	372.07	0.002274	6.31	532.65	185.53	0.40
Plumtree	5474	7-30-2016	2002.00	361.52	372.04	370.28	372.49	0.002304	6.57	610.46	199.33	0.40
Plumtree	5419	1-YR	209.00	361.46	365.95	364.24	366.18	0.003099	3.87	53.96	17.98	0.39
Plumtree	5419	2-YR	334.00	361.46	366.82	365.00	367.17	0.003815	4.74	70.52	20.02	0.44
Plumtree	5419	10-YR	772.00	361.46	368.30	366.90	369.10	0.005923	7.31	129.36	105.08	0.58
Plumtree	5419	50-YR	1391.00	361.46	370.91	369.36	371.32	0.002335	6.11	429.96	187.05	0.39
Plumtree	5419	100-YR	1736.00	361.46	371.49	369.91	371.94	0.002454	6.58	519.12	202.54	0.41
Plumtree	5419	7-30-2016	2002.00	361.46	371.87	370.30	372.35	0.002560	6.93	582.88	214.62	0.42
Plumtree	5323	1-YR	209.00	361.32	365.60		365.86	0.003800	4.06	52.06	26.85	0.43
Plumtree	5323	2-YR	334.00	361.32	366.52		366.81	0.003459	4.47	95.88	59.83	0.42
Plumtree	5323	10-YR	772.00	361.32	368.20		368.57	0.003186	5.58	229.06	101.01	0.43
Plumtree	5323	50-YR	1391.00	361.32	370.90		371.10	0.001261	4.65	577.09	147.48	0.29
Plumtree	5323	100-YR	1736.00	361.32	371.48		371.70	0.001385	5.11	664.20	155.37	0.31
Plumtree	5323	7-30-2016	2002.00	361.32	371.85		372.10	0.001489	5.45	723.08	160.09	0.32
Plumtree	5209	1-YR	209.00	361.10	364.78	363.87	365.24	0.007516	5.42	38.55	14.93	0.59
Plumtree	5209	2-YR	334.00	361.10	365.64	364.69	366.23	0.007171	6.26	63.93	49.67	0.61
Plumtree	5209	10-YR	772.00	361.10	367.77	366.77	368.18	0.003577	6.15	234.40	104.81	0.46
Plumtree	5209	50-YR	1391.00	361.10	370.79	367.88	370.95	0.001092	4.56	649.10	161.69	0.28
Plumtree	5209	100-YR	1736.00	361.10	371.36	368.36	371.54	0.001190	4.97	743.25	174.37	0.29
Plumtree	5209	7-30-2016	2002.00	361.10	371.73	368.67	371.93	0.001275	5.28	807.76	182.50	0.30
Plumtree	5107	1-YR	209.00	359.92	363.90	363.13	364.39	0.009304	5.62	37.20	16.32	0.66
Plumtree	5107	2-YR	334.00	359.92	364.77	364.00	365.39	0.009543	6.30	53.03	20.13	0.68
Plumtree	5107	10-YR	772.00	359.92	366.78	365.89	367.62	0.007602	7.53	117.96	44.78	0.65

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5107	50-YR	1391.00	359.92	370.32	367.56	370.77	0.002122	5.93	327.26	155.82	0.38
Plumtree	5107	100-YR	1736.00	359.92	370.76	368.16	371.33	0.002584	6.80	382.35	211.10	0.43
Plumtree	5107	7-30-2016	2002.00	359.92	371.02	368.59	371.69	0.002960	7.43	419.20	224.89	0.46
Plumtree	5040	1-YR	209.00	359.23	363.57	362.44	363.88	0.005132	4.48	46.67	19.13	0.51
Plumtree	5040	2-YR	334.00	359.23	364.43	363.18	364.85	0.005488	5.18	64.44	22.23	0.54
Plumtree	5040	10-YR	772.00	359.23	366.46	364.95	367.14	0.005540	6.63	116.84	29.51	0.57
Plumtree	5040	50-YR	1391.00	359.23	370.08	366.56	370.62	0.002019	6.06	318.68	176.49	0.38
Plumtree	5040	100-YR	1736.00	359.23	370.48	367.27	371.15	0.002457	6.91	393.71	201.76	0.43
Plumtree	5040	7-30-2016	2002.00	359.23	370.70	367.78	371.49	0.002822	7.54	440.71	213.31	0.46
Plumtree	5000 Longview Dr		Bridge									
Plumtree	4932	1-YR	209.00	359.04	362.04	361.42	362.45	0.008247	5.18	40.32	19.65	0.64
Plumtree	4932	2-YR	334.00	359.04	362.92	362.07	363.42	0.007246	5.67	58.91	22.51	0.62
Plumtree	4932	10-YR	772.00	359.04	364.73	363.70	365.58	0.006974	7.43	105.04	40.79	0.65
Plumtree	4932	50-YR	1391.00	359.04	366.21	365.21	367.40	0.006901	9.09	181.61	44.51	0.68
Plumtree	4932	100-YR	1736.00	359.04	366.95	366.01	368.32	0.006781	9.80	215.42	46.38	0.69
Plumtree	4932	7-30-2016	2002.00	359.04	367.51	366.37	368.98	0.006611	10.24	241.64	47.77	0.69
Plumtree	4845	1-YR	209.00	357.81	361.69	360.24	361.92	0.003403	3.93	53.20	19.40	0.42
Plumtree	4845	2-YR	334.00	357.81	362.54	360.93	362.89	0.003952	4.73	70.66	21.53	0.46
Plumtree	4845	10-YR	772.00	357.81	364.23	362.69	364.97	0.005792	6.93	119.13	72.58	0.58
Plumtree	4845	50-YR	1391.00	357.81	365.80	364.94	366.71	0.005885	8.11	227.09	96.54	0.60
Plumtree	4845	100-YR	1736.00	357.81	366.71	365.55	367.57	0.004835	8.13	296.90	107.66	0.56
Plumtree	4845	7-30-2016	2002.00	357.81	367.38	365.93	368.21	0.004238	8.12	352.80	113.78	0.53
Plumtree	4745	1-YR	209.00	357.45	361.27		361.52	0.004775	4.03	51.89	23.91	0.48
Plumtree	4745	2-YR	334.00	357.45	362.14		362.45	0.004556	4.48	74.53	28.30	0.49
Plumtree	4745	10-YR	772.00	357.45	364.01		364.42	0.003636	5.36	192.94	127.91	0.47
Plumtree	4745	50-YR	1391.00	357.45	365.96		366.22	0.001738	4.81	540.66	211.01	0.35
Plumtree	4745	100-YR	1736.00	357.45	366.96		367.15	0.001233	4.49	762.70	236.13	0.30
Plumtree	4745	7-30-2016	2002.00	357.45	367.65		367.82	0.001013	4.33	932.65	253.05	0.27
Plumtree	4636	1-YR	209.00	357.61	360.93		361.12	0.002753	3.50	59.69	22.30	0.38
Plumtree	4636	2-YR	334.00	357.61	361.75		362.03	0.003160	4.24	78.84	24.13	0.41
Plumtree	4636	10-YR	772.00	357.61	363.73		364.08	0.002540	5.12	260.90	183.54	0.40
Plumtree	4636	50-YR	1391.00	357.61	365.89		366.05	0.001056	4.17	726.09	251.38	0.27
Plumtree	4636	100-YR	1736.00	357.61	366.91		367.03	0.000779	3.90	1003.33	289.17	0.24
Plumtree	4636	7-30-2016	2002.00	357.61	367.61		367.72	0.000652	3.77	1215.93	327.63	0.22
Plumtree	4550	1-YR	209.00	357.24	360.58	359.44	360.83	0.004099	3.96	52.72	23.05	0.46
Plumtree	4550	2-YR	334.00	357.24	361.38	360.09	361.71	0.004397	4.62	72.34	26.38	0.49
Plumtree	4550	10-YR	772.00	357.24	363.24	361.66	363.78	0.004178	5.95	139.34	176.31	0.51
Plumtree	4550	50-YR	1391.00	357.24	365.13	363.21	365.84	0.003511	6.99	234.87	255.53	0.50
Plumtree	4550	100-YR	1736.00	357.24	366.09	363.83	366.85	0.003163	7.32	299.03	293.94	0.49
Plumtree	4550	7-30-2016	2002.00	357.24	366.80	364.29	367.55	0.002846	7.40	355.89	327.49	0.47
Plumtree	4400 US 40		Bridge									
Plumtree	4344	1-YR	209.00	351.69	359.43	354.77	359.47	0.000250	1.52	137.65	27.67	0.12
Plumtree	4344	2-YR	334.00	351.69	360.24	355.38	360.31	0.000415	2.08	160.48	28.92	0.16
Plumtree	4344	10-YR	772.00	351.69	361.81	357.00	362.02	0.000987	3.70	218.05	57.90	0.25
Plumtree	4344	50-YR	1391.00	351.69	363.04	358.66	363.50	0.001769	5.52	280.51	116.12	0.34
Plumtree	4344	100-YR	1736.00	351.69	363.63	359.42	364.23	0.002129	6.35	310.38	130.78	0.38
Plumtree	4344	7-30-2016	2002.00	351.69	364.24	359.97	364.91	0.002195	6.74	341.76	143.76	0.39
Plumtree	4289	1-YR	209.00	352.78	359.42		359.45	0.000258	1.45	144.49	33.55	0.12
Plumtree	4289	2-YR	334.00	352.78	360.22		360.28	0.000409	1.94	172.55	36.52	0.16
Plumtree	4289	10-YR	772.00	352.78	361.78		361.95	0.000867	3.28	262.72	115.32	0.24
Plumtree	4289	50-YR	1391.00	352.78	363.05		363.33	0.001244	4.46	442.26	163.20	0.29
Plumtree	4289	100-YR	1736.00	352.78	363.68		363.99	0.001303	4.83	549.76	175.86	0.30
Plumtree	4289	7-30-2016	2002.00	352.78	364.34		364.64	0.001179	4.85	669.85	191.07	0.29
Plumtree	4185	1-YR	194.00	354.77	359.13		359.37	0.004166	3.91	49.58	21.83	0.46
Plumtree	4185	2-YR	295.00	354.77	359.85		360.16	0.004244	4.45	66.28	24.22	0.47
Plumtree	4185	10-YR	741.00	354.77	361.18	360.72	361.73	0.005721	6.35	179.64	132.05	0.58
Plumtree	4185	50-YR	1395.00	354.77	362.80		363.14	0.003015	5.85	490.59	234.77	0.45
Plumtree	4185	100-YR	1765.00	354.77	363.52		363.81	0.002396	5.68	672.09	266.10	0.41
Plumtree	4185	7-30-2016	2157.00	354.77	364.22		364.47	0.001948	5.51	868.85	291.29	0.37
Plumtree	4033	1-YR	194.00	355.05	358.59		358.80	0.003217	3.69	52.62	20.78	0.41
Plumtree	4033	2-YR	295.00	355.05	359.34		359.59	0.003174	4.14	90.75	99.21	0.42
Plumtree	4033	10-YR	741.00	355.05	360.86		361.09	0.002441	4.71	307.15	173.30	0.39
Plumtree	4033	50-YR	1395.00	355.05	362.55		362.75	0.001740	4.91	673.73	288.90	0.35
Plumtree	4033	100-YR	1765.00	355.05	363.35		363.50	0.001308	4.61	911.41	308.29	0.31
Plumtree	4033	7-30-2016	2157.00	355.05	364.09		364.22	0.001075	4.47	1145.32	325.39	0.28

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	3930	1-YR	194.00	354.49	357.92	357.18	358.31	0.007204	5.04	38.81	19.97	0.60
Plumtree	3930	2-YR	295.00	354.49	358.60	357.79	359.10	0.006977	5.72	54.88	27.14	0.61
Plumtree	3930	10-YR	741.00	354.49	360.54	359.88	360.81	0.002900	5.26	312.89	196.45	0.43
Plumtree	3930	50-YR	1395.00	354.49	362.45	360.71	362.58	0.001279	4.39	729.52	238.51	0.30
Plumtree	3930	100-YR	1765.00	354.49	363.25	361.01	363.37	0.001076	4.35	927.78	254.26	0.28
Plumtree	3930	7-30-2016	2157.00	354.49	363.99	361.30	364.11	0.000944	4.35	1120.13	267.70	0.27
Plumtree	3816	1-YR	194.00	353.49	357.45	356.09	357.70	0.003692	4.04	52.73	31.92	0.43
Plumtree	3816	2-YR	295.00	353.49	358.23	356.72	358.51	0.003246	4.45	89.51	64.51	0.42
Plumtree	3816	10-YR	741.00	353.49	360.32	358.81	360.53	0.001861	4.62	332.75	154.14	0.35
Plumtree	3816	50-YR	1395.00	353.49	362.29	360.02	362.44	0.001136	4.42	681.97	209.95	0.28
Plumtree	3816	100-YR	1765.00	353.49	363.11	360.43	363.25	0.001015	4.47	833.89	226.37	0.27
Plumtree	3816	7-30-2016	2157.00	353.49	363.86	360.80	364.00	0.000955	4.59	973.02	233.98	0.27
Plumtree	3688	1-YR	194.00	352.86	357.04	355.33	357.27	0.002883	3.85	52.56	27.11	0.38
Plumtree	3688	2-YR	295.00	352.86	357.83	355.99	358.12	0.002874	4.45	85.45	56.84	0.39
Plumtree	3688	10-YR	741.00	352.86	360.00	358.41	360.28	0.002075	5.06	290.41	127.64	0.36
Plumtree	3688	50-YR	1395.00	352.86	362.06	359.76	362.27	0.001427	5.09	606.92	180.41	0.31
Plumtree	3688	100-YR	1765.00	352.86	362.91	360.27	363.10	0.001267	5.12	758.24	190.93	0.30
Plumtree	3688	7-30-2016	2157.00	352.86	363.67	360.71	363.86	0.001191	5.24	898.75	200.87	0.29
Plumtree	3550	1-YR	194.00	352.85	356.61	355.13	356.82	0.003681	3.69	53.23	26.45	0.43
Plumtree	3550	2-YR	295.00	352.85	357.46	355.87	357.71	0.002937	4.01	81.30	42.74	0.40
Plumtree	3550	10-YR	741.00	352.85	359.69	357.67	359.98	0.002105	4.85	245.97	106.80	0.37
Plumtree	3550	50-YR	1395.00	352.85	361.81	359.30	362.07	0.001437	5.01	506.64	153.51	0.32
Plumtree	3550	100-YR	1765.00	352.85	362.65	360.04	362.91	0.001377	5.26	619.29	168.54	0.32
Plumtree	3550	7-30-2016	2157.00	352.85	363.38	360.47	363.67	0.001386	5.59	723.96	187.44	0.33
Plumtree	3428	1-YR	194.00	351.86	356.18	354.43	356.42	0.002960	3.91	51.96	22.14	0.38
Plumtree	3428	2-YR	295.00	351.86	357.01	355.11	357.33	0.003199	4.56	73.55	29.32	0.41
Plumtree	3428	10-YR	741.00	351.86	359.07	357.34	359.63	0.003683	6.47	165.60	61.47	0.47
Plumtree	3428	50-YR	1395.00	351.86	361.18	359.36	361.79	0.003163	7.35	316.37	98.52	0.46
Plumtree	3428	100-YR	1765.00	351.86	361.96	360.02	362.63	0.003246	7.92	385.87	112.71	0.47
Plumtree	3428	7-30-2016	2157.00	351.86	362.65	360.65	363.38	0.003323	8.43	454.52	123.38	0.48
Plumtree	3296	1-YR	194.00	351.72	355.80		356.02	0.003004	3.79	51.22	16.70	0.38
Plumtree	3296	2-YR	295.00	351.72	356.53		356.86	0.003929	4.57	64.59	19.59	0.44
Plumtree	3296	10-YR	741.00	351.72	358.01		358.87	0.008853	7.47	99.18	27.52	0.69
Plumtree	3296	50-YR	1395.00	351.72	359.90	358.79	361.11	0.007437	8.94	180.75	80.09	0.68
Plumtree	3296	100-YR	1765.00	351.72	360.30	359.75	361.87	0.008959	10.29	215.05	93.23	0.75
Plumtree	3296	7-30-2016	2157.00	351.72	360.77	360.77	362.58	0.009571	11.21	264.04	111.54	0.79
Plumtree	3179	1-YR	194.00	350.39	355.52	353.81	355.66	0.002701	2.97	65.43	29.86	0.35
Plumtree	3179	2-YR	295.00	350.39	356.20	354.39	356.36	0.003649	3.21	91.88	48.96	0.41
Plumtree	3179	10-YR	741.00	350.39	357.91	356.25	358.17	0.002663	4.17	189.77	72.82	0.39
Plumtree	3179	50-YR	1395.00	350.39	360.26	357.30	360.50	0.001381	4.21	437.58	151.18	0.30
Plumtree	3179	100-YR	1765.00	350.39	360.83	357.85	361.13	0.001526	4.70	506.92	158.97	0.32
Plumtree	3179	7-30-2016	2157.00	350.39	361.12	358.38	361.50	0.001916	5.42	542.38	162.72	0.37
Plumtree	3077	1-YR	194.00	350.72	355.21		355.36	0.003079	3.15	68.32	75.39	0.38
Plumtree	3077	2-YR	295.00	350.72	355.96		356.09	0.001960	3.05	143.30	119.52	0.32
Plumtree	3077	10-YR	741.00	350.72	357.86		357.96	0.001045	3.15	433.41	174.51	0.26
Plumtree	3077	50-YR	1395.00	350.72	360.30		360.37	0.000535	2.97	895.23	208.14	0.20
Plumtree	3077	100-YR	1765.00	350.72	360.88		360.97	0.000631	3.40	1022.96	230.14	0.22
Plumtree	3077	7-30-2016	2157.00	350.72	361.18		361.30	0.000797	3.92	1094.64	238.42	0.24
Plumtree	2978	1-YR	194.00	350.53	354.90	352.93	355.07	0.002908	3.30	58.80	24.50	0.38
Plumtree	2978	2-YR	295.00	350.53	355.62	353.66	355.84	0.003064	3.77	79.01	32.08	0.40
Plumtree	2978	10-YR	741.00	350.53	357.29	355.64	357.75	0.003720	5.58	157.94	67.06	0.47
Plumtree	2978	50-YR	1395.00	350.53	359.85	357.37	360.24	0.001993	5.56	377.53	127.21	0.37
Plumtree	2978	100-YR	1765.00	350.53	360.33	357.99	360.82	0.002374	6.35	441.12	142.58	0.41
Plumtree	2978	7-30-2016	2157.00	350.53	360.38	358.59	361.10	0.003426	7.66	449.13	144.68	0.49
Plumtree	2917	1-YR	194.00	350.36	354.70	352.82	354.89	0.002924	3.50	55.41	20.80	0.38
Plumtree	2917	2-YR	295.00	350.36	355.35	353.56	355.62	0.004218	4.12	71.61	28.87	0.46
Plumtree	2917	10-YR	741.00	350.36	356.92	355.69	357.48	0.005066	6.01	133.58	50.77	0.54
Plumtree	2917	50-YR	1395.00	350.36	359.77	357.13	360.11	0.001820	5.23	482.46	237.64	0.36
Plumtree	2917	100-YR	1765.00	350.36	360.29	357.92	360.65	0.001903	5.62	609.99	254.62	0.37
Plumtree	2917	7-30-2016	2157.00	350.36	360.33	358.60	360.86	0.002755	6.79	619.95	255.85	0.45
Plumtree	2900 Frederick Rd		Bridge									
Plumtree	2827	1-YR	194.00	350.08	354.23	353.52	354.48	0.007196	4.05	48.48	35.30	0.57
Plumtree	2827	2-YR	295.00	350.08	354.88	354.08	355.15	0.005011	4.22	74.03	58.20	0.51
Plumtree	2827	10-YR	741.00	350.08	356.04	355.31	356.68	0.006890	6.60	127.69	123.18	0.64
Plumtree	2827	50-YR	1395.00	350.08	357.25	356.53	357.76	0.004757	6.74	366.06	167.47	0.56
Plumtree	2827	100-YR	1765.00	350.08	357.71	356.93	358.27	0.004799	7.23	447.05	180.62	0.57
Plumtree	2827	7-30-2016	2157.00	350.08	358.17	357.30	358.75	0.004711	7.59	532.77	191.93	0.57

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	2759	1-YR	194.00	349.32	354.01		354.20	0.002303	3.53	60.63	38.10	0.32
Plumtree	2759	2-YR	295.00	349.32	354.65		354.90	0.002644	4.21	105.51	102.66	0.36
Plumtree	2759	10-YR	741.00	349.32	355.89		356.20	0.003356	5.61	292.40	183.88	0.42
Plumtree	2759	50-YR	1395.00	349.32	357.12		357.39	0.002978	6.04	552.04	234.40	0.41
Plumtree	2759	100-YR	1765.00	349.32	357.60		357.88	0.002992	6.34	669.71	251.48	0.41
Plumtree	2759	7-30-2016	2157.00	349.32	358.08		358.35	0.002928	6.54	793.97	267.31	0.41
Plumtree	2589	1-YR	194.00	349.71	353.61		353.74	0.002925	3.59	99.38	67.53	0.36
Plumtree	2589	2-YR	295.00	349.71	354.29		354.42	0.002643	3.83	157.33	107.81	0.35
Plumtree	2589	10-YR	741.00	349.71	355.38		355.57	0.003679	5.37	303.05	153.99	0.43
Plumtree	2589	50-YR	1395.00	349.71	356.49		356.77	0.004617	6.91	508.37	230.38	0.50
Plumtree	2589	100-YR	1765.00	349.71	357.03		357.28	0.004134	6.92	635.35	247.37	0.48
Plumtree	2589	7-30-2016	2157.00	349.71	357.55		357.79	0.003720	6.92	769.08	263.57	0.46
Plumtree	2485	1-YR	194.00	349.20	352.27	352.17	353.06	0.016590	7.27	30.07	22.59	0.85
Plumtree	2485	2-YR	295.00	349.20	352.96	352.80	353.81	0.013429	7.80	51.13	38.34	0.80
Plumtree	2485	10-YR	741.00	349.20	354.61		355.05	0.006343	7.21	240.23	152.00	0.59
Plumtree	2485	50-YR	1395.00	349.20	355.97		356.29	0.004374	7.11	476.91	195.79	0.51
Plumtree	2485	100-YR	1765.00	349.20	356.57		356.86	0.003799	7.06	596.21	203.74	0.49
Plumtree	2485	7-30-2016	2157.00	349.20	357.13		357.41	0.003453	7.11	712.00	210.83	0.47
Plumtree	2331	1-YR	194.00	348.10	351.56		351.81	0.003863	4.04	48.42	21.42	0.45
Plumtree	2331	2-YR	295.00	348.10	352.38		352.69	0.003579	4.54	73.39	64.53	0.45
Plumtree	2331	10-YR	741.00	348.10	353.98		354.35	0.003255	5.66	239.48	125.68	0.45
Plumtree	2331	50-YR	1395.00	348.10	355.28		355.71	0.003258	6.65	418.02	148.91	0.47
Plumtree	2331	100-YR	1765.00	348.10	355.84		356.30	0.003329	7.12	504.14	159.72	0.49
Plumtree	2331	7-30-2016	2157.00	348.10	356.39		356.87	0.003306	7.48	594.77	169.96	0.49
Plumtree	2153	1-YR	194.00	346.39	351.13		351.30	0.002037	3.41	61.97	21.90	0.30
Plumtree	2153	2-YR	295.00	346.39	351.90		352.15	0.002475	4.11	100.30	73.87	0.33
Plumtree	2153	10-YR	741.00	346.39	353.46		353.77	0.003077	5.44	257.98	122.71	0.38
Plumtree	2153	50-YR	1395.00	346.39	354.74		355.09	0.003391	6.47	429.96	142.84	0.42
Plumtree	2153	100-YR	1765.00	346.39	355.28		355.67	0.003548	6.93	509.05	149.50	0.43
Plumtree	2153	7-30-2016	2157.00	346.39	355.83		356.23	0.003575	7.27	593.34	156.45	0.44
Plumtree	1994	1-YR	194.00	346.45	350.69		350.92	0.002877	3.81	53.72	27.63	0.37
Plumtree	1994	2-YR	295.00	346.45	351.33		351.66	0.003627	4.72	79.90	81.53	0.42
Plumtree	1994	10-YR	741.00	346.45	352.86		353.23	0.003655	5.90	246.07	133.39	0.45
Plumtree	1994	50-YR	1395.00	346.45	354.14		354.53	0.003654	6.79	442.60	171.19	0.46
Plumtree	1994	100-YR	1765.00	346.45	354.72		355.11	0.003450	6.97	544.64	176.56	0.45
Plumtree	1994	7-30-2016	2157.00	346.45	355.30		355.68	0.003318	7.19	649.26	188.61	0.45
Plumtree	1888	1-YR	194.00	345.73	350.34	348.84	350.59	0.003215	4.17	62.39	49.34	0.40
Plumtree	1888	2-YR	295.00	345.73	351.00	349.69	351.29	0.003216	4.71	102.75	73.28	0.42
Plumtree	1888	10-YR	741.00	345.73	352.55	351.73	352.85	0.003116	5.77	278.83	135.25	0.43
Plumtree	1888	50-YR	1395.00	345.73	353.80	352.63	354.15	0.003278	6.79	464.37	160.47	0.46
Plumtree	1888	100-YR	1765.00	345.73	354.38	353.02	354.74	0.003247	7.14	560.70	170.01	0.46
Plumtree	1888	7-30-2016	2157.00	345.73	354.96	353.34	355.33	0.003190	7.44	661.28	180.95	0.47
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	194.00	346.61	350.25		350.35	0.001595	2.87	108.32	72.27	0.29
Plumtree	1830	2-YR	295.00	346.61	350.92		351.02	0.001553	3.13	163.67	98.15	0.30
Plumtree	1830	10-YR	741.00	346.61	352.47		352.60	0.001499	3.92	375.28	152.68	0.31
Plumtree	1830	50-YR	1395.00	346.61	353.67		353.86	0.001791	4.96	562.31	157.05	0.35
Plumtree	1830	100-YR	1765.00	346.61	354.21		354.42	0.001949	5.47	646.65	160.33	0.37
Plumtree	1830	7-30-2016	2157.00	346.61	354.74		354.99	0.002076	5.94	733.31	165.72	0.39
Plumtree	1641	1-YR	194.00	345.19	349.67		349.90	0.003214	4.03	60.67	31.21	0.39
Plumtree	1641	2-YR	295.00	345.19	350.10		350.47	0.004626	5.24	79.12	65.80	0.48
Plumtree	1641	10-YR	741.00	345.19	351.34		351.94	0.006536	7.53	195.70	116.71	0.60
Plumtree	1641	50-YR	1395.00	345.19	352.60		353.18	0.005962	8.36	365.80	148.16	0.59
Plumtree	1641	100-YR	1765.00	345.19	353.18		353.74	0.005567	8.58	455.21	157.83	0.58
Plumtree	1641	7-30-2016	2157.00	345.19	353.80		354.33	0.004984	8.60	556.44	167.82	0.56
Plumtree	1463	1-YR	194.00	343.35	349.50		349.57	0.000925	2.19	108.95	98.09	0.22
Plumtree	1463	2-YR	295.00	343.35	349.89		350.00	0.001284	2.79	151.37	117.70	0.26
Plumtree	1463	10-YR	741.00	343.35	350.98		351.20	0.002198	4.35	296.10	147.91	0.35
Plumtree	1463	50-YR	1395.00	343.35	352.13		352.42	0.002596	5.46	484.84	181.84	0.40
Plumtree	1463	100-YR	1765.00	343.35	352.72		353.03	0.002525	5.74	596.80	195.20	0.40
Plumtree	1463	7-30-2016	2157.00	343.35	353.39		353.69	0.002250	5.80	732.26	206.47	0.38
Plumtree	1291	1-YR	408.00	344.26	349.04		349.21	0.003520	4.08	193.90	220.05	0.41
Plumtree	1291	2-YR	581.00	344.26	349.38		349.56	0.003912	4.59	270.83	239.14	0.44
Plumtree	1291	10-YR	1316.00	344.26	350.50		350.68	0.003558	5.29	588.35	314.30	0.44
Plumtree	1291	50-YR	2351.00	344.26	351.76		351.92	0.002747	5.47	1032.24	396.89	0.40
Plumtree	1291	100-YR	2995.00	344.26	352.42		352.57	0.002276	5.35	1304.94	413.55	0.37

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	1291	7-30-2016	3782.00	344.26	353.15		353.29	0.001931	5.29	1608.39	422.07	0.35
Plumtree	1124	1-YR	408.00	343.58	348.35		348.57	0.004100	4.55	207.91	243.41	0.46
Plumtree	1124	2-YR	581.00	343.58	348.81		348.96	0.003188	4.30	323.04	261.49	0.41
Plumtree	1124	10-YR	1316.00	343.58	350.07		350.19	0.002297	4.40	663.42	281.73	0.36
Plumtree	1124	50-YR	2351.00	343.58	351.41		351.53	0.001865	4.71	1061.23	311.21	0.34
Plumtree	1124	100-YR	2995.00	343.58	352.10		352.23	0.001742	4.91	1282.29	325.49	0.34
Plumtree	1124	7-30-2016	3782.00	343.58	352.85		352.99	0.001658	5.14	1529.32	337.57	0.33
Plumtree	994	1-YR	408.00	342.85	347.96		348.08	0.003020	3.47	217.30	183.00	0.39
Plumtree	994	2-YR	581.00	342.85	348.47		348.58	0.002459	3.40	320.58	206.46	0.36
Plumtree	994	10-YR	1316.00	342.85	349.75		349.89	0.002182	4.09	602.67	235.38	0.36
Plumtree	994	50-YR	2351.00	342.85	351.11		351.28	0.001954	4.70	947.57	271.54	0.36
Plumtree	994	100-YR	2995.00	342.85	351.81		351.99	0.001883	5.01	1142.33	288.19	0.36
Plumtree	994	7-30-2016	3782.00	342.85	352.55		352.75	0.001825	5.33	1363.37	303.86	0.36
Plumtree	911	1-YR	408.00	342.92	347.65		347.82	0.003134	4.12	214.38	193.54	0.40
Plumtree	911	2-YR	581.00	342.92	348.27		348.39	0.002179	3.76	340.95	213.59	0.34
Plumtree	911	10-YR	1316.00	342.92	349.59		349.71	0.002009	4.41	638.16	239.09	0.35
Plumtree	911	50-YR	2351.00	342.92	350.96		351.11	0.001899	5.04	992.45	273.53	0.35
Plumtree	911	100-YR	2995.00	342.92	351.66		351.83	0.001852	5.33	1190.22	288.71	0.35
Plumtree	911	7-30-2016	3782.00	342.92	352.42		352.60	0.001816	5.65	1413.08	303.31	0.36
Plumtree	762	1-YR	408.00	342.54	347.00		347.27	0.004547	4.67	123.45	66.72	0.49
Plumtree	762	2-YR	581.00	342.54	347.52		347.89	0.005296	5.60	187.98	161.19	0.55
Plumtree	762	10-YR	1316.00	342.54	349.12		349.36	0.002899	5.41	528.88	242.04	0.43
Plumtree	762	50-YR	2351.00	342.54	350.58		350.81	0.002265	5.70	912.56	281.55	0.40
Plumtree	762	100-YR	2995.00	342.54	351.31		351.54	0.002109	5.91	1124.41	300.48	0.39
Plumtree	762	7-30-2016	3782.00	342.54	352.09		352.32	0.001979	6.14	1363.28	314.67	0.39
Plumtree	658	1-YR	408.00	340.20	346.92		347.04	0.000944	2.81	191.04	174.69	0.24
Plumtree	658	2-YR	581.00	340.20	347.48		347.62	0.001039	3.21	302.33	225.88	0.26
Plumtree	658	10-YR	1316.00	340.20	349.02		349.16	0.001028	3.84	730.33	301.02	0.27
Plumtree	658	50-YR	2351.00	340.20	350.49		350.64	0.000974	4.29	1193.92	328.76	0.27
Plumtree	658	100-YR	2995.00	340.20	351.22		351.38	0.000975	4.56	1438.89	345.31	0.27
Plumtree	658	7-30-2016	3782.00	340.20	351.99		352.16	0.000985	4.86	1712.84	363.75	0.28
Plumtree	526	1-YR	408.00	341.63	346.78		346.90	0.001213	2.99	267.08	264.39	0.26
Plumtree	526	2-YR	581.00	341.63	347.38		347.47	0.000981	2.94	428.28	278.77	0.24
Plumtree	526	10-YR	1316.00	341.63	348.94		349.02	0.000822	3.28	891.18	311.73	0.23
Plumtree	526	50-YR	2351.00	341.63	350.41		350.50	0.000804	3.74	1371.74	340.24	0.24
Plumtree	526	100-YR	2995.00	341.63	351.14		351.24	0.000812	3.99	1623.66	352.63	0.24
Plumtree	526	7-30-2016	3782.00	341.63	351.91		352.02	0.000828	4.27	1900.65	365.72	0.25
Plumtree	380	1-YR	408.00	341.92	346.39		346.63	0.002737	4.07	136.62	138.09	0.39
Plumtree	380	2-YR	581.00	341.92	347.04	345.26	347.25	0.002220	4.07	255.22	192.08	0.36
Plumtree	380	10-YR	1316.00	341.92	348.66		348.84	0.001693	4.47	590.20	219.66	0.33
Plumtree	380	50-YR	2351.00	341.92	350.13		350.33	0.001622	5.11	923.92	236.20	0.34
Plumtree	380	100-YR	2995.00	341.92	350.84		351.06	0.001632	5.46	1094.45	241.67	0.35
Plumtree	380	7-30-2016	3782.00	341.92	351.59		351.84	0.001669	5.88	1277.89	247.14	0.36
Plumtree	146	1-YR	408.00	340.73	343.98	343.98	345.17	0.019900	8.74	46.71	19.97	1.01
Plumtree	146	2-YR	581.00	340.73	344.79	344.79	346.05	0.015181	9.06	69.35	43.37	0.92
Plumtree	146	10-YR	1316.00	340.73	346.75	346.75	347.96	0.009277	9.88	226.83	111.86	0.78
Plumtree	146	50-YR	2351.00	340.73	348.05	348.05	349.45	0.009370	11.57	391.46	141.74	0.81
Plumtree	146	100-YR	2995.00	340.73	348.63	348.63	350.16	0.009716	12.50	477.06	153.62	0.84
Plumtree	146	7-30-2016	3782.00	340.73	349.23	349.23	350.91	0.010101	13.47	572.07	164.30	0.87
Plumtree	63	1-YR	408.00	340.00	343.55	342.21	343.79	0.003500	3.88	105.20	43.59	0.44
Plumtree	63	2-YR	581.00	340.00	344.18	342.75	344.47	0.003507	4.34	134.24	50.01	0.45
Plumtree	63	10-YR	1316.00	340.00	345.91	344.22	346.45	0.003506	5.95	247.63	84.16	0.49
Plumtree	63	50-YR	2351.00	340.00	347.54	345.72	348.29	0.003501	7.28	427.06	127.03	0.52
Plumtree	63	100-YR	2995.00	340.00	348.33	346.61	349.17	0.003500	7.89	532.16	139.56	0.53
Plumtree	63	7-30-2016	3782.00	340.00	349.16	347.39	350.11	0.003503	8.50	652.88	150.66	0.54

HEC-RAS Plan: B River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	10286	1-YR	396.90	396.81	0.09	2.35	0.01	2.21	100.81	119.97	150.01	0.48
Plumtree	10286	2-YR	397.10	396.98	0.12	2.33	0.01	4.42	135.53	167.05	154.15	0.59
Plumtree	10286	10-YR	397.76	397.61	0.15	2.52	0.03	19.19	248.06	328.76	169.55	0.71
Plumtree	10286	50-YR	398.27	398.01	0.26	2.49	0.01	43.78	402.92	548.31	179.33	1.14
Plumtree	10286	100-YR	398.46	398.12	0.34	2.39	0.00	57.95	481.79	660.25	180.10	1.46
Plumtree	10286	7-30-2016	398.58	398.20	0.38	2.30	0.02	68.34	532.05	732.61	180.66	1.64
Plumtree	10044	1-YR	394.55	394.38	0.18	2.60	0.01		152.30	70.70	160.05	0.73
Plumtree	10044	2-YR	394.76	394.57	0.19	2.43	0.01		195.94	111.06	181.74	0.80
Plumtree	10044	10-YR	395.21	394.81	0.41	0.61	0.10	0.00	352.99	243.01	200.40	1.68
Plumtree	10044	50-YR	395.77	395.39	0.38	0.37	0.10	0.61	514.78	479.61	234.35	1.57
Plumtree	10044	100-YR	396.07	395.74	0.34	0.37	0.08	1.81	583.55	614.64	255.67	1.37
Plumtree	10044	7-30-2016	396.26	395.95	0.32	0.37	0.07	2.89	627.52	702.59	268.46	1.29
Plumtree	9814	1-YR	391.94	391.65	0.29	0.64	0.02		223.00		43.53	0.79
Plumtree	9814	2-YR	392.32	392.01	0.31	0.55	0.01	0.00	307.00		52.13	0.83
Plumtree	9814	10-YR	394.04	393.97	0.08	0.04	0.01	25.02	446.62	124.36	272.22	0.20
Plumtree	9814	50-YR	395.30	395.24	0.06	0.03	0.00	75.79	606.58	312.63	304.39	0.16
Plumtree	9814	100-YR	395.62	395.55	0.07	0.03	0.00	98.45	706.39	395.16	315.10	0.19
Plumtree	9814	7-30-2016	395.82	395.75	0.07	0.03	0.00	113.34	765.72	453.95	317.79	0.20
Plumtree	9762	1-YR	391.29	390.84	0.45	0.16	0.09		223.00		30.27	1.18
Plumtree	9762	2-YR	391.76	391.35	0.41	0.15	0.07		303.99	3.01	69.10	1.05
Plumtree	9762	10-YR	394.00	393.94	0.05	0.02	0.01	13.36	401.79	180.85	228.01	0.14
Plumtree	9762	50-YR	395.27	395.21	0.06	0.02	0.01	47.85	598.78	348.37	286.89	0.16
Plumtree	9762	100-YR	395.59	395.52	0.07	0.02	0.01	63.60	697.60	438.80	322.86	0.19
Plumtree	9762	7-30-2016	395.79	395.71	0.08	0.02	0.01	76.36	777.04	479.60	331.68	0.22
Plumtree	9732	1-YR	391.03	390.89	0.15				223.00		34.50	0.34
Plumtree	9732	2-YR	391.54	391.35	0.19				307.00		37.47	0.41
Plumtree	9732	10-YR	393.96	393.80	0.16			3.48	589.52	2.99	166.87	0.28
Plumtree	9732	50-YR	395.24	395.11	0.14			35.62	777.35	182.03	223.95	0.28
Plumtree	9732	100-YR	395.56	395.40	0.16			49.77	900.87	249.35	235.24	0.33
Plumtree	9732	7-30-2016	395.76	395.59	0.17			60.62	974.97	297.41	241.96	0.37
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	389.52	389.31	0.21	0.36	0.02	0.20	222.44	0.37	35.83	0.49
Plumtree	9589	2-YR	390.20	389.99	0.21	0.26	0.02	1.69	303.05	2.26	43.20	0.46
Plumtree	9589	10-YR	391.43	391.04	0.39	0.26	0.09	6.73	579.96	9.31	63.32	0.76
Plumtree	9589	50-YR	392.59	392.07	0.52	0.25	0.15	71.72	891.33	31.95	135.97	1.01
Plumtree	9589	100-YR	393.12	392.60	0.52	0.23	0.14	109.22	1018.77	72.02	245.13	1.03
Plumtree	9589	7-30-2016	393.38	392.89	0.49	0.22	0.12	135.67	1074.75	122.59	267.37	1.01
Plumtree	9499	1-YR	389.15	388.97	0.18	0.44	0.01		186.11	17.89	50.97	0.45
Plumtree	9499	2-YR	389.92	389.75	0.17	0.44	0.04	0.93	271.86	48.21	124.78	0.44
Plumtree	9499	10-YR	391.08	390.88	0.20	0.31	0.01	83.22	476.71	159.07	158.77	0.56
Plumtree	9499	50-YR	392.20	391.97	0.23	0.26	0.00	241.62	702.09	319.29	171.09	0.65
Plumtree	9499	100-YR	392.74	392.51	0.24	0.25	0.00	342.65	822.44	412.91	175.97	0.70
Plumtree	9499	7-30-2016	393.03	392.79	0.25	0.25	0.00	401.05	889.30	466.65	178.49	0.72
Plumtree	9398	1-YR	388.70	388.37	0.32	0.34	0.03		204.00		15.87	0.70
Plumtree	9398	2-YR	389.45	388.92	0.53	0.52	0.04	3.60	316.02	1.38	97.70	1.12
Plumtree	9398	10-YR	390.76	390.45	0.31	0.53	0.06	157.50	444.27	117.23	167.13	0.89
Plumtree	9398	50-YR	391.93	391.67	0.26	0.48	0.09	396.08	581.21	285.71	182.79	0.89
Plumtree	9398	100-YR	392.49	392.22	0.27	0.48	0.10	541.61	663.78	372.61	192.69	0.94
Plumtree	9398	7-30-2016	392.78	392.51	0.27	0.48	0.11	624.90	706.22	425.88	196.97	0.96
Plumtree	9301	1-YR	388.33	388.11	0.22	0.49	0.02	6.54	197.46		32.60	0.46
Plumtree	9301	2-YR	388.89	388.50	0.39	0.69	0.01	18.16	300.68	2.16	69.83	0.83
Plumtree	9301	10-YR	390.17	389.23	0.94	0.82	0.18	67.49	595.00	56.51	91.28	2.11
Plumtree	9301	50-YR	391.36	390.17	1.19	0.82	0.25	159.72	881.60	221.69	100.36	2.94
Plumtree	9301	100-YR	391.91	390.59	1.32	0.82	0.28	218.07	1030.05	329.88	104.50	3.34
Plumtree	9301	7-30-2016	392.19	390.79	1.40	0.83	0.30	251.64	1114.14	391.22	106.44	3.61
Plumtree	9196	1-YR	387.81	387.40	0.42	0.89	0.09	21.05	181.15	1.80	107.80	1.13
Plumtree	9196	2-YR	388.20	387.74	0.46	0.95	0.09	70.58	241.26	9.16	121.59	1.38
Plumtree	9196	10-YR	389.17	388.82	0.34	0.95	0.03	283.70	363.76	71.53	143.82	1.26
Plumtree	9196	50-YR	390.16	389.79	0.37	1.02	0.01	567.90	521.03	174.06	154.81	1.43
Plumtree	9196	100-YR	390.64	390.24	0.39	1.05	0.00	735.39	607.63	234.98	159.38	1.54
Plumtree	9196	7-30-2016	390.89	390.48	0.41	1.07	0.00	831.04	655.76	270.20	161.92	1.59
Plumtree	8987	1-YR	386.67	386.54	0.13	0.98	0.03	16.01	152.73	35.26	115.30	0.37
Plumtree	8987	2-YR	387.15	387.00	0.15	1.05	0.03	36.74	203.26	81.00	121.03	0.47
Plumtree	8987	10-YR	388.19	387.95	0.23	1.10	0.01	116.82	356.06	246.12	132.81	0.80
Plumtree	8987	50-YR	389.13	388.79	0.34	1.03	0.03	243.69	538.75	480.56	141.71	1.22
Plumtree	8987	100-YR	389.58	389.19	0.39	0.98	0.05	323.10	636.32	618.58	145.45	1.43
Plumtree	8987	7-30-2016	389.82	389.40	0.42	0.95	0.06	369.48	689.99	697.53	147.40	1.54
Plumtree	8753	1-YR	385.66	385.24	0.42	1.15	0.07	44.58	157.65	1.76	79.52	1.22

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	8753	2-YR	386.06	385.62	0.45	1.05	0.08	109.65	203.90	7.45	87.32	1.46
Plumtree	8753	10-YR	387.08	386.73	0.35	0.85	0.04	388.16	295.62	35.22	174.86	1.42
Plumtree	8753	50-YR	388.07	387.83	0.24	0.72	0.00	838.10	358.54	66.36	231.04	1.17
Plumtree	8753	100-YR	388.55	388.33	0.22	0.67	0.01	1114.25	384.34	79.40	245.93	1.08
Plumtree	8753	7-30-2016	388.80	388.59	0.21	0.64	0.01	1259.31	397.65	100.04	251.24	1.04
Plumtree	8579	1-YR	384.40	384.21	0.19	0.49	0.03	52.18	145.55	6.26	90.48	0.60
Plumtree	8579	2-YR	384.94	384.75	0.19	0.51	0.02	108.00	190.09	22.91	101.78	0.62
Plumtree	8579	10-YR	386.19	385.97	0.22	0.57	0.01	294.81	326.96	97.24	121.09	0.80
Plumtree	8579	50-YR	387.34	387.05	0.29	0.67	0.00	554.02	500.11	208.87	143.41	1.08
Plumtree	8579	100-YR	387.87	387.55	0.33	0.71	0.00	703.84	588.35	285.81	151.07	1.20
Plumtree	8579	7-30-2016	388.15	387.81	0.34	0.72	0.00	791.63	635.54	329.83	154.43	1.26
Plumtree	8374	1-YR	383.88	383.79	0.09	0.45	0.04	54.74	149.26		87.23	0.24
Plumtree	8374	2-YR	384.40	384.29	0.11	0.48	0.03	112.10	208.90		94.20	0.33
Plumtree	8374	10-YR	385.60	385.42	0.19	0.58	0.03	329.50	388.54	0.96	111.54	0.57
Plumtree	8374	50-YR	386.67	386.39	0.29	0.67	0.03	646.21	607.80	9.00	123.87	0.88
Plumtree	8374	100-YR	387.17	386.83	0.34	0.71	0.03	834.08	727.45	16.47	130.00	1.05
Plumtree	8374	7-30-2016	387.42	387.05	0.37	0.74	0.03	941.50	793.82	21.68	133.64	1.14
Plumtree	8229	1-YR	383.38	382.85	0.53	1.17	0.04	31.07	165.38	7.55	65.24	1.44
Plumtree	8229	2-YR	383.89	383.45	0.44	1.22	0.02	87.03	206.90	27.07	86.73	1.37
Plumtree	8229	10-YR	385.00	384.49	0.50	1.29	0.02	266.97	336.11	115.93	116.46	1.84
Plumtree	8229	50-YR	385.97	385.40	0.57	1.39	0.03	519.16	473.34	270.50	136.34	2.30
Plumtree	8229	100-YR	386.43	385.82	0.61	1.44	0.03	668.78	542.25	366.97	142.15	2.51
Plumtree	8229	7-30-2016	386.65	386.02	0.64	1.46	0.03	753.29	582.19	421.52	144.93	2.67
Plumtree	8094	1-YR	382.12	381.72	0.40	0.90	0.09	12.66	189.37	1.97	63.21	0.98
Plumtree	8094	2-YR	382.66	382.06	0.59	1.08	0.14	38.77	271.27	10.95	93.32	1.51
Plumtree	8094	10-YR	383.69	382.97	0.72	1.26	0.16	165.23	444.85	108.93	125.68	2.21
Plumtree	8094	50-YR	384.56	383.69	0.87	1.39	0.19	351.85	630.88	280.28	145.63	3.00
Plumtree	8094	100-YR	384.96	384.01	0.95	1.44	0.20	461.02	727.35	389.63	153.05	3.42
Plumtree	8094	7-30-2016	385.16	384.19	0.97	1.45	0.20	527.26	774.79	454.95	157.07	3.56
Plumtree	7954	1-YR	381.13	381.03	0.10	1.20	0.01	84.35	76.38	43.27	155.83	0.58
Plumtree	7954	2-YR	381.43	381.31	0.12	1.25	0.01	135.00	100.37	85.63	160.64	0.72
Plumtree	7954	10-YR	382.18	382.00	0.18	1.31	0.01	301.70	173.26	244.04	176.79	1.12
Plumtree	7954	50-YR	382.91	382.67	0.24	1.32	0.01	547.71	255.57	459.72	187.44	1.49
Plumtree	7954	100-YR	383.28	383.00	0.27	1.32	0.01	692.79	299.98	585.23	192.59	1.66
Plumtree	7954	7-30-2016	383.47	383.18	0.29	1.32	0.01	776.02	324.46	656.52	195.26	1.75
Plumtree	7800	1-YR	379.92	379.84	0.08	1.26	0.01	47.75	51.02	105.23	173.24	0.64
Plumtree	7800	2-YR	380.17	380.07	0.10	1.20	0.02	79.11	73.26	168.63	178.65	0.79
Plumtree	7800	10-YR	380.87	380.71	0.16	1.15	0.03	194.74	142.19	382.07	188.90	1.09
Plumtree	7800	50-YR	381.59	381.37	0.22	1.10	0.04	361.04	231.66	670.30	199.54	1.40
Plumtree	7800	100-YR	381.94	381.70	0.25	1.12	0.05	460.47	282.01	835.52	204.74	1.55
Plumtree	7800	7-30-2016	382.13	381.87	0.27	1.12	0.05	517.92	310.19	928.89	207.53	1.63
Plumtree	7548	1-YR	378.65	378.60	0.05	0.91	0.00	45.78	61.92	96.30	273.00	0.33
Plumtree	7548	2-YR	378.95	378.91	0.05	0.87	0.00	103.55	74.97	142.48	279.96	0.35
Plumtree	7548	10-YR	379.69	379.63	0.06	0.83	0.01	315.43	115.31	288.25	297.62	0.45
Plumtree	7548	50-YR	380.44	380.37	0.07	0.81	0.00	620.18	161.75	481.07	311.71	0.54
Plumtree	7548	100-YR	380.77	380.69	0.08	0.73	0.00	796.93	188.27	592.80	316.02	0.61
Plumtree	7548	7-30-2016	380.96	380.88	0.09	0.66	0.00	899.18	202.22	655.59	318.47	0.64
Plumtree	7367	1-YR	377.74	377.68	0.06	0.61	0.01	0.59		203.41	116.77	
Plumtree	7367	2-YR	378.08	378.00	0.08	0.64	0.01	8.21		312.79	149.00	
Plumtree	7367	10-YR	378.85	378.74	0.11	0.67	0.01	77.24	1.52	640.24	214.67	0.14
Plumtree	7367	50-YR	379.63	379.52	0.11	0.66	0.00	244.91	20.41	997.68	360.43	0.43
Plumtree	7367	100-YR	380.04	379.94	0.10	0.49	0.00	363.03	35.98	1178.99	399.43	0.44
Plumtree	7367	7-30-2016	380.31	380.22	0.09	0.40	0.00	451.90	46.14	1258.96	405.35	0.43
Plumtree	7216	1-YR	377.12	377.08	0.04	0.83	0.02	57.16	127.66	19.18	193.43	0.15
Plumtree	7216	2-YR	377.43	377.38	0.05	0.92	0.03	92.39	190.89	37.72	210.45	0.20
Plumtree	7216	10-YR	378.18	378.08	0.09	1.07	0.04	217.80	388.52	112.68	246.54	0.34
Plumtree	7216	50-YR	378.97	378.85	0.12	0.57	0.00	394.67	627.94	240.38	271.50	0.44
Plumtree	7216	100-YR	379.55	379.43	0.12	0.41	0.00	505.42	747.12	325.46	289.75	0.40
Plumtree	7216	7-30-2016	379.90	379.79	0.11	0.35	0.00	570.44	811.22	375.34	300.65	0.38
Plumtree	7030	1-YR	376.26	376.00	0.26	1.15	0.02	112.49	83.91	7.60	152.85	1.47
Plumtree	7030	2-YR	376.50	376.17	0.32	1.12	0.04	195.29	109.54	16.17	158.76	1.98
Plumtree	7030	10-YR	377.07	376.62	0.45	0.66	0.10	485.91	176.82	56.28	177.07	3.10
Plumtree	7030	50-YR	378.40	378.27	0.13	0.24	0.01	889.92	177.32	195.76	218.64	0.87
Plumtree	7030	100-YR	379.14	379.03	0.11	0.19	0.01	1111.38	194.42	272.20	228.56	0.70
Plumtree	7030	7-30-2016	379.55	379.45	0.10	0.17	0.01	1237.18	204.96	314.86	234.17	0.63
Plumtree	6893	1-YR	374.35	374.15	0.19	0.63	0.00	46.74	154.80	2.45	107.64	0.59
Plumtree	6893	2-YR	374.80	374.61	0.19	0.44	0.02	109.63	203.72	7.66	126.30	0.63
Plumtree	6893	10-YR	376.27	376.15	0.12	0.20	0.01	354.99	306.44	57.57	174.83	0.46
Plumtree	6893	50-YR	378.15	378.07	0.08	0.10	0.00	703.22	409.68	150.10	221.76	0.33

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	6893	100-YR	378.94	378.86	0.08	0.09	0.00	907.07	469.09	201.85	236.27	0.32
Plumtree	6893	7-30-2016	379.37	379.29	0.08	0.08	0.00	1022.85	501.59	232.56	244.53	0.32
Plumtree	6766	1-YR	373.71	373.53	0.18	0.35	0.00	34.59	168.95	0.46	96.97	0.52
Plumtree	6766	2-YR	374.35	374.21	0.13	0.24	0.00	98.30	218.17	4.52	114.80	0.41
Plumtree	6766	10-YR	376.06	375.96	0.10	0.12	0.00	308.70	364.25	46.05	195.27	0.33
Plumtree	6766	50-YR	378.05	377.98	0.07	0.06	0.00	621.35	483.82	157.83	260.16	0.23
Plumtree	6766	100-YR	378.85	378.78	0.07	0.05	0.00	783.63	561.14	233.23	290.44	0.24
Plumtree	6766	7-30-2016	379.29	379.22	0.07	0.05	0.00	875.87	607.13	274.00	316.42	0.24
Plumtree	6663	1-YR	373.36	373.20	0.16	0.28	0.01	12.23	191.77		80.58	0.38
Plumtree	6663	2-YR	374.10	373.95	0.15	0.23	0.01	64.71	255.40	0.89	111.06	0.38
Plumtree	6663	10-YR	375.94	375.84	0.10	0.11	0.00	286.23	376.74	56.03	201.12	0.30
Plumtree	6663	50-YR	377.98	377.92	0.06	0.06	0.00	609.94	467.82	185.24	312.61	0.22
Plumtree	6663	100-YR	378.79	378.74	0.05	0.05	0.00	789.39	511.63	276.98	332.19	0.21
Plumtree	6663	7-30-2016	379.24	379.18	0.05	0.05	0.00	888.21	534.43	334.37	340.25	0.20
Plumtree	6568	1-YR	373.07	372.80	0.27	0.54	0.00	19.30	189.67	0.03	56.98	0.62
Plumtree	6568	2-YR	373.86	373.61	0.25	0.42	0.01	71.60	252.15	10.25	100.52	0.65
Plumtree	6568	10-YR	375.83	375.70	0.13	0.16	0.00	317.55	340.00	114.45	191.60	0.45
Plumtree	6568	50-YR	377.92	377.85	0.07	0.08	0.00	687.51	402.11	301.39	263.96	0.31
Plumtree	6568	100-YR	378.74	378.67	0.07	0.07	0.00	900.39	440.17	395.45	283.29	0.30
Plumtree	6568	7-30-2016	379.18	379.11	0.07	0.07	0.00	1057.30	477.80	466.90	293.81	0.32
Plumtree	6454	1-YR	372.52	372.22	0.30	0.36	0.04	0.31	208.09	0.60	31.98	0.71
Plumtree	6454	2-YR	373.44	373.12	0.32	0.33	0.03	8.48	315.51	10.01	57.90	0.71
Plumtree	6454	10-YR	375.67	375.52	0.15	0.17	0.02	119.40	471.32	181.28	179.24	0.39
Plumtree	6454	50-YR	377.84	377.75	0.09	0.10	0.03	252.58	599.92	538.50	205.15	0.28
Plumtree	6454	100-YR	378.67	378.57	0.09	0.10	0.03	327.79	687.42	720.79	236.23	0.29
Plumtree	6454	7-30-2016	379.11	379.01	0.10	0.10	0.03	387.71	761.62	852.67	252.48	0.32
Plumtree	6350	1-YR	372.12	371.96	0.16	0.18	0.02		209.00		24.12	0.34
Plumtree	6350	2-YR	373.07	372.86	0.22	0.19	0.02		333.98	0.02	28.18	0.45
Plumtree	6350	10-YR	375.48	375.14	0.34	0.16	0.03	19.87	740.85	11.28	67.73	0.62
Plumtree	6350	50-YR	377.71	377.35	0.36	0.13	0.04	179.13	1156.70	55.18	136.14	0.67
Plumtree	6350	100-YR	378.54	378.17	0.37	0.13	0.05	298.12	1341.16	96.72	207.88	0.71
Plumtree	6350	7-30-2016	378.98	378.57	0.40	0.14	0.05	377.30	1491.81	132.89	225.55	0.78
Plumtree	6296	1-YR	371.92	371.60	0.32	0.33	0.11	22.02	186.98		24.21	0.77
Plumtree	6296	2-YR	372.86	372.42	0.44	0.30	0.08	49.65	284.05	0.30	29.08	1.01
Plumtree	6296	10-YR	375.29	374.65	0.64	0.29	0.21	177.31	575.36	19.34	43.62	1.41
Plumtree	6296	50-YR	377.55	376.80	0.74			414.49	894.04	82.47	104.38	1.67
Plumtree	6296	100-YR	378.37	377.54	0.83			551.84	1069.44	114.72	126.45	1.96
Plumtree	6296	7-30-2016	378.79	377.88	0.91			680.23	1184.39	137.38	137.09	2.20
Plumtree	6250 Hearthstone Rd		Bridge									
Plumtree	6197	1-YR	371.11	371.05	0.06	0.11	0.28	0.29	208.58	0.13	30.76	0.11
Plumtree	6197	2-YR	372.09	372.00	0.09	0.13	0.29	1.69	331.52	0.79	33.44	0.17
Plumtree	6197	10-YR	374.10	373.86	0.25	0.19	0.33	12.46	753.40	6.14	38.73	0.40
Plumtree	6197	50-YR	375.83	375.30	0.52	0.27	0.31	32.20	1338.63	20.17	61.83	0.80
Plumtree	6197	100-YR	376.60	375.92	0.68	0.31	0.31	50.09	1652.23	33.68	78.02	1.04
Plumtree	6197	7-30-2016	377.14	376.34	0.80	0.34	0.32	64.02	1889.14	48.84	102.83	1.21
Plumtree	6122	1-YR	370.72	369.72	1.00	0.52	0.26		209.00		12.76	2.44
Plumtree	6122	2-YR	371.67	370.60	1.07	0.46	0.28	0.07	333.89	0.05	24.91	2.52
Plumtree	6122	10-YR	373.59	372.25	1.33	0.37	0.35	25.08	691.11	55.81	45.52	2.90
Plumtree	6122	50-YR	375.25	373.71	1.54	0.34	0.40	138.43	1087.85	164.72	77.96	3.38
Plumtree	6122	100-YR	375.97	374.24	1.73	0.35	0.45	216.18	1293.53	226.29	86.02	3.82
Plumtree	6122	7-30-2016	376.49	374.61	1.87	0.35	0.49	278.81	1447.28	275.92	89.74	4.14
Plumtree	6028	1-YR	369.93	369.80	0.14	0.36	0.02	39.94	166.79	2.27	72.61	0.36
Plumtree	6028	2-YR	370.67	370.52	0.15	0.34	0.03	90.47	234.14	9.39	90.53	0.40
Plumtree	6028	10-YR	372.36	372.18	0.18	0.29	0.03	283.55	429.84	58.61	137.62	0.52
Plumtree	6028	50-YR	373.80	373.60	0.21	0.27	0.03	606.76	634.14	150.09	203.79	0.63
Plumtree	6028	100-YR	374.40	374.18	0.22	0.28	0.04	796.36	735.09	204.55	216.60	0.69
Plumtree	6028	7-30-2016	374.81	374.58	0.23	0.29	0.04	940.71	809.20	252.09	225.74	0.74
Plumtree	5926	1-YR	369.55	369.23	0.32	1.03	0.05	46.84	160.47	1.69	37.61	0.88
Plumtree	5926	2-YR	370.31	369.89	0.41	1.01	0.04	89.20	232.37	12.42	58.85	1.14
Plumtree	5926	10-YR	372.05	371.58	0.46	0.44	0.00	249.57	402.49	119.94	145.59	1.38
Plumtree	5926	50-YR	373.49	372.96	0.53	0.37	0.03	432.14	586.55	372.31	161.34	1.70
Plumtree	5926	100-YR	374.08	373.46	0.61	0.38	0.04	529.62	688.14	518.24	166.47	1.97
Plumtree	5926	7-30-2016	374.48	373.81	0.67	0.39	0.06	602.89	763.10	636.01	170.00	2.17
Plumtree	5824	1-YR	368.47	367.70	0.78	0.87	0.13		209.00		19.41	1.99
Plumtree	5824	2-YR	369.25	368.40	0.84	0.71	0.14		334.00		25.03	2.05
Plumtree	5824	10-YR	371.61	371.14	0.47	0.21	0.04	24.64	717.42	29.94	107.30	0.93
Plumtree	5824	50-YR	373.09	372.65	0.45	0.22	0.01	151.31	1050.04	189.65	163.08	0.96
Plumtree	5824	100-YR	373.65	373.18	0.47	0.25	0.03	225.13	1212.97	297.90	168.67	1.04

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5824	7-30-2016	374.03	373.55	0.48	0.27	0.05	283.88	1333.31	384.80	172.52	1.10
Plumtree	5745	1-YR	367.31	366.95	0.36	0.15	0.04		209.00		20.00	0.82
Plumtree	5745	2-YR	368.40	368.01	0.38	0.13	0.04		334.00		24.38	0.82
Plumtree	5745	10-YR	371.35	371.02	0.33	0.06	0.02	16.03	716.02	39.95	86.25	0.62
Plumtree	5745	50-YR	372.86	372.28	0.57	0.08	0.03	94.90	1199.67	96.43	103.08	1.05
Plumtree	5745	100-YR	373.37	372.59	0.77	0.11	0.03	139.47	1470.92	125.61	108.78	1.42
Plumtree	5745	7-30-2016	373.71	372.76	0.95	0.13	0.04	174.00	1680.17	147.83	113.79	1.75
Plumtree	5711	1-YR	367.11	366.90	0.22	0.13	0.01		209.00		21.22	0.47
Plumtree	5711	2-YR	368.23	367.97	0.27	0.12	0.02		333.68	0.32	28.70	0.54
Plumtree	5711	10-YR	371.27	371.01	0.26			12.69	689.84	69.47	76.54	0.48
Plumtree	5711	50-YR	372.74	372.27	0.48			64.28	1165.88	160.84	129.55	0.88
Plumtree	5711	100-YR	373.22	372.56	0.66			87.67	1436.57	211.76	152.72	1.21
Plumtree	5711	7-30-2016	373.54	372.73	0.81			112.20	1633.90	255.91	161.35	1.49
Plumtree	5650 Brookmede Rd		Bridge									
Plumtree	5614	1-YR	366.80	366.73	0.07	0.06	0.01		209.00		30.34	0.15
Plumtree	5614	2-YR	367.88	367.78	0.10	0.06	0.01	4.30	329.70		53.35	0.19
Plumtree	5614	10-YR	370.14	369.98	0.16	0.05	0.00	78.93	687.99	5.08	120.21	0.30
Plumtree	5614	50-YR	371.69	371.47	0.23	0.06	0.02	214.33	1078.49	98.18	182.13	0.44
Plumtree	5614	100-YR	372.33	372.07	0.26	0.06	0.04	296.89	1270.90	168.21	203.53	0.51
Plumtree	5614	7-30-2016	372.76	372.48	0.28	0.06	0.05	351.72	1410.03	240.25	214.09	0.56
Plumtree	5560	1-YR	366.74	366.63	0.11	0.12	0.02		209.00		26.15	0.23
Plumtree	5560	2-YR	367.81	367.66	0.15	0.12	0.03	1.14	331.25	1.61	58.89	0.29
Plumtree	5560	10-YR	370.09	369.93	0.16	0.09	0.04	112.80	612.95	46.26	166.37	0.33
Plumtree	5560	50-YR	371.61	371.43	0.18	0.09	0.05	333.45	896.15	161.40	278.54	0.42
Plumtree	5560	100-YR	372.23	372.05	0.18	0.08	0.04	493.85	1004.80	237.35	304.52	0.44
Plumtree	5560	7-30-2016	372.65	372.48	0.17	0.08	0.04	624.40	1072.61	304.99	311.35	0.44
Plumtree	5510	1-YR	366.59	366.24	0.35	0.05	0.01		209.00		17.61	0.78
Plumtree	5510	2-YR	367.66	367.22	0.44	0.05	0.02		334.00		20.63	0.92
Plumtree	5510	10-YR	369.96	369.41	0.55			37.08	695.15	39.77	125.30	1.09
Plumtree	5510	50-YR	371.49	370.83	0.65			170.13	1053.15	167.72	213.90	1.39
Plumtree	5510	100-YR	372.11	371.53	0.57			284.41	1160.10	291.49	227.27	1.32
Plumtree	5510	7-30-2016	372.53	371.96	0.57			370.37	1256.72	374.91	242.31	1.35
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	366.35	366.16	0.19	0.15	0.01		209.00		19.99	0.39
Plumtree	5474	2-YR	367.37	367.11	0.27	0.18	0.02		334.00		22.80	0.54
Plumtree	5474	10-YR	369.43	368.91	0.52	0.25	0.08	30.99	733.69	7.32	72.38	0.97
Plumtree	5474	50-YR	371.45	371.03	0.42	0.13	0.01	238.62	1041.31	111.07	169.80	0.87
Plumtree	5474	100-YR	372.07	371.63	0.44	0.13	0.00	357.59	1195.41	183.01	185.53	0.96
Plumtree	5474	7-30-2016	372.49	372.04	0.45	0.13	0.01	450.76	1308.34	242.90	199.33	1.02
Plumtree	5419	1-YR	366.18	365.95	0.23	0.33	0.00		209.00		17.98	0.50
Plumtree	5419	2-YR	367.17	366.82	0.35	0.35	0.02		334.00		20.02	0.71
Plumtree	5419	10-YR	369.10	368.30	0.80	0.40	0.13	16.32	739.56	16.13	105.08	1.51
Plumtree	5419	50-YR	371.32	370.91	0.41	0.16	0.06	235.90	947.28	207.81	187.05	0.91
Plumtree	5419	100-YR	371.94	371.49	0.45	0.17	0.07	357.54	1100.54	277.92	202.54	1.04
Plumtree	5419	7-30-2016	372.35	371.87	0.48	0.18	0.07	452.45	1213.52	336.03	214.62	1.13
Plumtree	5323	1-YR	365.86	365.60	0.26	0.59	0.02	0.14	208.86		26.85	0.56
Plumtree	5323	2-YR	366.81	366.52	0.29	0.55	0.03	24.10	309.82	0.09	59.83	0.63
Plumtree	5323	10-YR	368.57	368.20	0.37	0.39	0.00	179.19	574.29	18.52	101.01	0.86
Plumtree	5323	50-YR	371.10	370.90	0.20	0.13	0.01	519.98	729.16	141.86	147.48	0.52
Plumtree	5323	100-YR	371.70	371.48	0.23	0.15	0.01	676.30	859.82	199.88	155.37	0.61
Plumtree	5323	7-30-2016	372.10	371.85	0.25	0.16	0.02	793.94	958.46	249.60	160.09	0.69
Plumtree	5209	1-YR	365.24	364.78	0.46	0.85	0.00		209.00		14.93	1.02
Plumtree	5209	2-YR	366.23	365.64	0.59	0.84	0.00	9.42	323.35	1.23	49.67	1.26
Plumtree	5209	10-YR	368.18	367.77	0.41	0.51	0.04	172.63	521.61	77.76	104.81	1.03
Plumtree	5209	50-YR	370.95	370.79	0.16	0.15	0.03	506.82	601.03	283.14	161.69	0.49
Plumtree	5209	100-YR	371.54	371.36	0.18	0.17	0.04	669.06	699.05	367.88	174.37	0.57
Plumtree	5209	7-30-2016	371.93	371.73	0.20	0.19	0.05	794.68	773.44	433.88	182.50	0.63
Plumtree	5107	1-YR	364.39	363.90	0.49	0.45	0.05		209.00		16.32	1.14
Plumtree	5107	2-YR	365.39	364.77	0.62	0.48	0.06		334.00		20.13	1.36
Plumtree	5107	10-YR	367.62	366.78	0.85	0.43	0.05		738.90	33.10	44.78	1.68
Plumtree	5107	50-YR	370.77	370.32	0.45	0.14	0.01	40.12	1099.43	251.45	155.82	0.85
Plumtree	5107	100-YR	371.33	370.76	0.58	0.17	0.01	78.62	1332.31	325.07	211.10	1.10
Plumtree	5107	7-30-2016	371.69	371.02	0.68	0.19	0.01	117.47	1504.60	379.94	224.89	1.30
Plumtree	5040	1-YR	363.88	363.57	0.31	0.35	0.18		209.00		19.13	0.70
Plumtree	5040	2-YR	364.85	364.43	0.42	0.36	0.20		334.00		22.23	0.89
Plumtree	5040	10-YR	367.14	366.46	0.68	0.34	0.25	0.04	771.77	0.19	29.51	1.28
Plumtree	5040	50-YR	370.62	370.08	0.54			41.56	1317.25	32.20	176.49	0.87

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5040	100-YR	371.15	370.48	0.68			106.52	1577.29	52.18	201.76	1.12
Plumtree	5040	7-30-2016	371.49	370.70	0.78			163.88	1768.85	69.28	213.31	1.32
Plumtree	5000 Longview Dr		Bridge									
Plumtree	4932	1-YR	362.45	362.04	0.42	0.44	0.09		209.00		19.65	0.98
Plumtree	4932	2-YR	363.42	362.92	0.50	0.46	0.08		334.00		22.51	1.09
Plumtree	4932	10-YR	365.58	364.73	0.86	0.55	0.06	1.63	769.99	0.38	40.79	1.61
Plumtree	4932	50-YR	367.40	366.21	1.19	0.55	0.14	100.98	1283.87	6.14	44.51	2.18
Plumtree	4932	100-YR	368.32	366.95	1.36	0.50	0.25	154.20	1568.88	12.91	46.38	2.43
Plumtree	4932	7-30-2016	368.98	367.51	1.47	0.46	0.32	198.34	1783.66	19.99	47.77	2.57
Plumtree	4845	1-YR	361.92	361.69	0.24	0.40	0.00		209.00		19.40	0.52
Plumtree	4845	2-YR	362.89	362.54	0.35	0.43	0.01		334.00		21.53	0.71
Plumtree	4845	10-YR	364.97	364.23	0.74	0.45	0.10	6.44	765.56		72.58	1.39
Plumtree	4845	50-YR	366.71	365.80	0.91	0.29	0.20	168.91	1221.96	0.13	96.54	1.76
Plumtree	4845	100-YR	367.57	366.71	0.86	0.22	0.20	306.30	1423.53	6.18	107.66	1.69
Plumtree	4845	7-30-2016	368.21	367.38	0.83	0.18	0.20	415.40	1567.53	19.07	113.78	1.63
Plumtree	4745	1-YR	361.52	361.27	0.25	0.39	0.02		209.00		23.91	0.59
Plumtree	4745	2-YR	362.45	362.14	0.31	0.41	0.01		334.00		28.30	0.68
Plumtree	4745	10-YR	364.42	364.01	0.42	0.33	0.02	37.61	716.86	17.54	127.91	0.84
Plumtree	4745	50-YR	366.22	365.96	0.25	0.14	0.03	185.95	951.19	253.87	211.01	0.59
Plumtree	4745	100-YR	367.15	366.96	0.20	0.10	0.02	277.66	1032.02	426.33	236.13	0.49
Plumtree	4745	7-30-2016	367.82	367.65	0.17	0.09	0.02	349.08	1094.02	558.91	253.05	0.44
Plumtree	4636	1-YR	361.12	360.93	0.19	0.29	0.01		209.00		22.30	0.41
Plumtree	4636	2-YR	362.03	361.75	0.28	0.32	0.01		334.00		24.13	0.57
Plumtree	4636	10-YR	364.08	363.73	0.35	0.27	0.02	10.45	653.84	107.71	183.54	0.72
Plumtree	4636	50-YR	366.05	365.89	0.16	0.15	0.06	58.83	755.67	576.50	251.38	0.42
Plumtree	4636	100-YR	367.03	366.91	0.12	0.12	0.06	100.96	806.61	828.42	289.17	0.36
Plumtree	4636	7-30-2016	367.72	367.61	0.11	0.10	0.06	136.31	844.58	1021.11	327.63	0.32
Plumtree	4550	1-YR	360.83	360.58	0.24	0.42	0.17		209.00		23.05	0.55
Plumtree	4550	2-YR	361.71	361.38	0.33	0.43	0.20		334.00		26.38	0.70
Plumtree	4550	10-YR	363.78	363.24	0.54	0.40	0.27	0.38	757.68	13.94	176.31	1.02
Plumtree	4550	50-YR	365.84	365.13	0.71	0.35	0.39	17.79	1292.97	80.23	255.53	1.24
Plumtree	4550	100-YR	366.85	366.09	0.76	0.32	0.46	45.65	1566.56	123.79	293.94	1.29
Plumtree	4550	7-30-2016	367.55	366.80	0.75	0.29	0.51	100.35	1745.18	156.47	327.49	1.28
Plumtree	4400 US 40		Bridge									
Plumtree	4344	1-YR	359.47	359.43	0.04	0.01	0.00		209.00		27.67	0.06
Plumtree	4344	2-YR	360.31	360.24	0.07	0.02	0.00		334.00		28.92	0.12
Plumtree	4344	10-YR	362.02	361.81	0.21	0.05	0.02	0.79	765.75	5.46	57.90	0.35
Plumtree	4344	50-YR	363.50	363.04	0.46	0.08	0.09	20.61	1344.81	25.58	116.12	0.73
Plumtree	4344	100-YR	364.23	363.63	0.60	0.09	0.14	40.19	1655.04	40.77	130.78	0.95
Plumtree	4344	7-30-2016	364.91	364.24	0.67	0.09	0.18	63.72	1881.32	56.96	143.76	1.04
Plumtree	4289	1-YR	359.45	359.42	0.03	0.07	0.02		209.00		33.55	0.06
Plumtree	4289	2-YR	360.28	360.22	0.06	0.09	0.02		334.00		36.52	0.11
Plumtree	4289	10-YR	361.95	361.78	0.16	0.18	0.04	2.08	761.09	8.83	115.32	0.28
Plumtree	4289	50-YR	363.33	363.05	0.28	0.19	0.01	60.26	1257.73	73.01	163.20	0.49
Plumtree	4289	100-YR	363.99	363.68	0.31	0.18	0.01	119.45	1480.43	136.12	175.86	0.56
Plumtree	4289	7-30-2016	364.64	364.34	0.30	0.16	0.02	191.87	1611.03	199.10	191.07	0.55
Plumtree	4185	1-YR	359.37	359.13	0.24	0.55	0.01		194.00		21.83	0.54
Plumtree	4185	2-YR	360.16	359.85	0.31	0.55	0.02		295.00		24.22	0.66
Plumtree	4185	10-YR	361.73	361.18	0.55	0.54	0.09	100.19	640.26	0.56	132.05	1.21
Plumtree	4185	50-YR	363.14	362.80	0.34	0.34	0.04	460.62	843.67	90.71	234.77	0.92
Plumtree	4185	100-YR	363.81	363.52	0.28	0.26	0.04	655.57	928.66	180.76	266.10	0.83
Plumtree	4185	7-30-2016	364.47	364.22	0.24	0.22	0.03	861.46	1004.20	291.34	291.29	0.75
Plumtree	4033	1-YR	358.80	358.59	0.21	0.48	0.02		194.00		20.78	0.46
Plumtree	4033	2-YR	359.59	359.34	0.26	0.47	0.02		284.34	10.66	99.21	0.55
Plumtree	4033	10-YR	361.09	360.86	0.24	0.27	0.00	14.51	486.32	240.17	173.30	0.63
Plumtree	4033	50-YR	362.75	362.55	0.20	0.15	0.02	121.36	696.54	577.11	288.90	0.61
Plumtree	4033	100-YR	363.50	363.35	0.16	0.12	0.01	187.93	737.64	839.43	308.29	0.52
Plumtree	4033	7-30-2016	364.22	364.09	0.13	0.10	0.01	257.66	789.52	1109.82	325.39	0.47
Plumtree	3930	1-YR	358.31	357.92	0.39	0.57	0.04	0.14	193.86		19.97	0.91
Plumtree	3930	2-YR	359.10	358.60	0.50	0.52	0.07	4.06	290.94		27.14	1.09
Plumtree	3930	10-YR	360.81	360.54	0.28	0.26	0.02	51.63	458.53	230.84	196.45	0.77
Plumtree	3930	50-YR	362.58	362.45	0.14	0.14	0.00	168.98	539.61	686.41	238.51	0.48
Plumtree	3930	100-YR	363.37	363.25	0.12	0.12	0.00	247.36	599.92	917.72	254.26	0.45
Plumtree	3930	7-30-2016	364.11	363.99	0.12	0.11	0.00	350.68	659.84	1146.48	267.70	0.44
Plumtree	3816	1-YR	357.70	357.45	0.25	0.42	0.01		190.51	3.49	31.92	0.55
Plumtree	3816	2-YR	358.51	358.23	0.28	0.39	0.00	1.66	271.13	22.20	64.51	0.62
Plumtree	3816	10-YR	360.53	360.32	0.21	0.25	0.01	57.24	451.81	231.94	154.14	0.57

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	3816	50-YR	362.44	362.29	0.15	0.16	0.01	186.38	586.20	622.42	209.95	0.47
Plumtree	3816	100-YR	363.25	363.11	0.14	0.14	0.01	269.98	657.61	837.41	226.37	0.47
Plumtree	3816	7-30-2016	364.00	363.86	0.14	0.14	0.00	358.37	735.94	1062.69	233.98	0.48
Plumtree	3688	1-YR	357.27	357.04	0.23	0.45	0.01	0.96	192.94	0.11	27.11	0.48
Plumtree	3688	2-YR	358.12	357.83	0.29	0.40	0.01	8.58	278.12	8.29	56.84	0.60
Plumtree	3688	10-YR	360.28	360.00	0.27	0.29	0.00	89.03	489.10	162.87	127.64	0.67
Plumtree	3688	50-YR	362.27	362.06	0.21	0.20	0.00	253.17	656.77	485.06	180.41	0.62
Plumtree	3688	100-YR	363.10	362.91	0.19	0.18	0.01	366.28	728.26	670.46	190.93	0.60
Plumtree	3688	7-30-2016	363.86	363.67	0.19	0.18	0.01	484.31	807.78	864.91	200.87	0.61
Plumtree	3550	1-YR	356.82	356.61	0.21	0.40	0.00	0.31	193.69		26.45	0.48
Plumtree	3550	2-YR	357.71	357.46	0.24	0.37	0.01	6.00	288.36	0.64	42.74	0.51
Plumtree	3550	10-YR	359.98	359.69	0.30	0.33	0.03	79.99	597.11	63.90	106.80	0.63
Plumtree	3550	50-YR	362.07	361.81	0.26	0.25	0.03	298.59	862.15	234.26	153.51	0.60
Plumtree	3550	100-YR	362.91	362.65	0.27	0.25	0.04	417.32	1005.44	342.24	168.54	0.64
Plumtree	3550	7-30-2016	363.67	363.38	0.29	0.25	0.04	530.09	1162.64	464.27	187.44	0.70
Plumtree	3428	1-YR	356.42	356.18	0.24	0.39	0.00	1.62	192.38		22.14	0.50
Plumtree	3428	2-YR	357.33	357.01	0.31	0.47	0.00	11.37	283.63		29.32	0.64
Plumtree	3428	10-YR	359.63	359.07	0.55	0.72	0.03	102.16	619.01	19.83	61.47	1.12
Plumtree	3428	50-YR	361.79	361.18	0.61	0.61	0.06	305.69	954.99	134.33	98.52	1.30
Plumtree	3428	100-YR	362.63	361.96	0.67	0.67	0.09	411.72	1129.25	224.02	112.71	1.47
Plumtree	3428	7-30-2016	363.38	362.65	0.72	0.70	0.11	519.13	1298.21	339.66	123.38	1.62
Plumtree	3296	1-YR	356.02	355.80	0.22	0.33	0.03		194.00		16.70	0.48
Plumtree	3296	2-YR	356.86	356.53	0.32	0.44	0.05		295.00		19.59	0.67
Plumtree	3296	10-YR	358.87	358.01	0.87	0.52	0.18	0.00	741.00		27.52	1.73
Plumtree	3296	50-YR	361.11	359.90	1.21	0.32	0.29	10.61	1361.28	23.12	80.09	2.17
Plumtree	3296	100-YR	361.87	360.30	1.57	0.36	0.38	19.48	1681.32	64.20	93.23	2.80
Plumtree	3296	7-30-2016	362.58	360.77	1.80	0.43	0.42	33.63	1982.62	140.75	111.54	3.24
Plumtree	3179	1-YR	355.66	355.52	0.14	0.29	0.00		194.00		29.86	0.32
Plumtree	3179	2-YR	356.36	356.20	0.16	0.27	0.01	0.00	295.00		48.96	0.39
Plumtree	3179	10-YR	358.17	357.91	0.27	0.16	0.05	7.41	729.30	4.29	72.82	0.53
Plumtree	3179	50-YR	360.50	360.26	0.24	0.08	0.05	49.89	1217.59	127.52	151.18	0.46
Plumtree	3179	100-YR	361.13	360.83	0.30	0.10	0.06	74.63	1491.42	198.95	158.97	0.56
Plumtree	3179	7-30-2016	361.50	361.12	0.39	0.12	0.08	98.36	1795.12	263.52	162.72	0.73
Plumtree	3077	1-YR	355.36	355.21	0.15	0.30	0.00	2.44	191.56		75.39	0.36
Plumtree	3077	2-YR	356.09	355.96	0.13	0.24	0.01	35.87	253.31	5.82	119.52	0.31
Plumtree	3077	10-YR	357.96	357.86	0.10	0.18	0.04	209.32	437.61	94.07	174.51	0.28
Plumtree	3077	50-YR	360.37	360.30	0.07	0.09	0.03	496.06	626.74	272.20	208.14	0.21
Plumtree	3077	100-YR	360.97	360.88	0.09	0.11	0.04	625.73	775.46	363.81	230.14	0.27
Plumtree	3077	7-30-2016	361.30	361.18	0.12	0.14	0.06	774.46	929.21	453.33	238.42	0.36
Plumtree	2978	1-YR	355.07	354.90	0.17	0.18	0.00		194.00		24.50	0.38
Plumtree	2978	2-YR	355.84	355.62	0.22	0.22	0.00		294.74	0.26	32.08	0.47
Plumtree	2978	10-YR	357.75	357.29	0.46	0.26	0.01	5.29	705.52	30.19	67.06	0.90
Plumtree	2978	50-YR	360.24	359.85	0.39	0.12	0.02	102.42	1117.34	175.24	127.21	0.76
Plumtree	2978	100-YR	360.82	360.33	0.50	0.13	0.04	164.39	1361.71	238.90	142.58	0.97
Plumtree	2978	7-30-2016	361.10	360.38	0.72	0.19	0.06	206.11	1656.68	294.21	144.68	1.42
Plumtree	2917	1-YR	354.89	354.70	0.19	0.10	0.01		194.00		20.80	0.42
Plumtree	2917	2-YR	355.62	355.35	0.26	0.15	0.01	0.00	295.00		28.87	0.59
Plumtree	2917	10-YR	357.48	356.92	0.55	0.20	0.06	7.36	727.51	6.13	50.77	1.08
Plumtree	2917	50-YR	360.11	359.77	0.34			186.20	1108.26	100.54	237.64	0.68
Plumtree	2917	100-YR	360.65	360.29	0.36			344.14	1284.27	136.60	254.62	0.77
Plumtree	2917	7-30-2016	360.86	360.33	0.53			429.99	1559.29	167.72	255.85	1.12
Plumtree	2900 Frederick Rd		Bridge									
Plumtree	2827	1-YR	354.48	354.23	0.25	0.25	0.03	0.27	193.73		35.30	0.65
Plumtree	2827	2-YR	355.15	354.88	0.27	0.24	0.01	4.90	289.37	0.73	58.20	0.64
Plumtree	2827	10-YR	356.68	356.04	0.64	0.31	0.16	27.61	696.35	17.04	123.18	1.35
Plumtree	2827	50-YR	357.76	357.25	0.51	0.25	0.12	359.53	970.41	65.06	167.47	1.27
Plumtree	2827	100-YR	358.27	357.71	0.55	0.25	0.14	513.02	1147.52	104.46	180.62	1.41
Plumtree	2827	7-30-2016	358.75	358.17	0.58	0.24	0.15	689.72	1316.63	150.65	191.93	1.51
Plumtree	2759	1-YR	354.20	354.01	0.19	0.44	0.02	3.00	190.89	0.11	38.10	0.40
Plumtree	2759	2-YR	354.90	354.65	0.25	0.45	0.04	20.74	267.81	6.45	102.66	0.54
Plumtree	2759	10-YR	356.20	355.89	0.31	0.59	0.03	175.08	459.67	106.25	183.88	0.88
Plumtree	2759	50-YR	357.39	357.12	0.27	0.62	0.00	453.73	603.97	337.30	234.40	0.96
Plumtree	2759	100-YR	357.88	357.60	0.28	0.59	0.01	614.78	679.23	471.00	251.48	1.03
Plumtree	2759	7-30-2016	358.35	358.08	0.27	0.56	0.01	788.54	747.32	621.14	267.31	1.07
Plumtree	2589	1-YR	353.74	353.61	0.13	0.61	0.07		112.49	81.51	67.53	0.44
Plumtree	2589	2-YR	354.42	354.29	0.13	0.53	0.07	0.88	146.53	147.60	107.81	0.47
Plumtree	2589	10-YR	355.57	355.38	0.20	0.50	0.02	40.39	264.85	435.76	153.99	0.84
Plumtree	2589	50-YR	356.77	356.49	0.28	0.47	0.00	178.14	420.08	796.77	230.38	1.31

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	2589	100-YR	357.28	357.03	0.25	0.42	0.00	261.33	458.65	1045.02	247.37	1.27
Plumtree	2589	7-30-2016	357.79	357.55	0.24	0.38	0.00	352.56	495.32	1309.12	263.57	1.24
Plumtree	2485	1-YR	353.06	352.27	0.80	1.09	0.16	6.08	187.92		22.59	1.94
Plumtree	2485	2-YR	353.81	352.96	0.85	0.96	0.16	28.25	263.54	3.21	38.34	2.05
Plumtree	2485	10-YR	355.05	354.61	0.44	0.68	0.02	207.96	378.91	154.14	152.00	1.51
Plumtree	2485	50-YR	356.29	355.97	0.32	0.58	0.01	464.35	483.94	446.71	195.79	1.34
Plumtree	2485	100-YR	356.86	356.57	0.29	0.55	0.02	615.25	528.59	621.16	203.74	1.28
Plumtree	2485	7-30-2016	357.41	357.13	0.28	0.52	0.02	774.13	577.37	805.50	210.83	1.27
Plumtree	2331	1-YR	351.81	351.56	0.25	0.49	0.02		193.80	0.20	21.42	0.56
Plumtree	2331	2-YR	352.69	352.38	0.31	0.52	0.02	1.47	289.48	4.04	64.53	0.65
Plumtree	2331	10-YR	354.35	353.98	0.37	0.56	0.02	147.73	541.51	51.77	125.68	0.89
Plumtree	2331	50-YR	355.71	355.28	0.42	0.59	0.02	430.34	807.42	157.24	148.91	1.13
Plumtree	2331	100-YR	356.30	355.84	0.46	0.61	0.02	592.92	943.96	228.11	159.72	1.26
Plumtree	2331	7-30-2016	356.87	356.39	0.48	0.61	0.02	777.07	1073.12	306.81	169.96	1.35
Plumtree	2153	1-YR	351.30	351.13	0.18	0.38	0.00	4.88	189.12		21.90	0.37
Plumtree	2153	2-YR	352.15	351.90	0.24	0.47	0.01	23.02	271.98		73.87	0.51
Plumtree	2153	10-YR	353.77	353.46	0.31	0.53	0.01	251.79	479.82	9.39	122.71	0.82
Plumtree	2153	50-YR	355.09	354.74	0.36	0.56	0.00	644.59	687.32	63.09	142.84	1.09
Plumtree	2153	100-YR	355.67	355.28	0.39	0.56	0.00	873.68	789.67	101.66	149.50	1.23
Plumtree	2153	7-30-2016	356.23	355.83	0.41	0.55	0.01	1121.77	885.20	150.03	156.45	1.32
Plumtree	1994	1-YR	350.92	350.69	0.22	0.32	0.00	1.34	192.66		27.63	0.48
Plumtree	1994	2-YR	351.66	351.33	0.33	0.36	0.01	10.53	284.30	0.17	81.53	0.69
Plumtree	1994	10-YR	353.23	352.86	0.37	0.36	0.02	197.57	494.04	49.40	133.39	0.97
Plumtree	1994	50-YR	354.53	354.14	0.39	0.37	0.01	499.27	702.12	193.62	171.19	1.20
Plumtree	1994	100-YR	355.11	354.72	0.38	0.36	0.01	681.49	784.28	299.23	176.56	1.23
Plumtree	1994	7-30-2016	355.68	355.30	0.38	0.35	0.00	882.09	872.17	402.74	188.61	1.28
Plumtree	1888	1-YR	350.59	350.34	0.25	0.06	0.01	8.36	179.81	5.83	49.34	0.56
Plumtree	1888	2-YR	351.29	351.00	0.29	0.06	0.01	31.39	243.68	19.93	73.28	0.67
Plumtree	1888	10-YR	352.85	352.55	0.31	0.06	0.01	187.40	415.36	138.25	135.25	0.90
Plumtree	1888	50-YR	354.15	353.80	0.35	0.06	0.02	432.89	599.77	362.34	160.47	1.17
Plumtree	1888	100-YR	354.74	354.38	0.36	0.07	0.03	578.55	685.11	501.34	170.01	1.26
Plumtree	1888	7-30-2016	355.33	354.96	0.37	0.07	0.04	742.13	770.00	644.86	180.95	1.33
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	350.35	350.25	0.10	0.41	0.04	50.19	143.81		72.27	0.27
Plumtree	1830	2-YR	351.02	350.92	0.11	0.47	0.08	102.00	192.94	0.06	98.15	0.30
Plumtree	1830	10-YR	352.60	352.47	0.13	0.52	0.14	326.73	351.04	63.23	152.68	0.42
Plumtree	1830	50-YR	353.86	353.67	0.19	0.56	0.12	627.90	551.27	215.83	157.05	0.63
Plumtree	1830	100-YR	354.42	354.21	0.22	0.58	0.10	792.89	660.11	312.00	160.33	0.74
Plumtree	1830	7-30-2016	354.99	354.74	0.25	0.58	0.08	961.38	773.57	422.05	165.72	0.85
Plumtree	1641	1-YR	349.90	349.67	0.23	0.28	0.05	19.94	174.05	0.01	31.21	0.53
Plumtree	1641	2-YR	350.47	350.10	0.37	0.39	0.08	37.56	255.59	1.84	65.80	0.86
Plumtree	1641	10-YR	351.94	351.34	0.60	0.62	0.12	140.57	489.06	111.36	116.71	1.62
Plumtree	1641	50-YR	353.18	352.60	0.58	0.67	0.08	311.85	680.45	402.70	148.16	1.85
Plumtree	1641	100-YR	353.74	353.18	0.56	0.64	0.08	413.25	763.30	588.45	157.83	1.89
Plumtree	1641	7-30-2016	354.33	353.80	0.52	0.57	0.07	528.34	835.19	793.48	167.82	1.85
Plumtree	1463	1-YR	349.57	349.50	0.07	0.36	0.01	3.92	187.01	3.07	98.09	0.16
Plumtree	1463	2-YR	350.00	349.89	0.11	0.43	0.01	18.80	266.47	9.73	117.70	0.24
Plumtree	1463	10-YR	351.20	350.98	0.22	0.51	0.01	135.65	539.98	65.37	147.91	0.54
Plumtree	1463	50-YR	352.42	352.13	0.30	0.46	0.04	367.52	844.27	183.21	181.84	0.79
Plumtree	1463	100-YR	353.03	352.72	0.31	0.41	0.05	522.58	977.65	264.78	195.20	0.85
Plumtree	1463	7-30-2016	353.69	353.39	0.29	0.35	0.05	696.93	1089.60	370.47	206.47	0.84
Plumtree	1291	1-YR	349.21	349.04	0.17	0.64	0.00	159.15	248.85		220.05	0.55
Plumtree	1291	2-YR	349.56	349.38	0.19	0.59	0.01	270.94	310.00	0.06	239.14	0.68
Plumtree	1291	10-YR	350.68	350.50	0.18	0.47	0.02	836.45	473.55	6.00	314.30	0.82
Plumtree	1291	50-YR	351.92	351.76	0.16	0.38	0.01	1693.97	625.93	31.10	396.89	0.81
Plumtree	1291	100-YR	352.57	352.42	0.15	0.33	0.00	2261.18	682.92	50.90	413.55	0.75
Plumtree	1291	7-30-2016	353.29	353.15	0.14	0.30	0.00	2952.81	751.07	78.11	422.07	0.70
Plumtree	1124	1-YR	348.57	348.35	0.21	0.46	0.03	144.59	263.41		243.41	0.68
Plumtree	1124	2-YR	348.96	348.81	0.15	0.37	0.01	295.12	285.88		261.49	0.58
Plumtree	1124	10-YR	350.19	350.07	0.12	0.30	0.00	911.34	403.64	1.01	281.73	0.56
Plumtree	1124	50-YR	351.53	351.41	0.13	0.25	0.00	1775.59	559.09	16.31	311.21	0.59
Plumtree	1124	100-YR	352.23	352.10	0.13	0.24	0.00	2307.64	650.29	37.07	325.49	0.61
Plumtree	1124	7-30-2016	352.99	352.85	0.14	0.23	0.01	2950.35	758.38	73.27	337.57	0.65
Plumtree	994	1-YR	348.08	347.96	0.13	0.25	0.00	143.78	264.22		183.00	0.42
Plumtree	994	2-YR	348.58	348.47	0.11	0.19	0.00	264.37	316.63		206.46	0.38
Plumtree	994	10-YR	349.89	349.75	0.13	0.17	0.00	752.10	562.30	1.59	235.38	0.49
Plumtree	994	50-YR	351.28	351.11	0.16	0.16	0.00	1461.15	868.79	21.07	271.54	0.59
Plumtree	994	100-YR	351.99	351.81	0.18	0.15	0.00	1903.41	1046.53	45.06	288.19	0.64

HEC-RAS Plan: B River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	994	7-30-2016	352.75	352.55	0.20	0.15	0.01	2446.40	1251.88	83.72	303.86	0.70
Plumtree	911	1-YR	347.82	347.65	0.17	0.54	0.01	153.68	254.32		193.54	0.55
Plumtree	911	2-YR	348.39	348.27	0.12	0.47	0.03	303.96	277.04		213.59	0.43
Plumtree	911	10-YR	349.71	349.59	0.13	0.34	0.01	872.43	439.84	3.73	239.09	0.54
Plumtree	911	50-YR	351.11	350.96	0.15	0.30	0.01	1686.17	639.86	24.97	273.53	0.65
Plumtree	911	100-YR	351.83	351.66	0.17	0.28	0.01	2197.30	751.78	45.92	288.71	0.70
Plumtree	911	7-30-2016	352.60	352.42	0.18	0.27	0.01	2823.78	880.42	77.81	303.31	0.76
Plumtree	762	1-YR	347.27	347.00	0.27	0.19	0.05	97.32	310.68	0.00	66.72	0.72
Plumtree	762	2-YR	347.89	347.52	0.38	0.21	0.07	135.97	442.37	2.66	161.19	0.99
Plumtree	762	10-YR	349.36	349.12	0.24	0.17	0.03	572.33	636.09	107.59	242.04	0.80
Plumtree	762	50-YR	350.81	350.58	0.22	0.15	0.02	1162.24	872.19	316.56	281.55	0.82
Plumtree	762	100-YR	351.54	351.31	0.23	0.14	0.02	1530.64	1008.77	455.60	300.48	0.85
Plumtree	762	7-30-2016	352.32	352.09	0.23	0.14	0.02	1974.05	1162.00	645.95	314.67	0.88
Plumtree	658	1-YR	347.04	346.92	0.12	0.14	0.00	8.35	391.85	7.80	174.69	0.23
Plumtree	658	2-YR	347.62	347.48	0.14	0.13	0.02	37.17	504.58	39.26	225.88	0.28
Plumtree	658	10-YR	349.16	349.02	0.15	0.12	0.02	258.78	798.50	258.72	301.02	0.37
Plumtree	658	50-YR	350.64	350.49	0.15	0.12	0.02	629.26	1100.31	621.43	328.76	0.43
Plumtree	658	100-YR	351.38	351.22	0.16	0.12	0.02	868.73	1277.06	849.21	345.31	0.47
Plumtree	658	7-30-2016	352.16	351.99	0.17	0.12	0.02	1170.86	1483.12	1128.02	363.75	0.52
Plumtree	526	1-YR	346.90	346.78	0.11	0.25	0.01	20.73	324.30	62.97	264.39	0.27
Plumtree	526	2-YR	347.47	347.38	0.09	0.21	0.01	57.10	367.24	156.66	278.77	0.25
Plumtree	526	10-YR	349.02	348.94	0.08	0.17	0.01	218.63	547.46	549.91	311.73	0.28
Plumtree	526	50-YR	350.50	350.41	0.09	0.16	0.01	470.17	773.57	1107.26	340.24	0.34
Plumtree	526	100-YR	351.24	351.14	0.10	0.16	0.01	639.69	904.35	1450.96	352.63	0.37
Plumtree	526	7-30-2016	352.02	351.91	0.11	0.17	0.01	853.17	1058.28	1870.55	365.72	0.41
Plumtree	380	1-YR	346.63	346.39	0.24	1.36	0.09	26.53	380.03	1.45	138.09	0.52
Plumtree	380	2-YR	347.25	347.04	0.20	1.09	0.11	93.10	455.12	32.79	192.08	0.49
Plumtree	380	10-YR	348.84	348.66	0.18	0.78	0.10	381.40	704.73	229.86	219.66	0.53
Plumtree	380	50-YR	350.33	350.13	0.21	0.76	0.12	783.51	1017.30	550.19	236.20	0.64
Plumtree	380	100-YR	351.06	350.84	0.23	0.77	0.13	1030.93	1198.74	765.33	241.67	0.71
Plumtree	380	7-30-2016	351.84	351.59	0.25	0.79	0.14	1333.81	1414.34	1033.85	247.14	0.79
Plumtree	146	1-YR	345.17	343.98	1.19	0.58	0.29		408.00		19.97	2.67
Plumtree	146	2-YR	346.05	344.79	1.26	0.53	0.29	4.80	575.13	1.07	43.37	2.64
Plumtree	146	10-YR	347.96	346.75	1.21	0.45	0.20	224.58	1032.08	59.33	111.86	2.66
Plumtree	146	50-YR	349.45	348.05	1.40	0.45	0.20	658.33	1521.98	170.69	141.74	3.38
Plumtree	146	100-YR	350.16	348.63	1.53	0.46	0.21	960.28	1794.45	240.27	153.62	3.82
Plumtree	146	7-30-2016	350.91	349.23	1.68	0.46	0.22	1354.18	2102.54	325.28	164.30	4.32
Plumtree	63	1-YR	343.79	343.55	0.23				408.00		43.59	0.51
Plumtree	63	2-YR	344.47	344.18	0.29			0.04	580.94	0.02	50.01	0.61
Plumtree	63	10-YR	346.45	345.91	0.54			23.50	1281.72	10.78	84.16	0.97
Plumtree	63	50-YR	348.29	347.54	0.75			137.54	2127.33	86.14	127.03	1.32
Plumtree	63	100-YR	349.17	348.33	0.85			241.37	2594.26	159.37	139.56	1.49
Plumtree	63	7-30-2016	350.11	349.16	0.94			388.93	3129.63	263.45	150.66	1.66

Appendix H-4

Plumtree Branch: Option C Hydraulic Modeling

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

Plumtree Plumtree

Legend

- WS 7-30-2016
- WS 100-YR
- WS 50-YR
- WS 10-YR
- WS 2-YR
- WS 1-YR
- Ground
- LOB
- ROB
- Right Levee

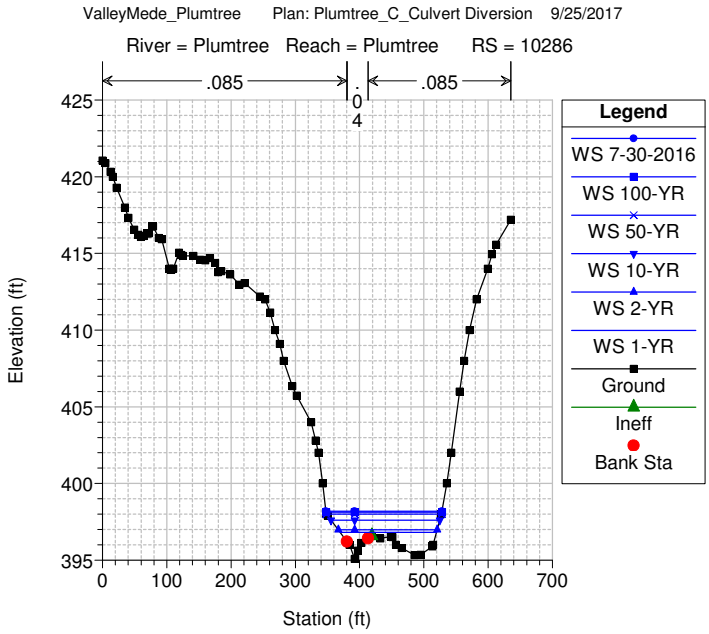
Elevation (ft)

400
390
380
370
360
350
340

0
2000
4000
6000
8000
10000
12000

Main Channel Distance (ft)

380 526 762 911 1124 1291 1463 1641 1830 1994 2153 2331 2485 2589 2759 2900 Frederick Rd 2978 3077 3179 3296 3428 3550 3688 3816 3930 4033 4185 4289 4400 US 40 4636 4745 4845 5000 Longview Dr 5107 5209 5323 5419 5560 5650 Brookmede Rd 5824 5926 6028 6122 6250 Hearthstone Rd 6350 6454 6568 6663 6766 6893 7030 7216 7367 7548 7800 7954 8094 8229 8374 8579 8753 8987 9196 9301 9398 9499 9650 Michaels Way 9814 10044 10286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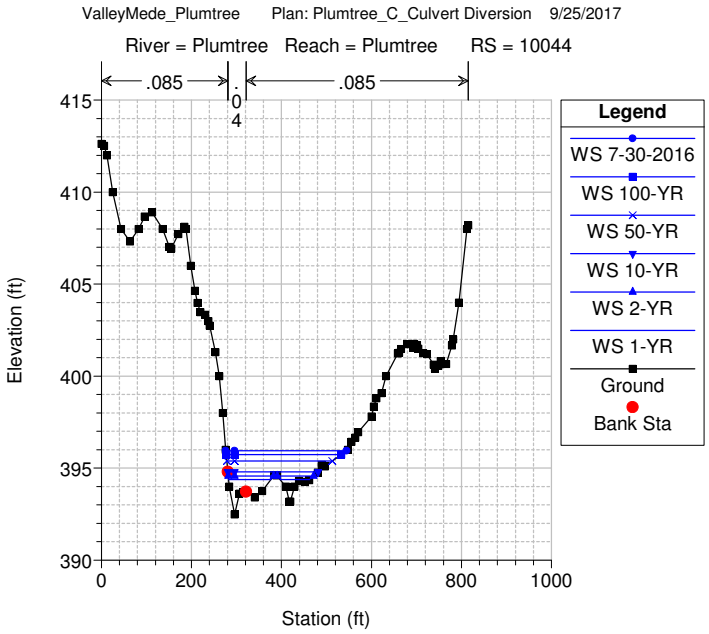
River = Plumtree Reach = Plumtree RS = 10286
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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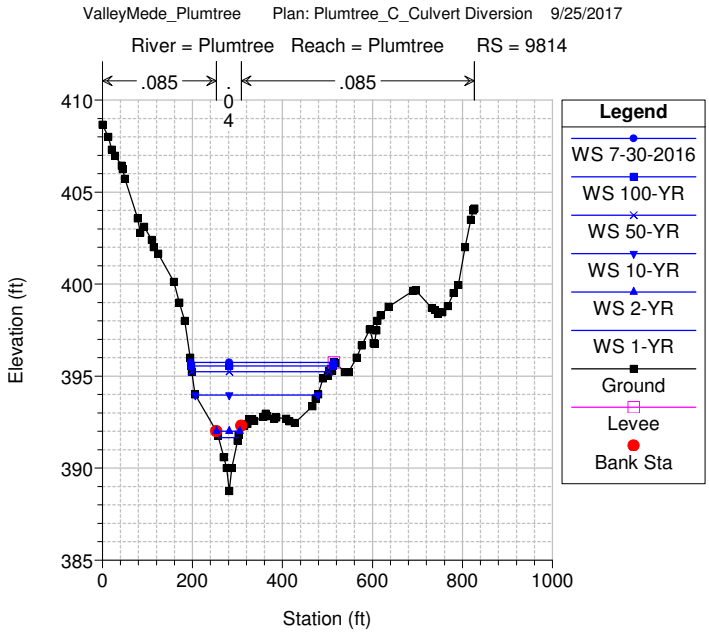
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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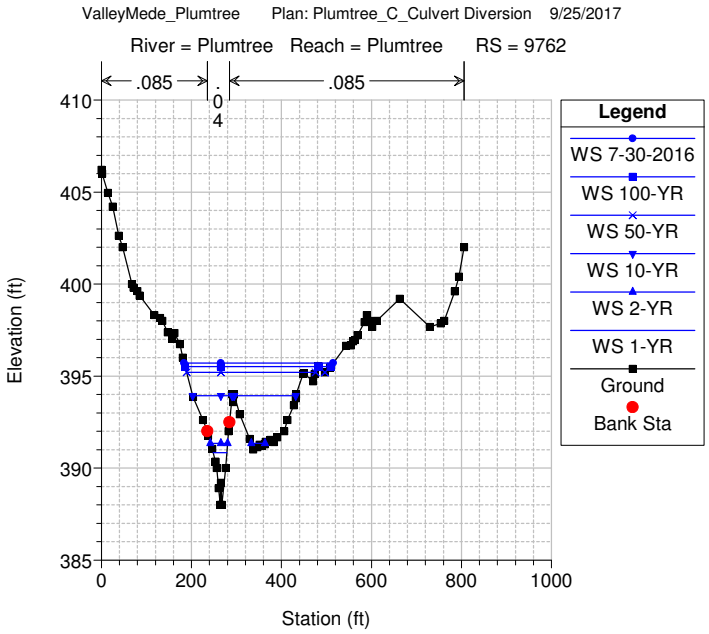
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)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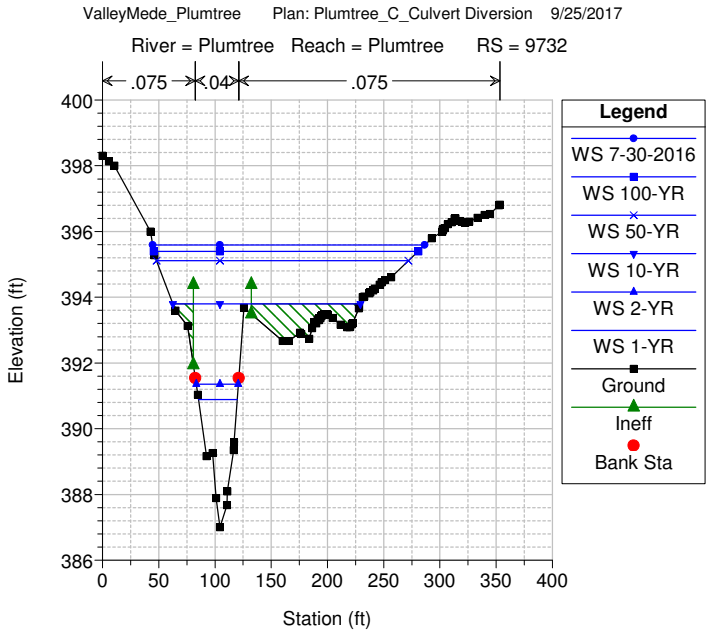
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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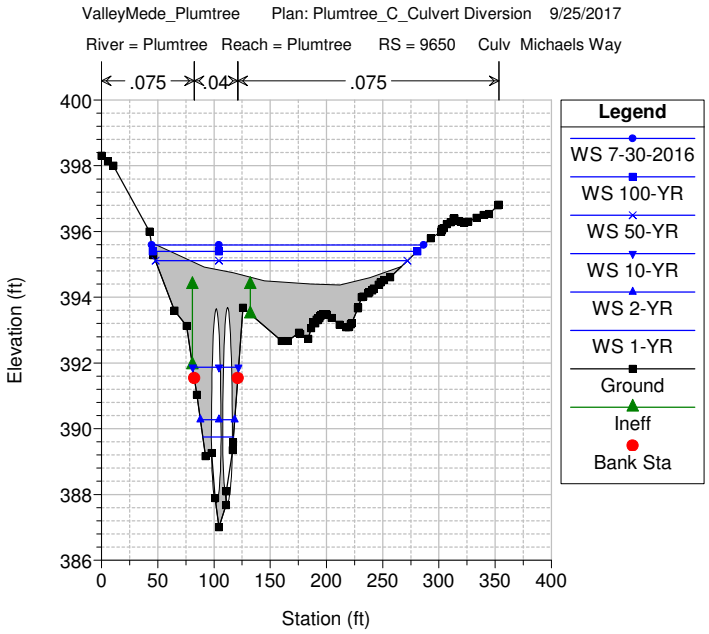
River = Plumtree Reach = Plumtree RS = 9732
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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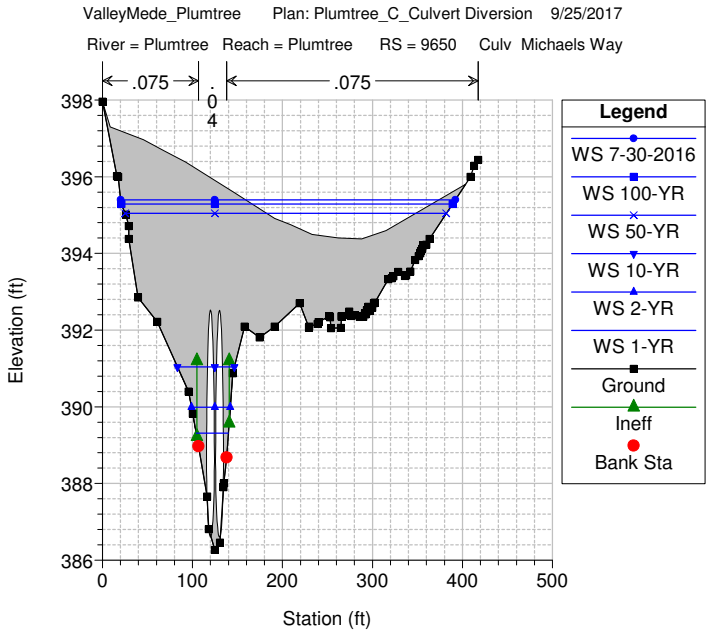
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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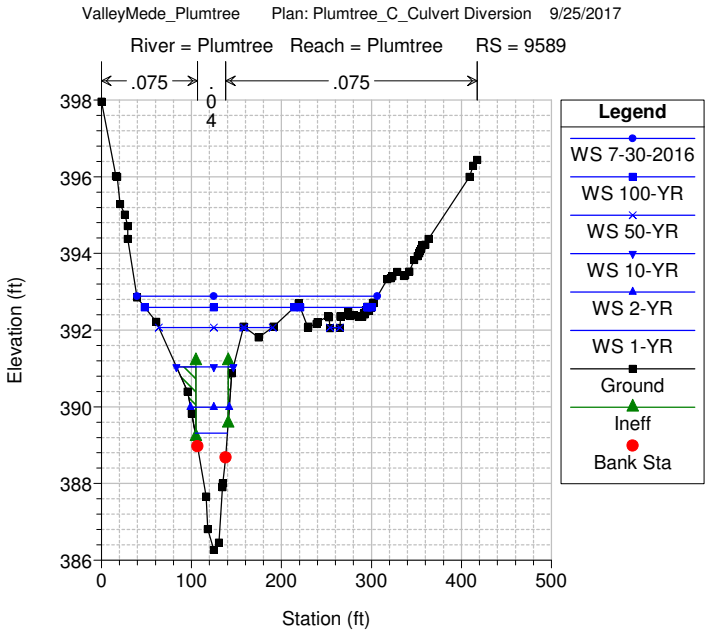
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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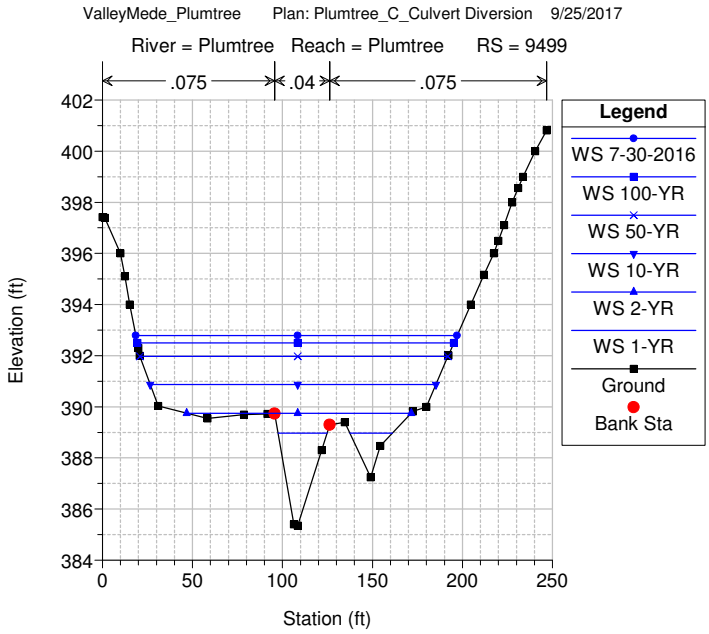
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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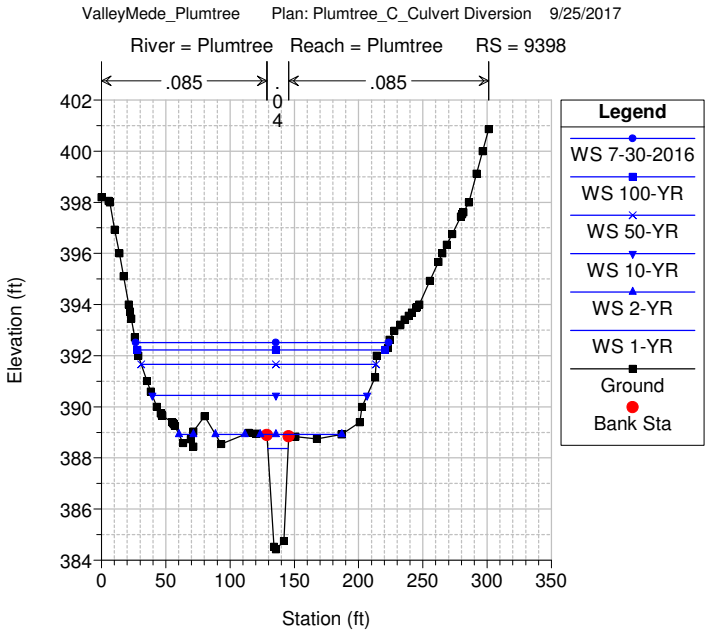
River = Plumtree Reach = Plumtree RS = 9499
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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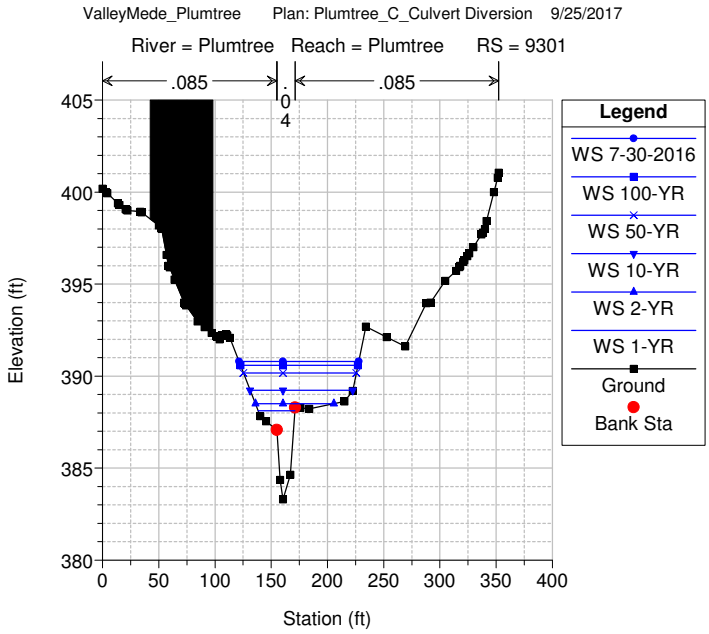
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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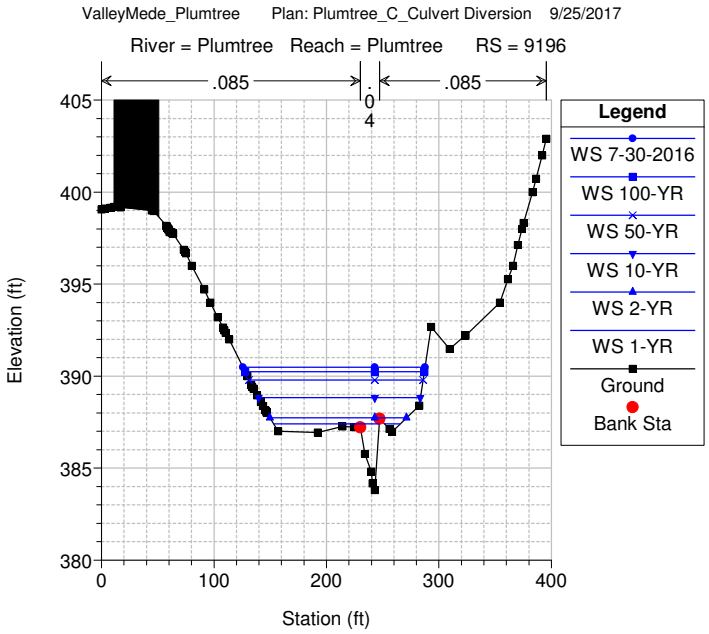
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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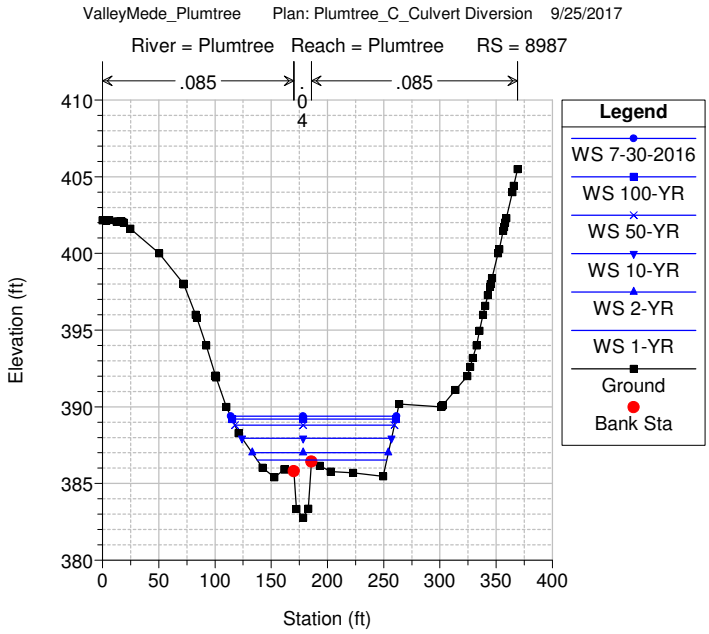
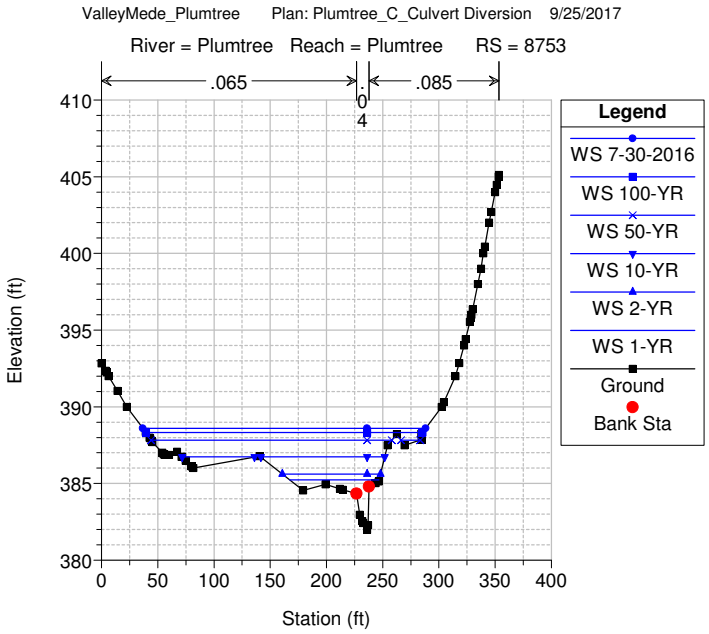
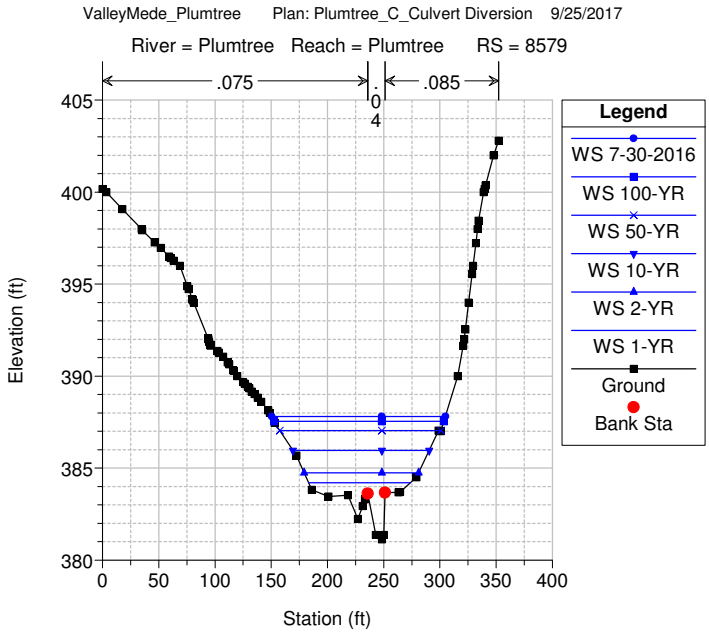
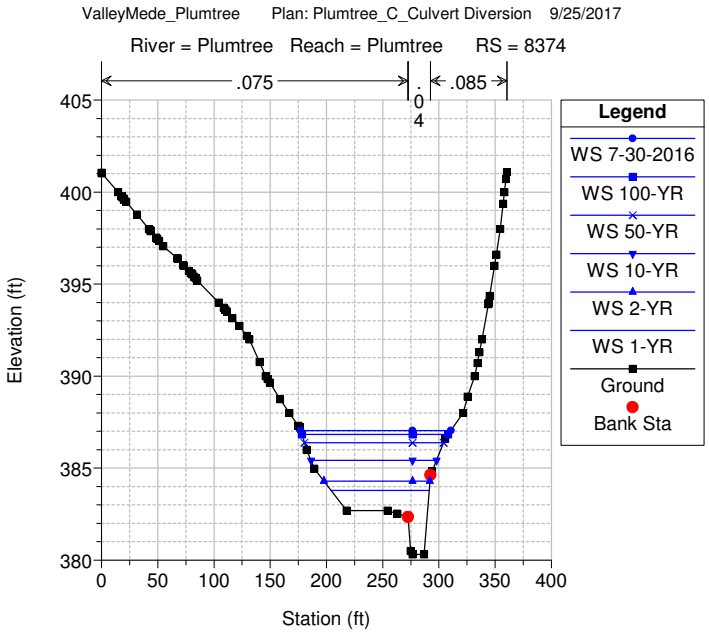
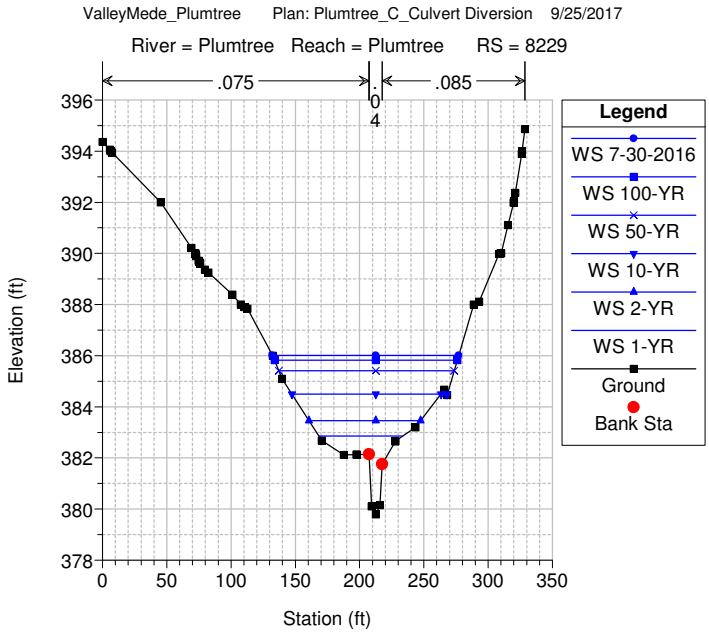
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

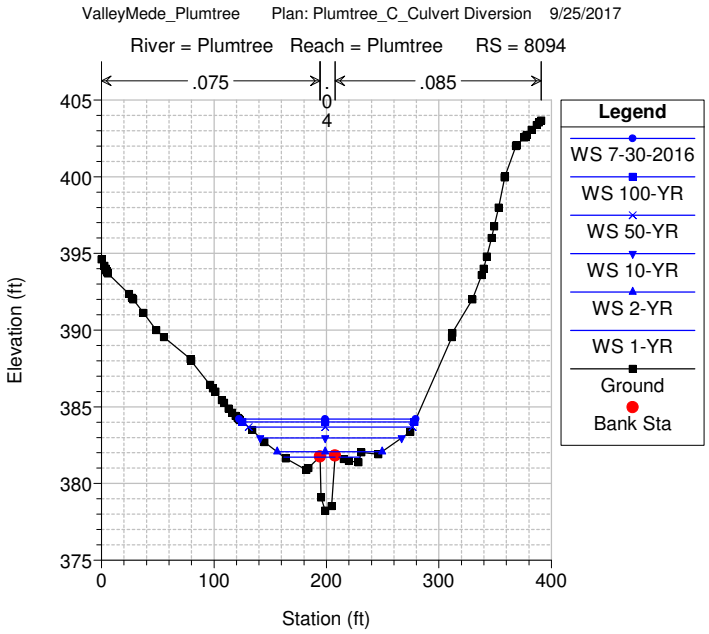

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8987
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

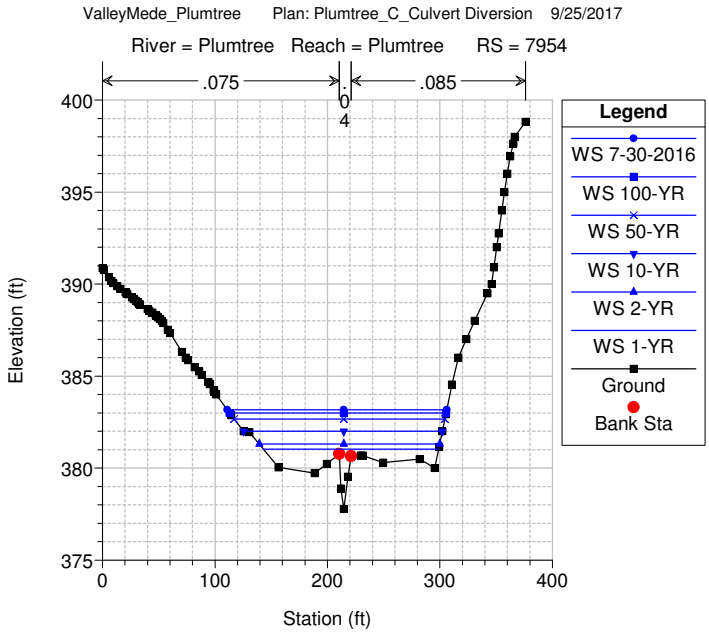

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8753
.065
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

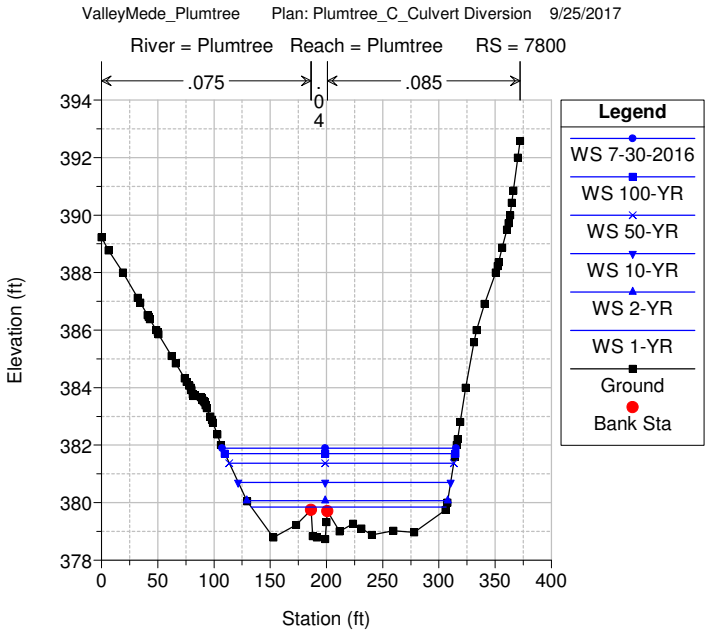

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8579
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

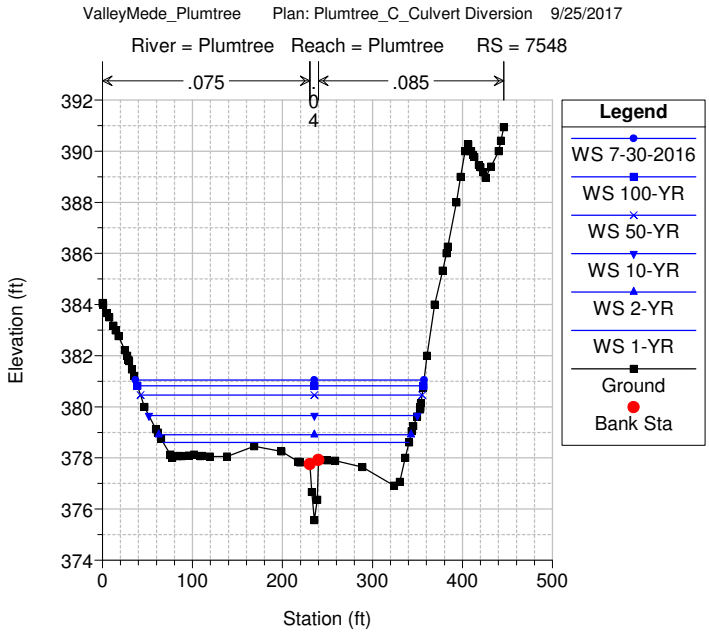

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8374
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

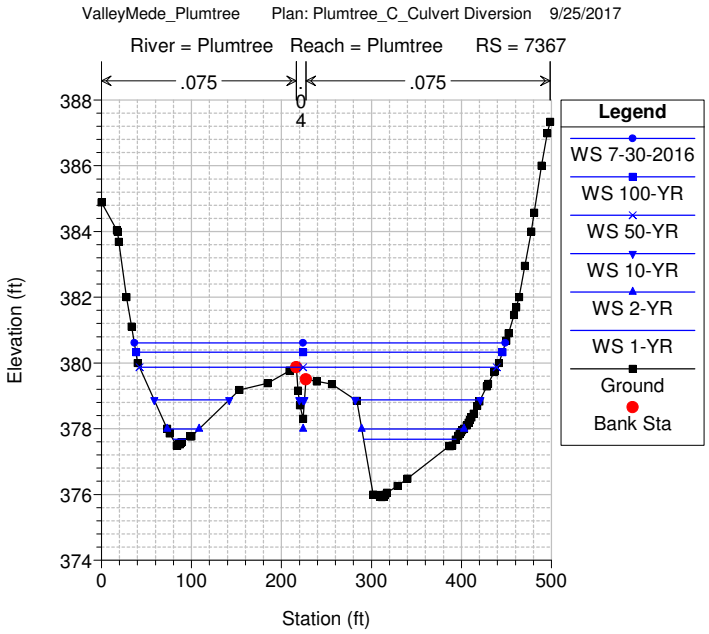

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8229
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

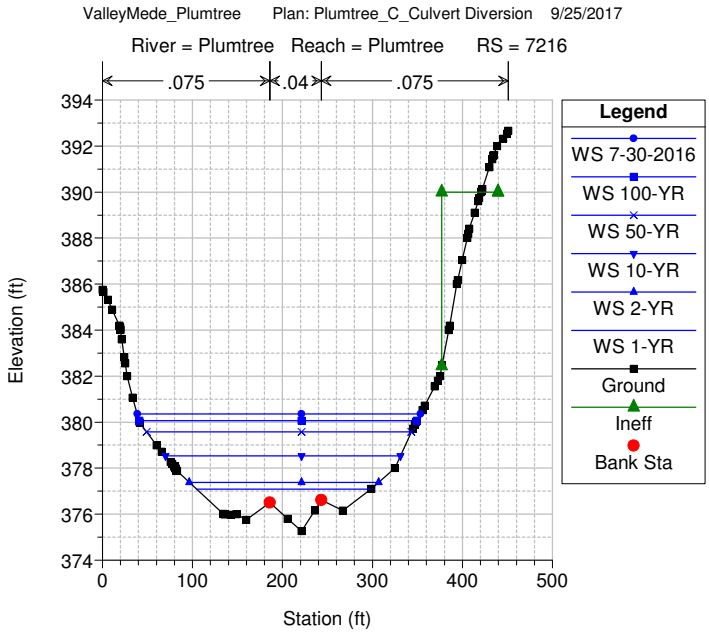

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8094
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

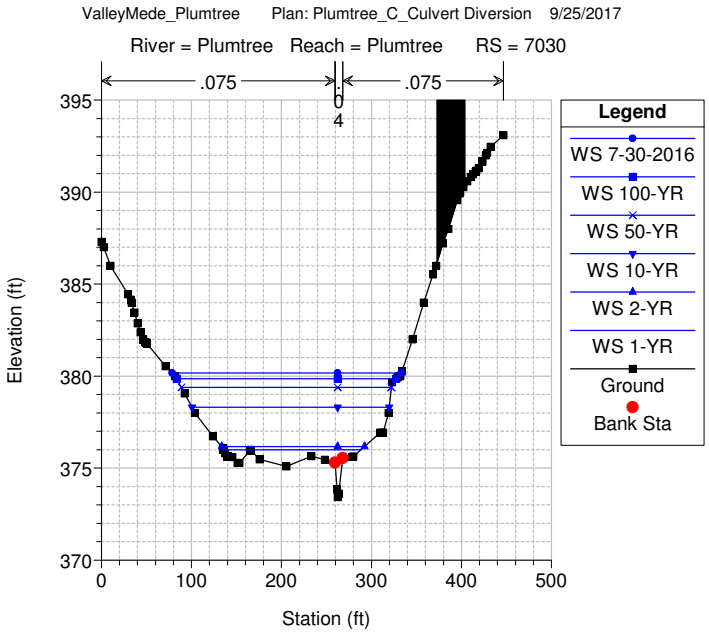

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7954
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

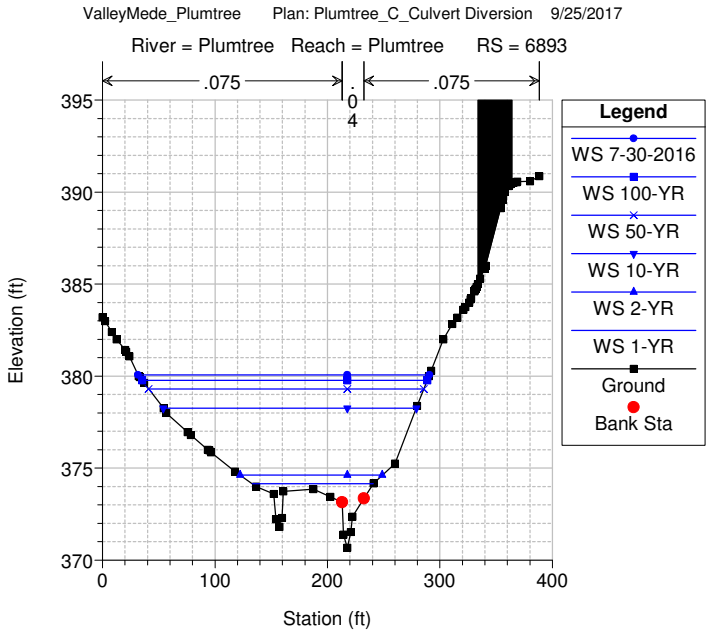

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7800
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

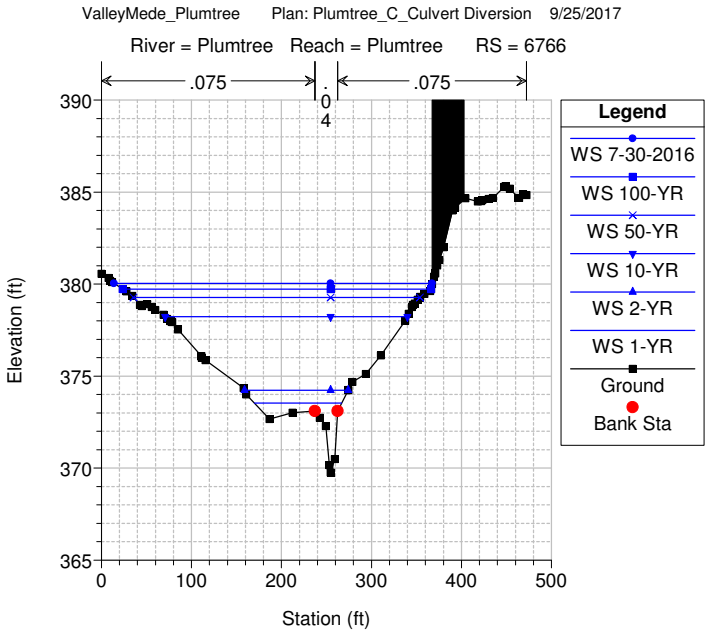

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7548
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

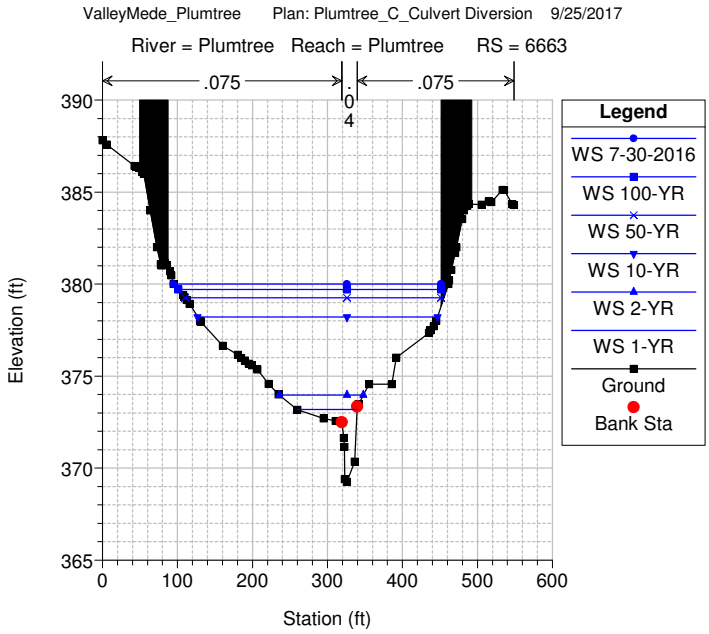

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7367
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

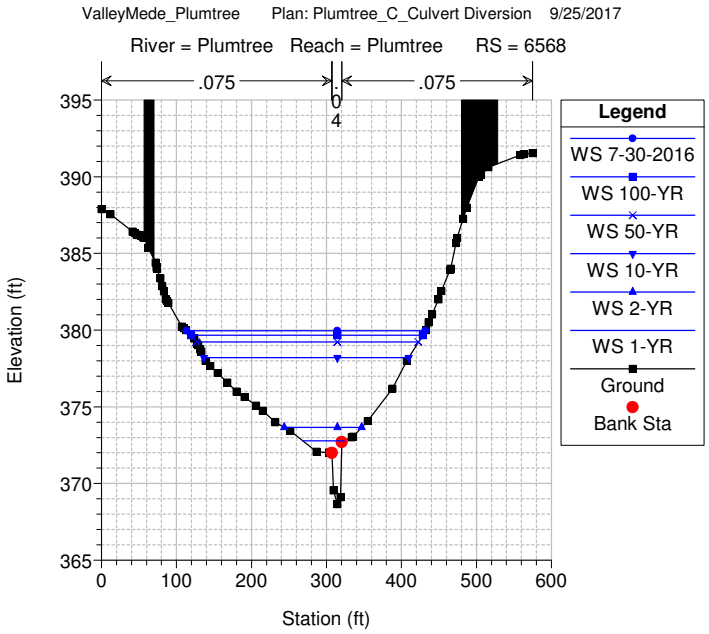

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7216
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

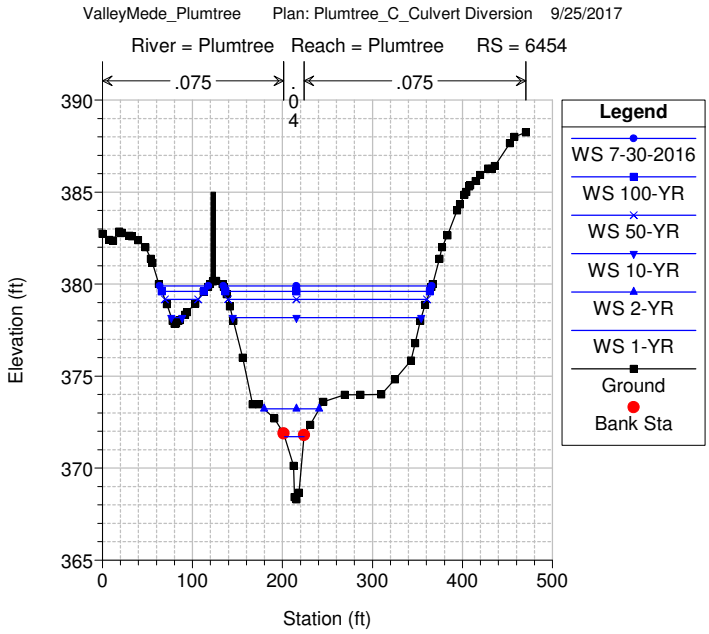

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7030
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

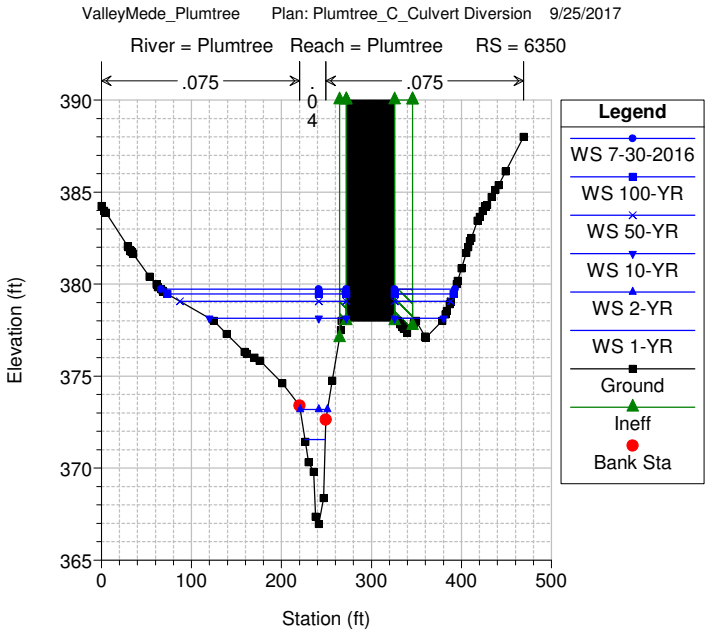

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6893
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

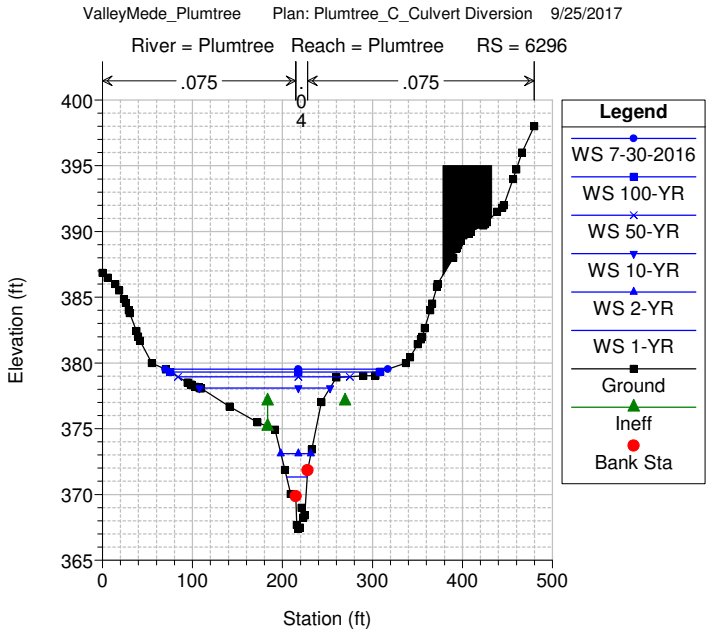

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6766
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

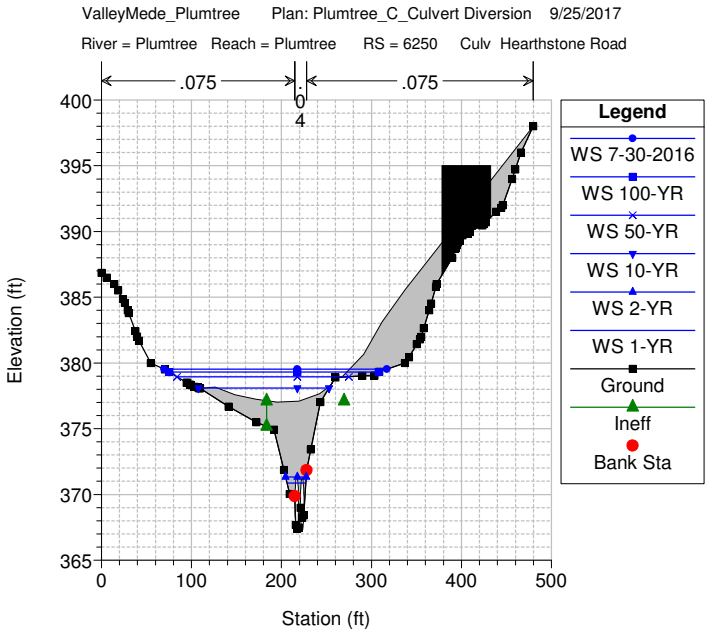

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6663
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

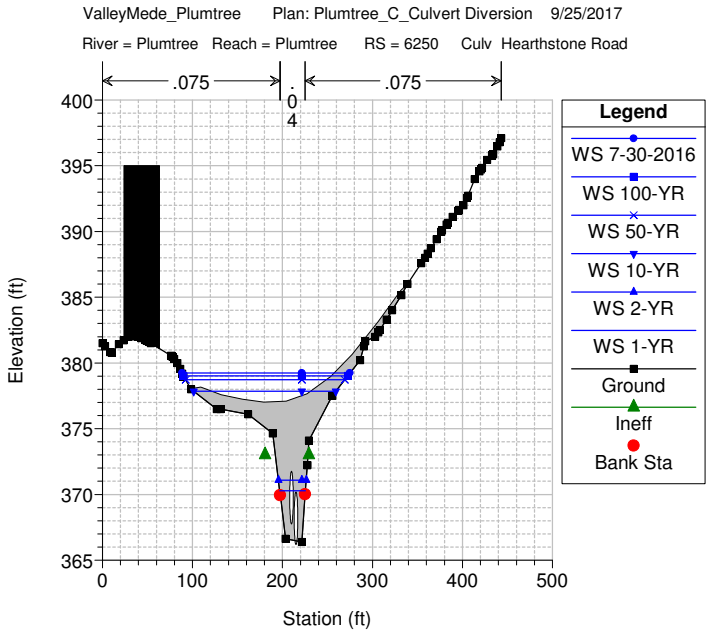

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6568
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

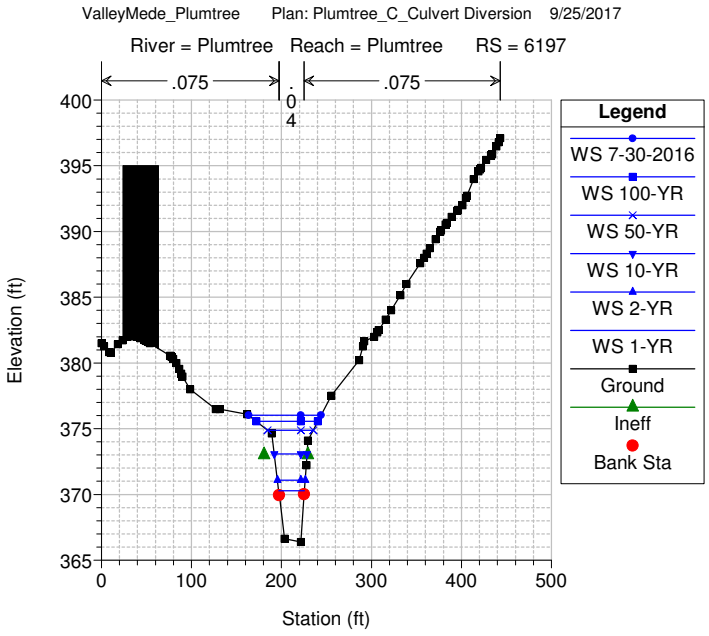

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6454
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

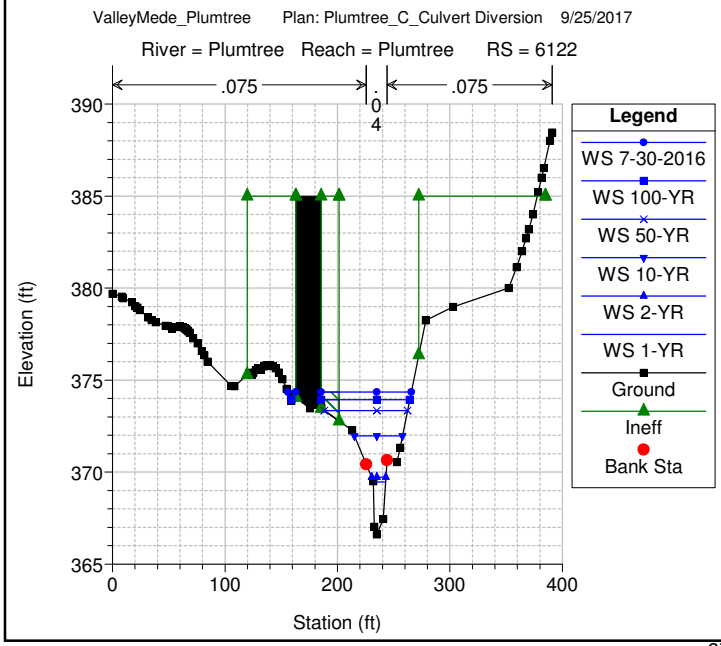

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6350
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

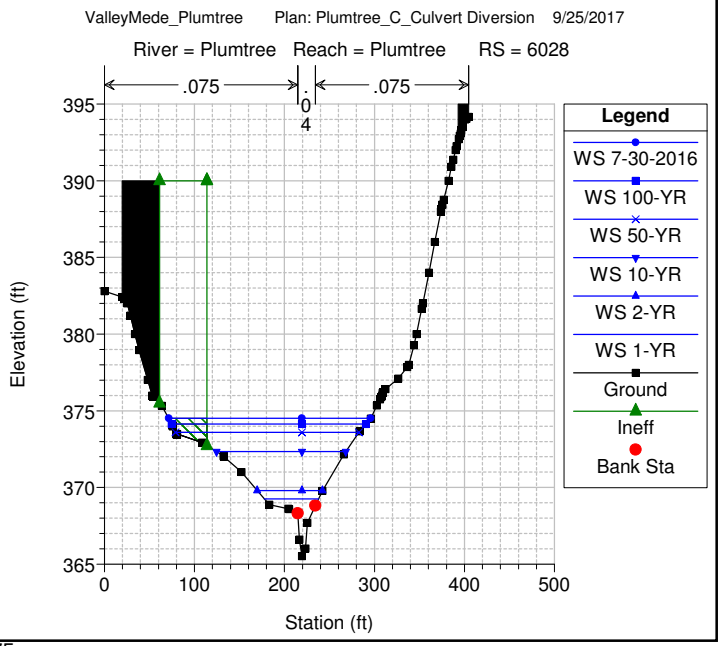

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6296
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

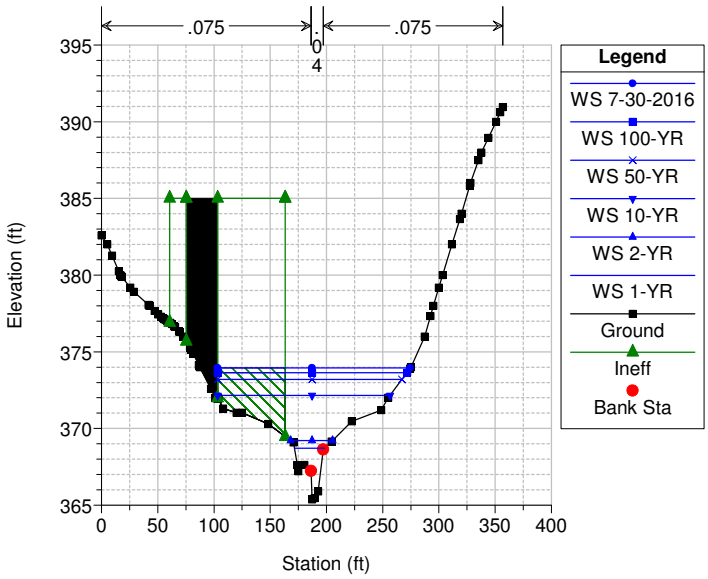

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6197
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6122
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6028
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

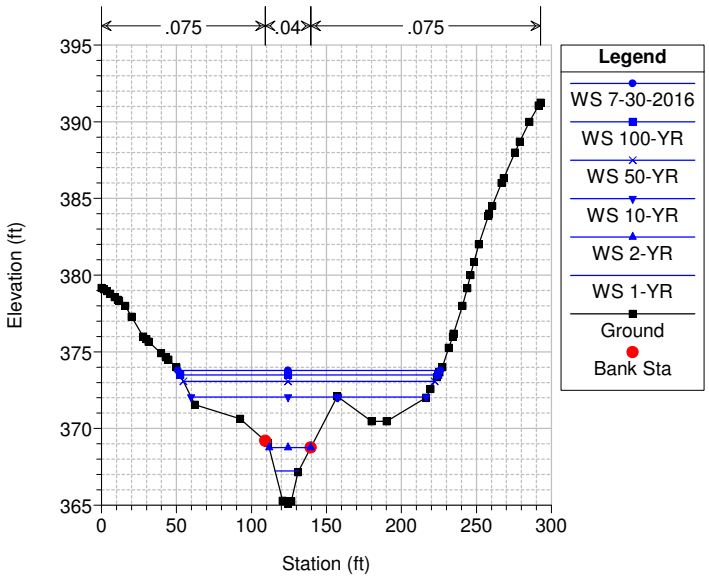
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 5926



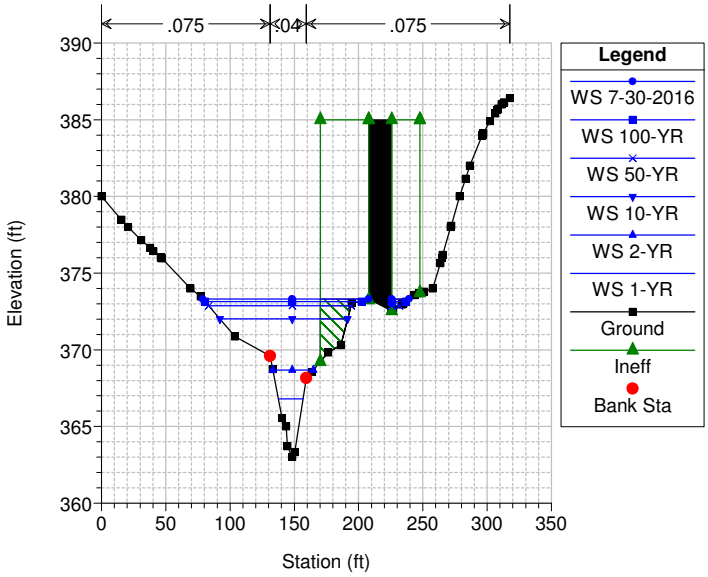
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 5824



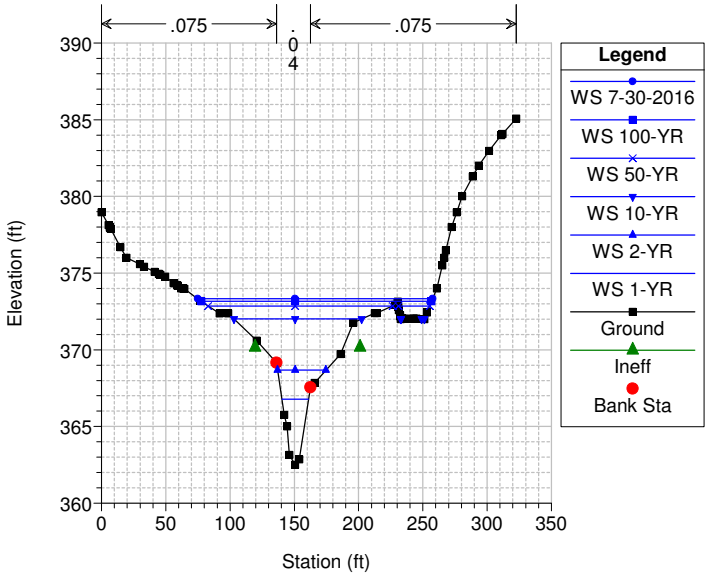
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 5745



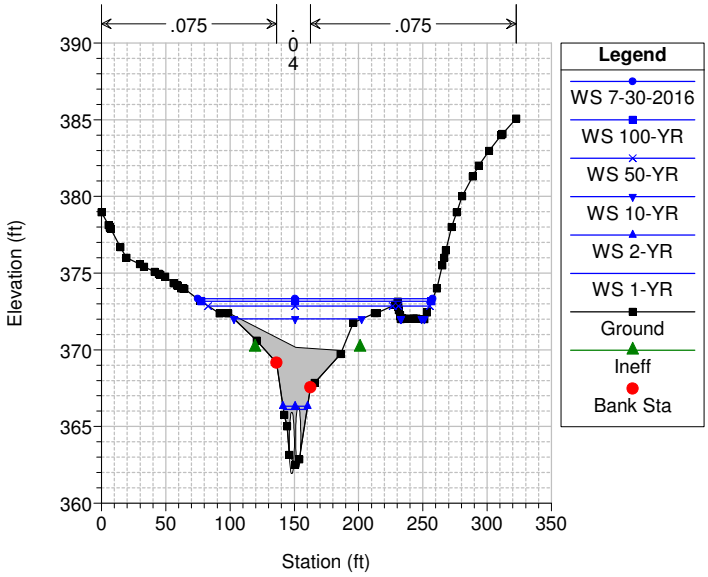
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 5711



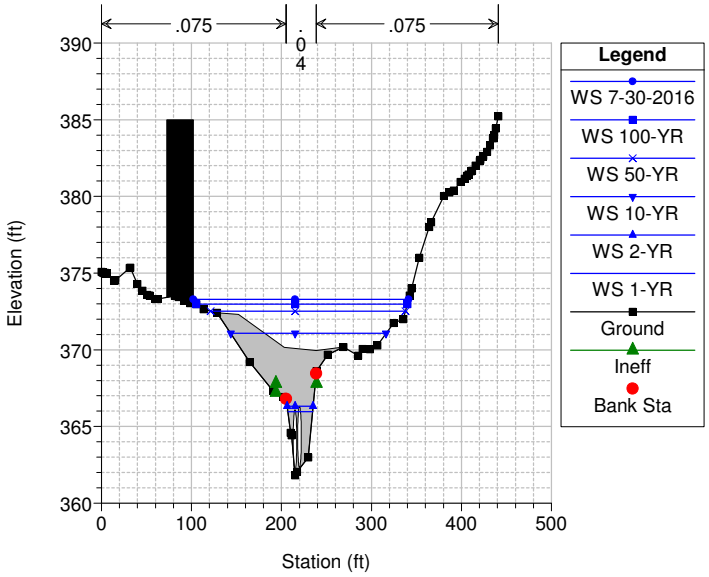
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road



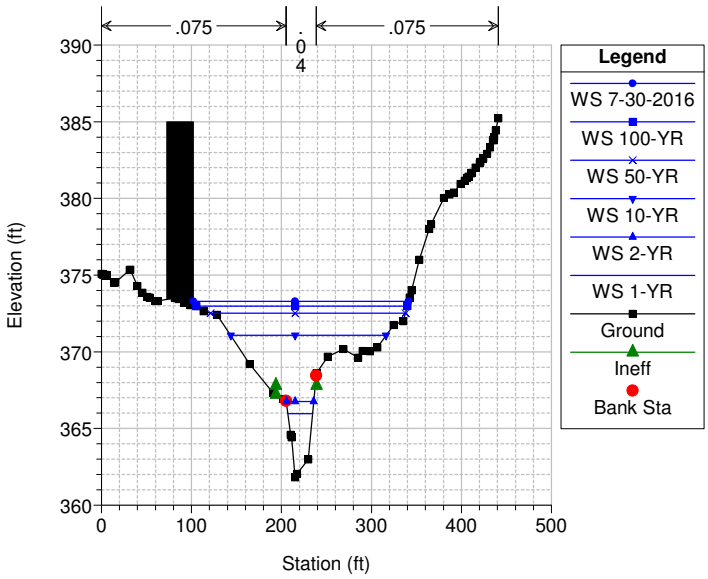
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road



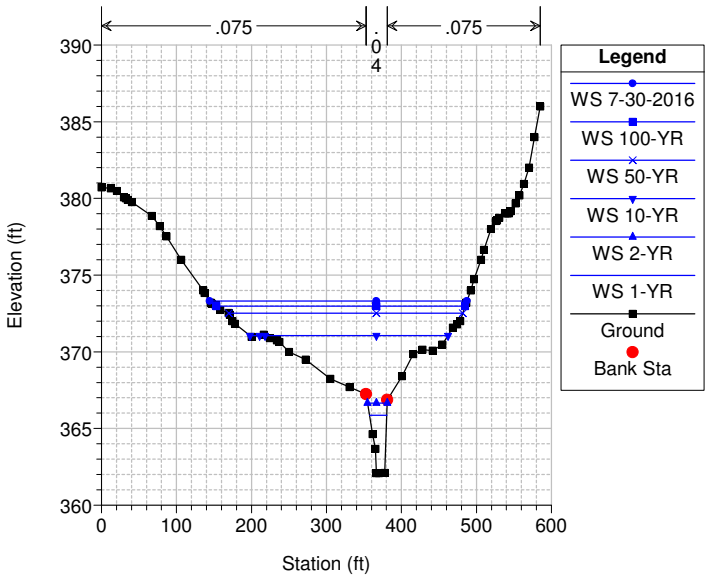
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 5614



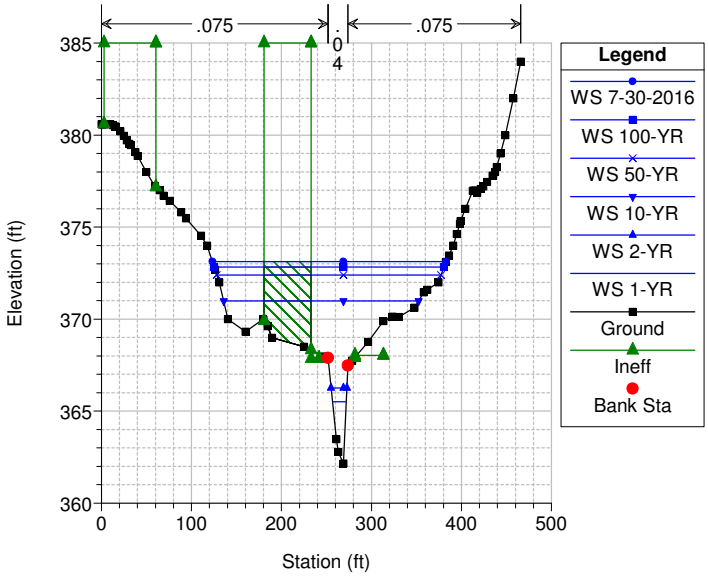
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 5560



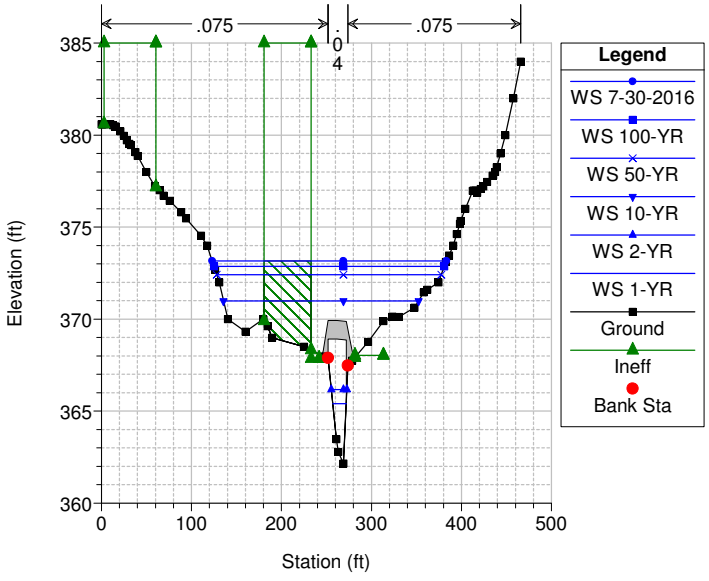
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 5510



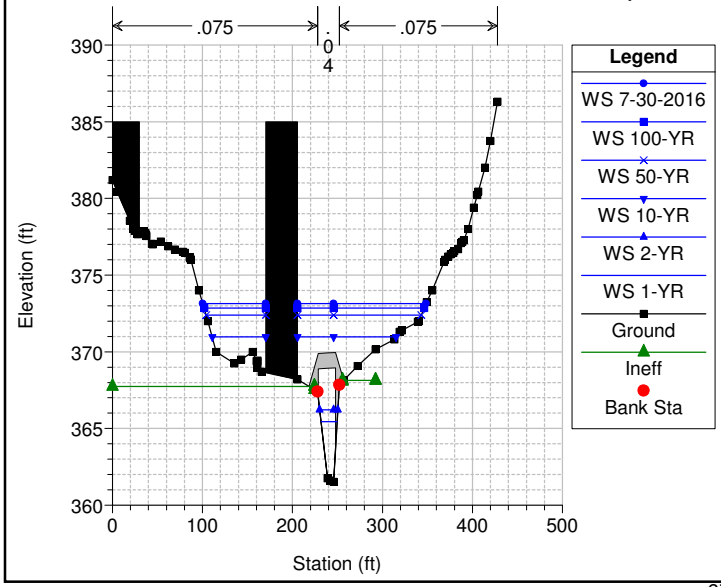
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 5500 BR Driveway



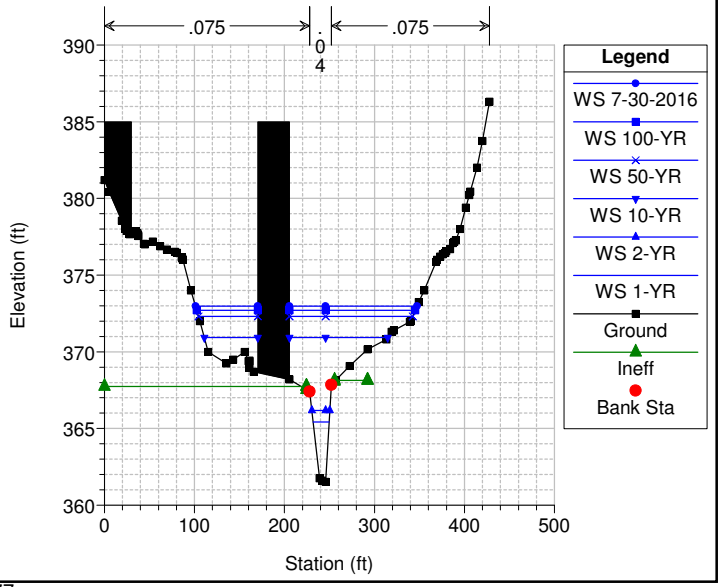
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

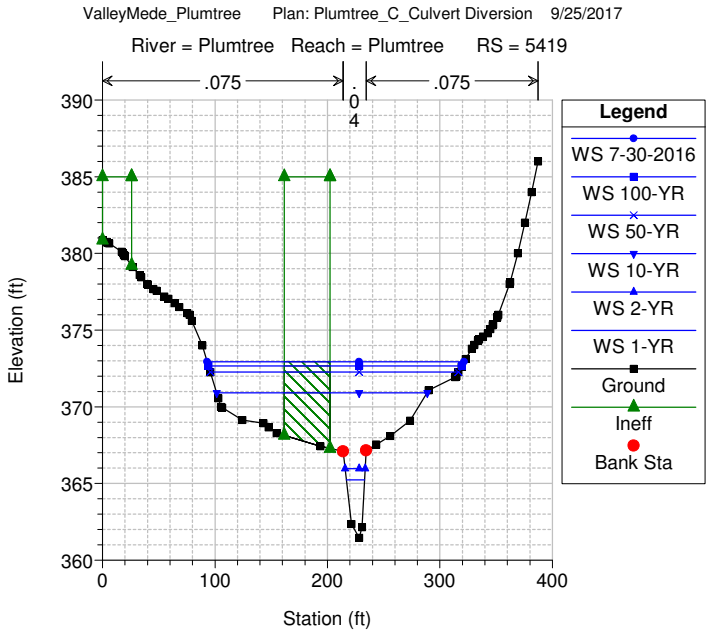
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway

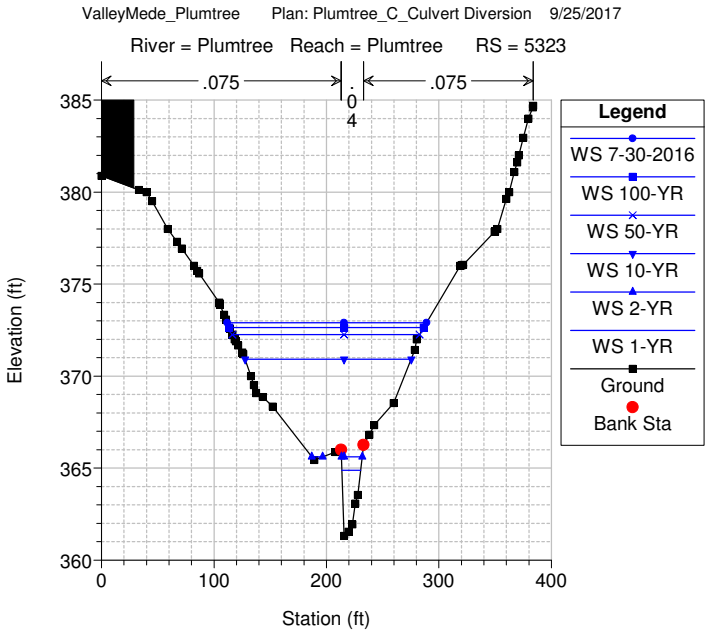


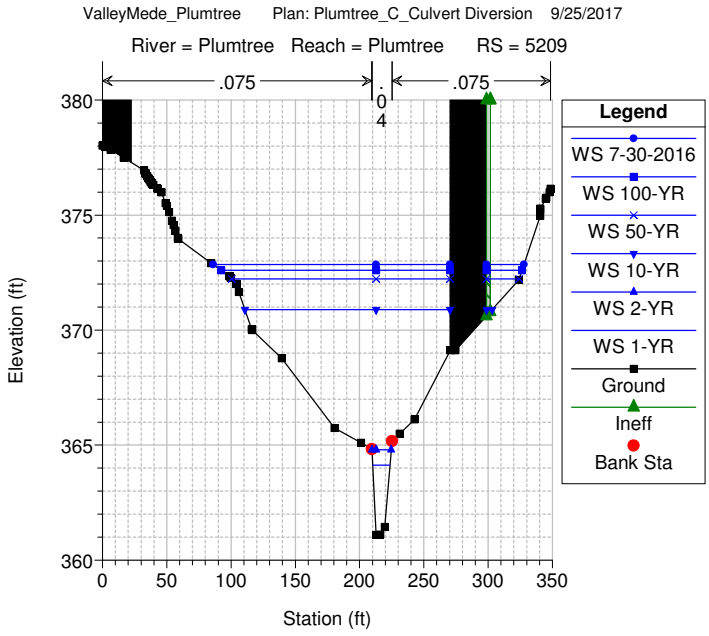
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

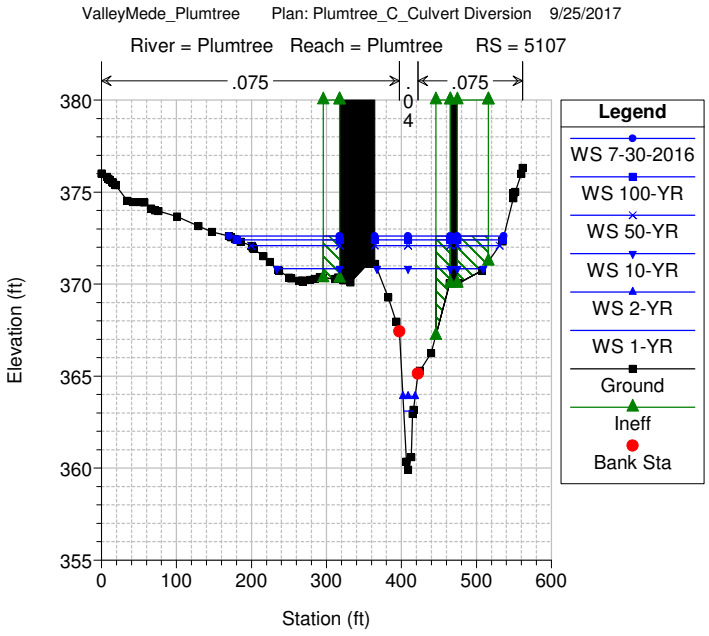
River = Plumtree Reach = Plumtree RS = 5474

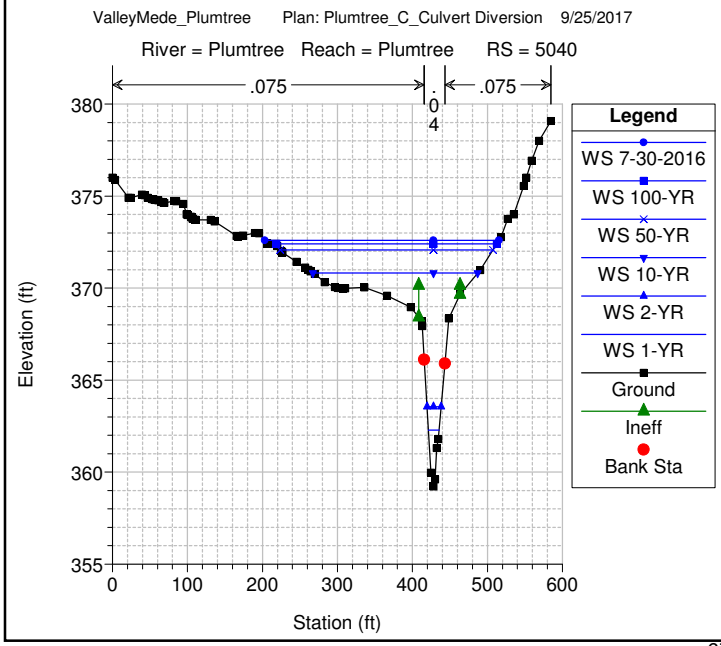


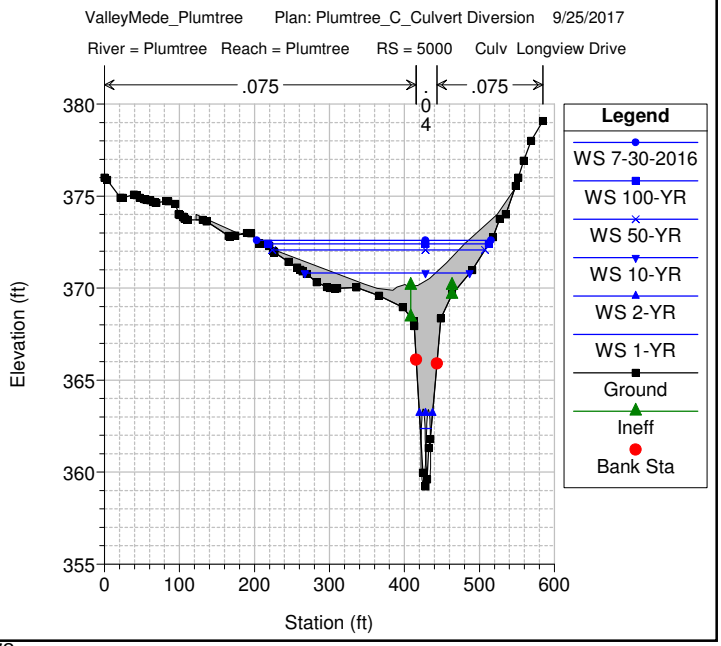

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5419
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

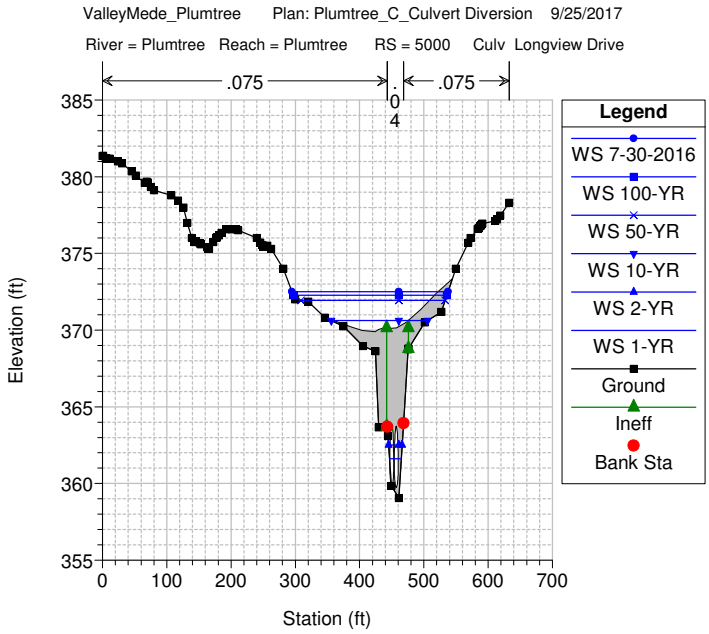

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5323
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

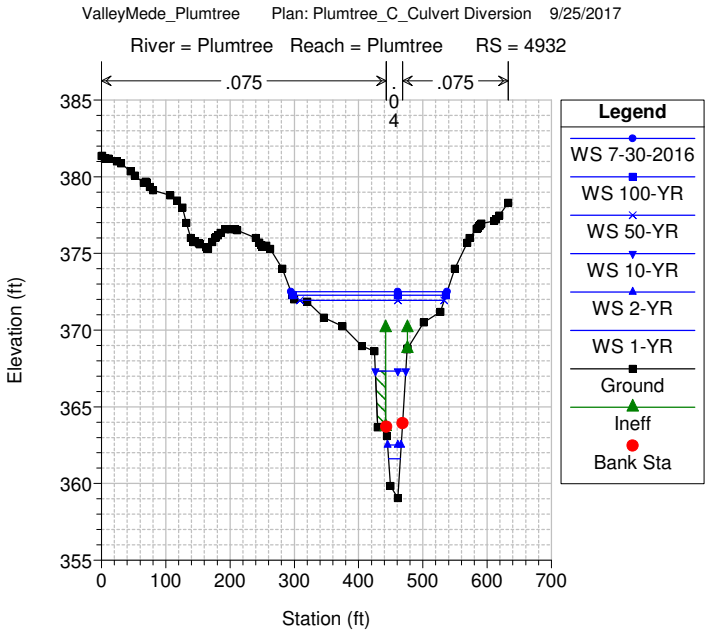

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5209
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

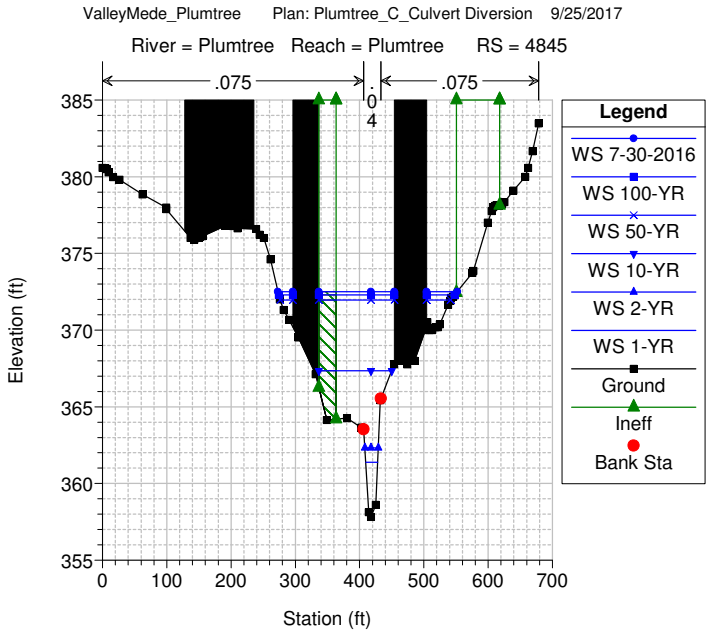

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5107
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

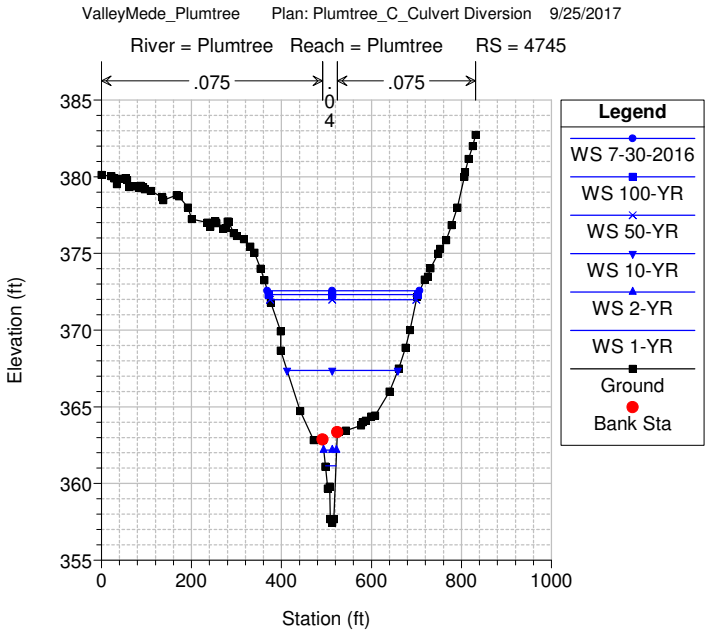

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5040
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

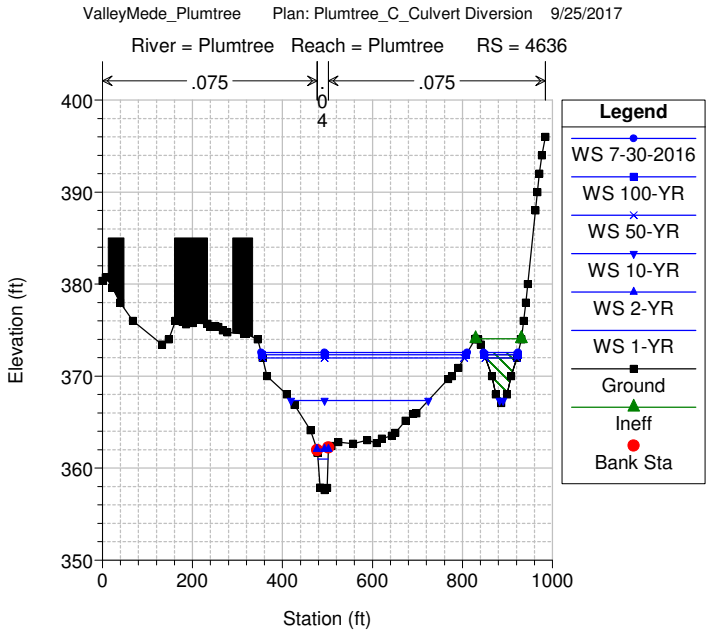

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

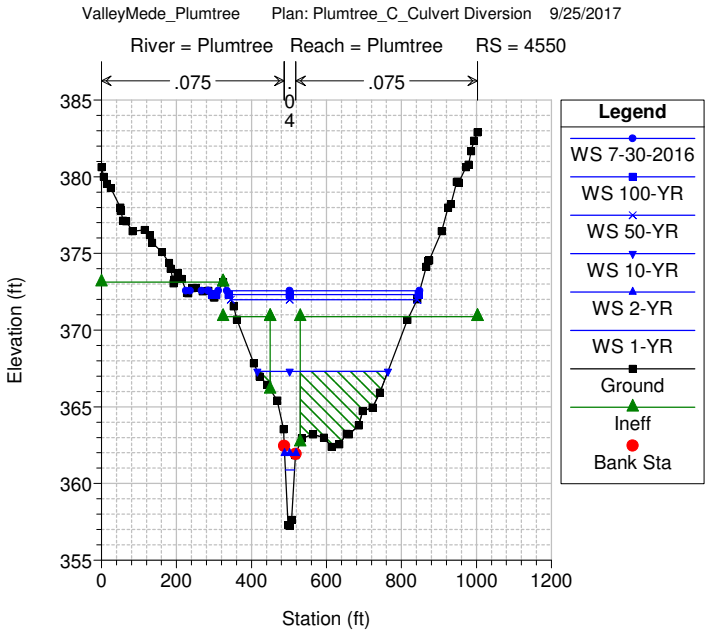

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

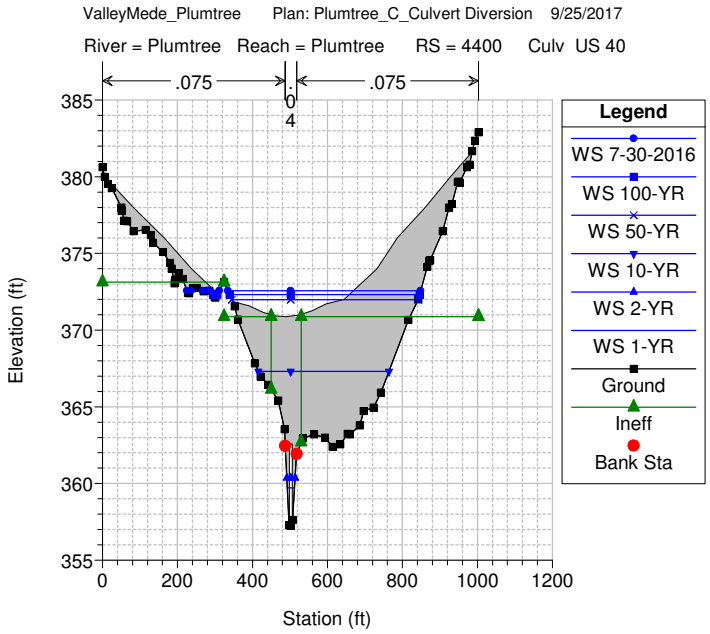

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4932
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

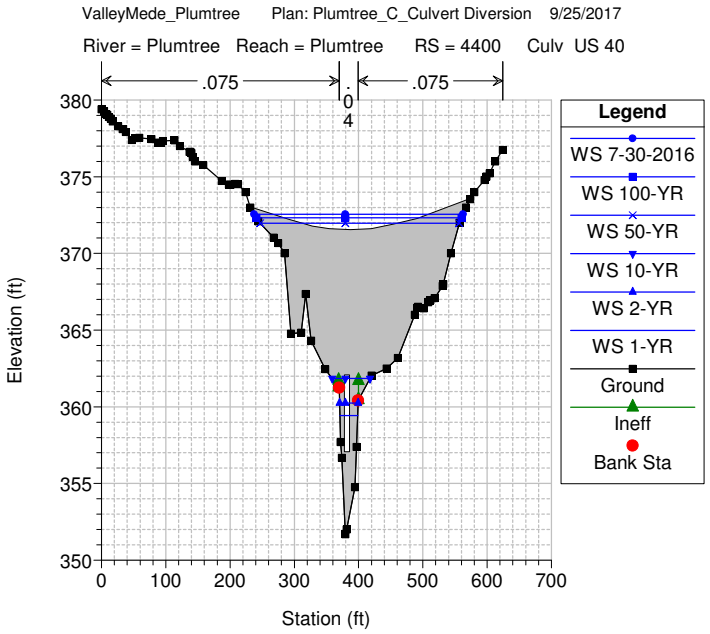

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4845
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

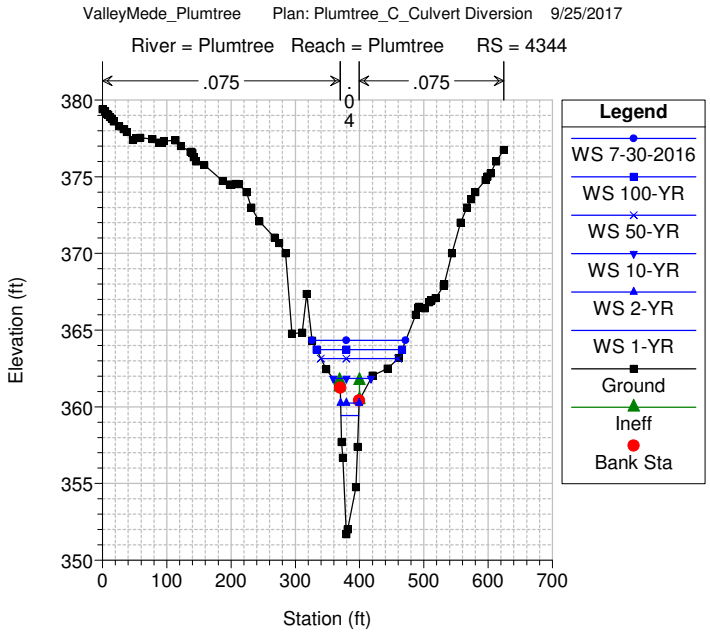

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4745
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

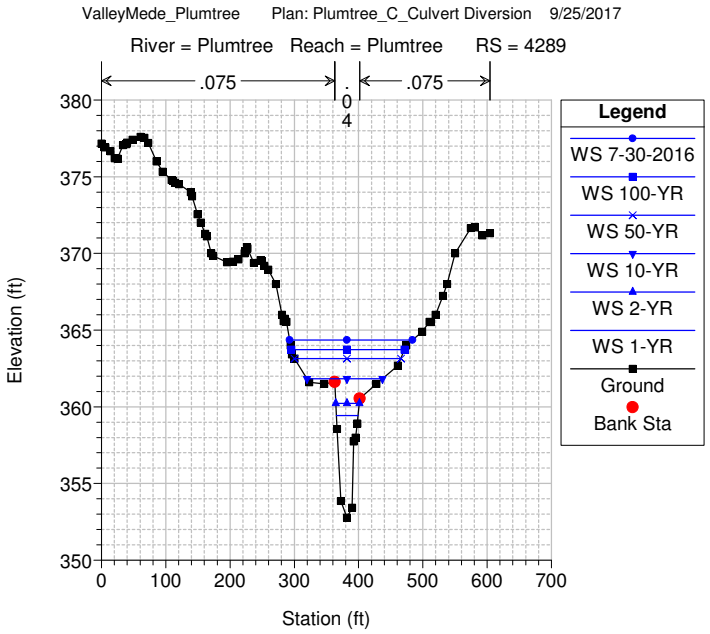

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4636
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

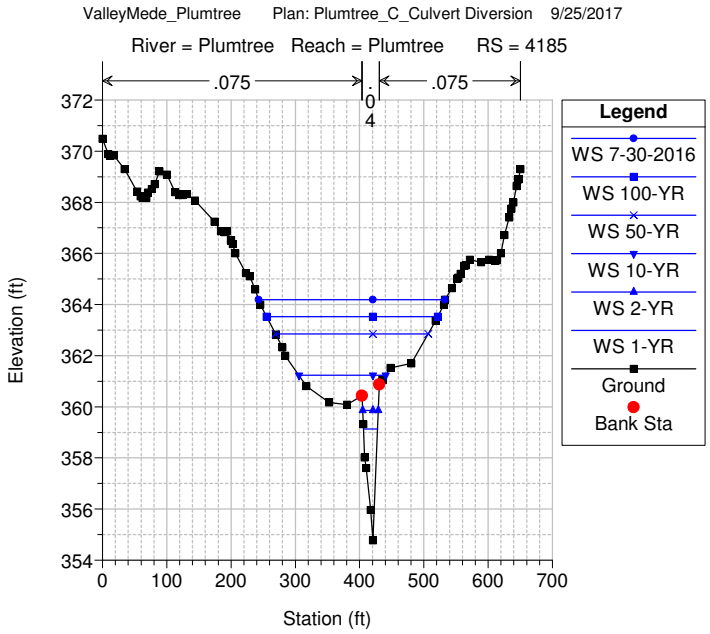

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4550
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

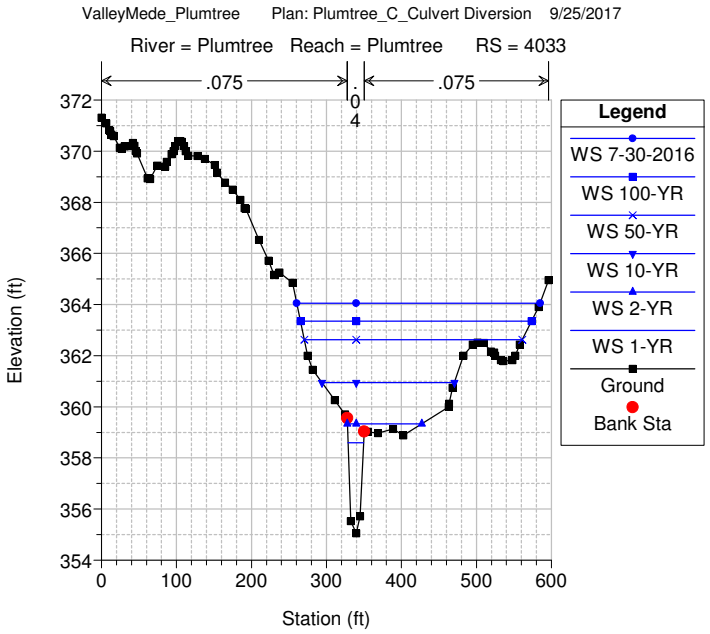

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

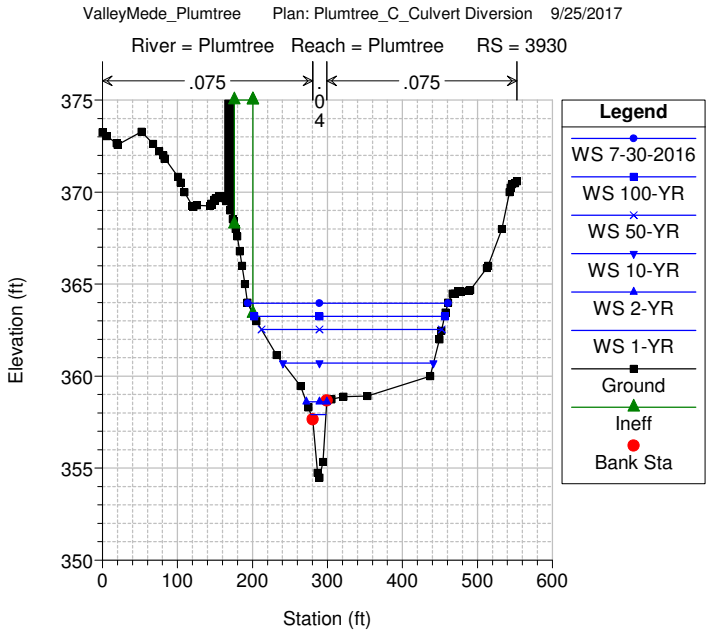

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

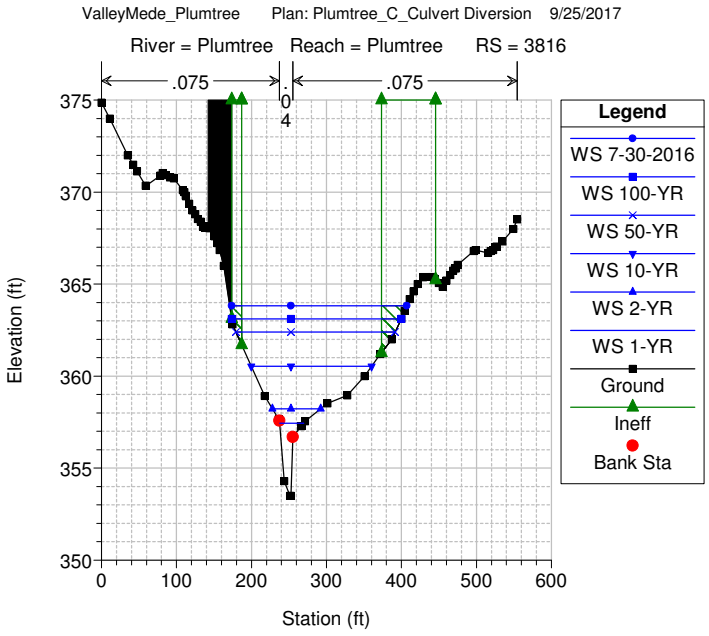

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4344
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

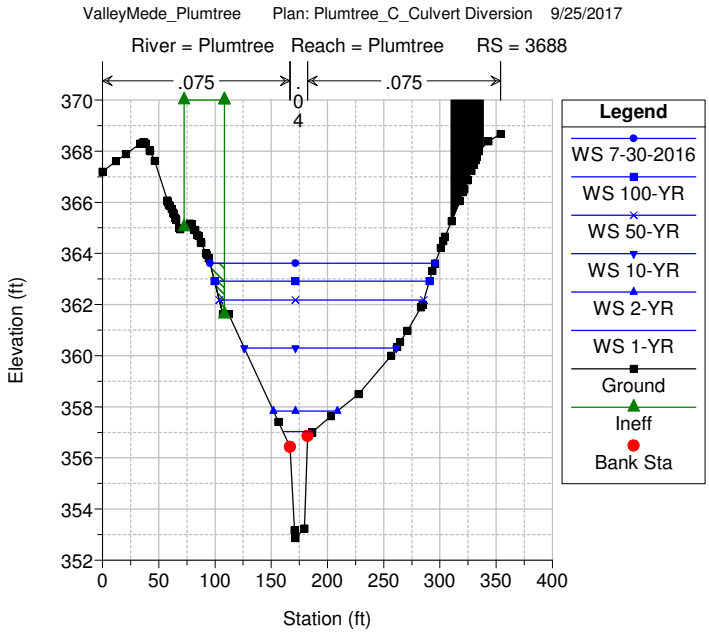

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4289
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

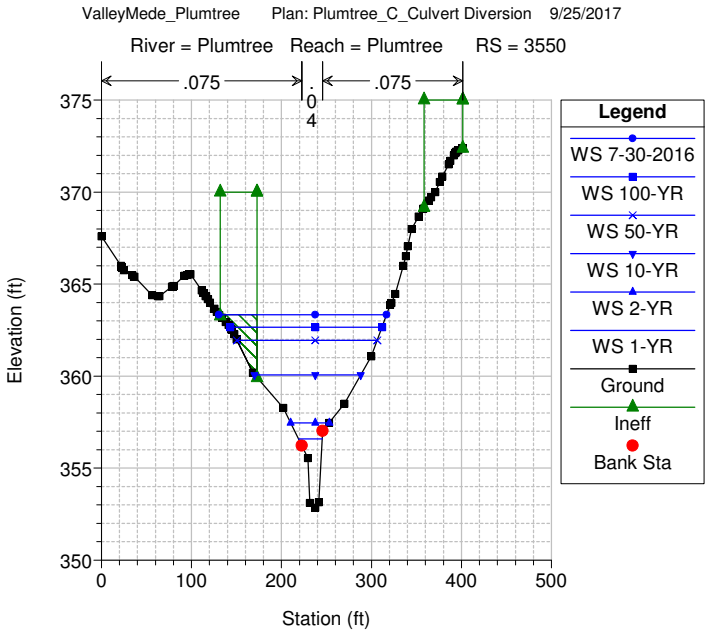

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4185
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

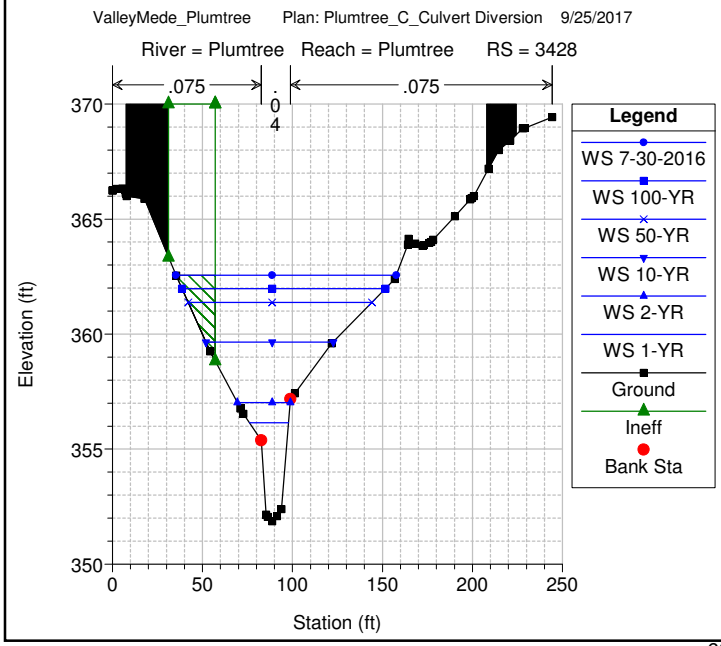

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4033
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

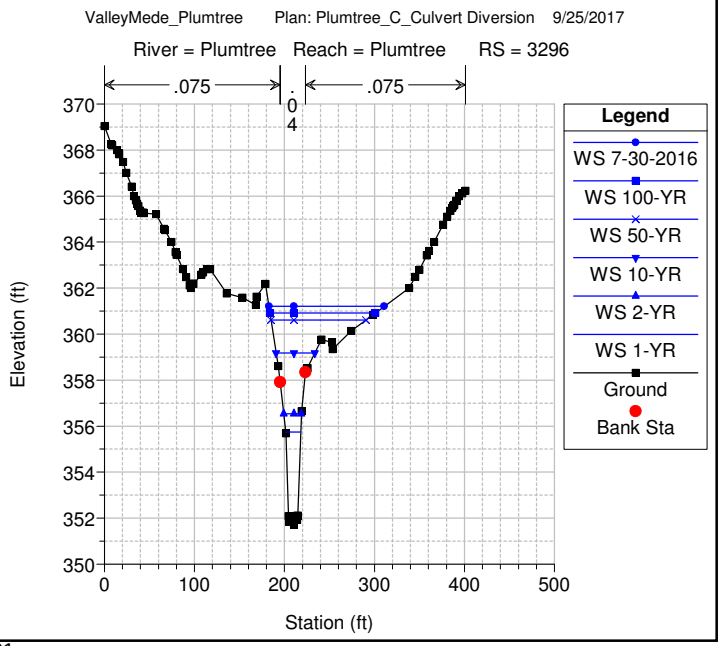

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3930
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

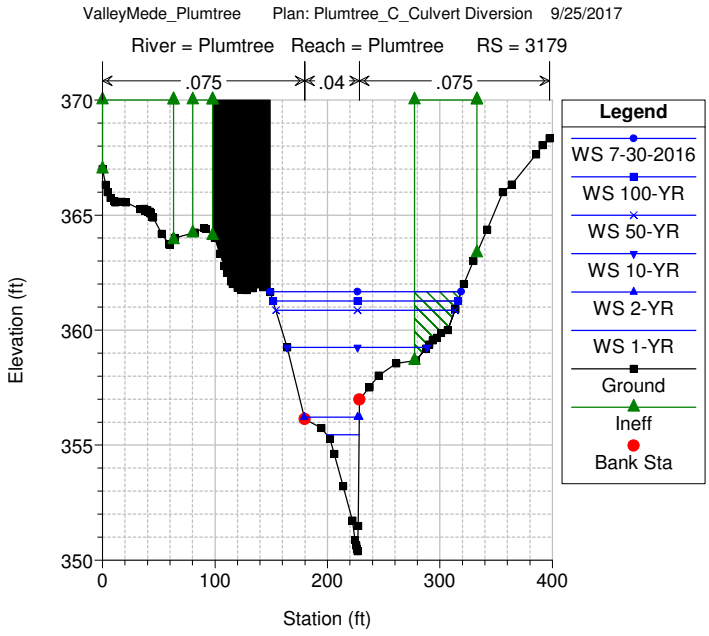

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3816
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

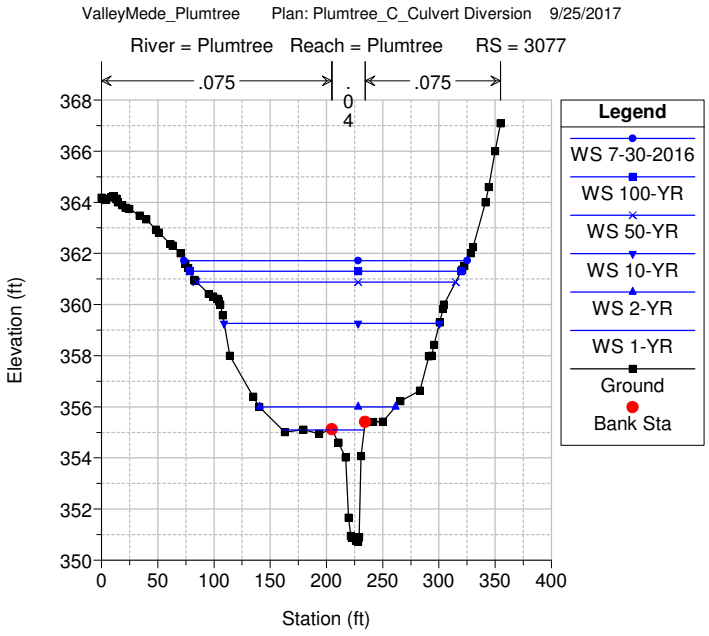

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3688
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

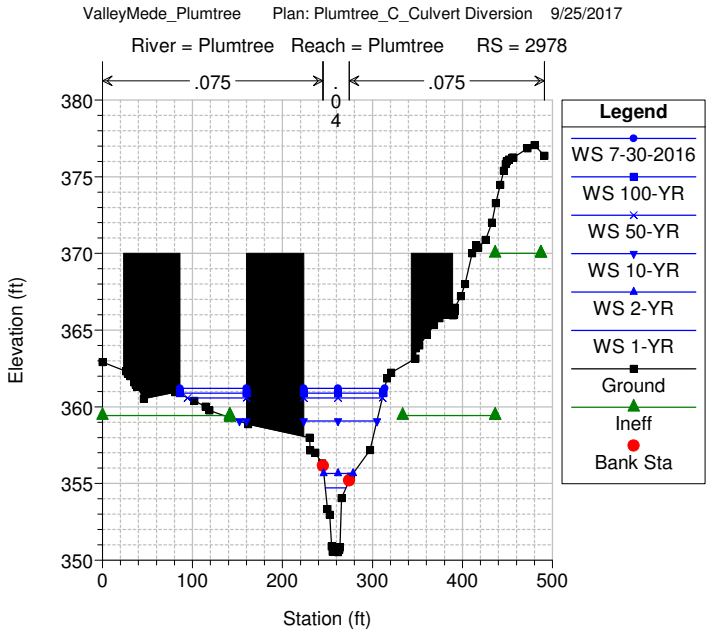

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3550
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

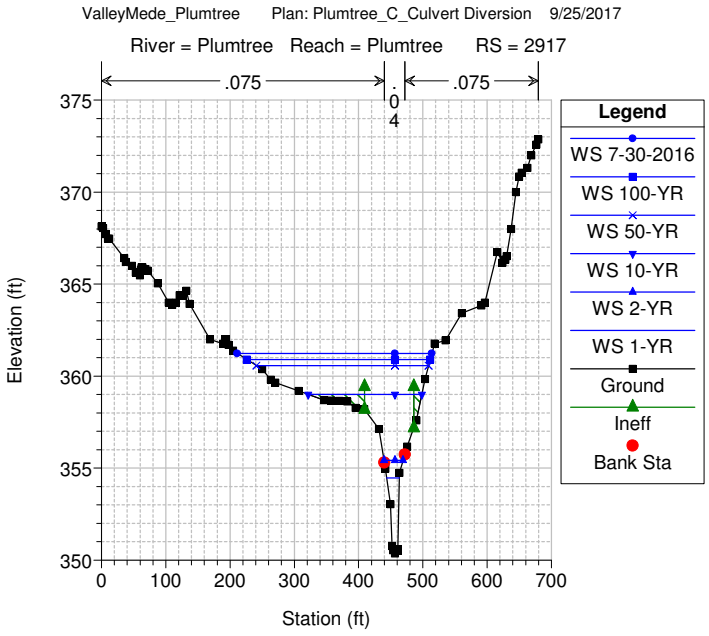

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3428
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

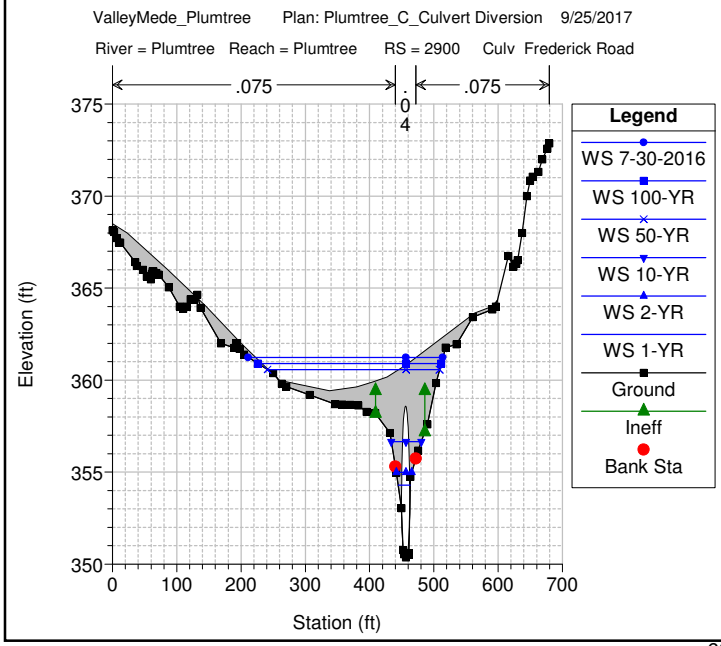

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3296
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

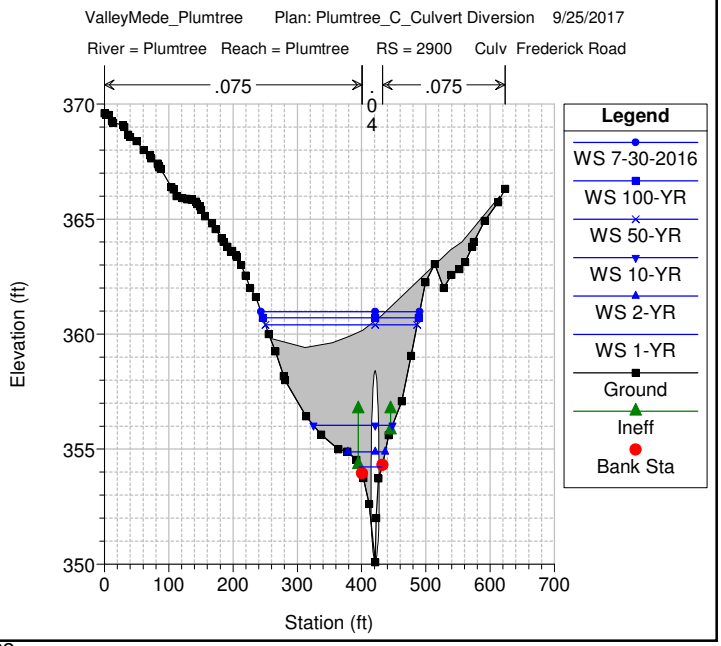

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3179
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

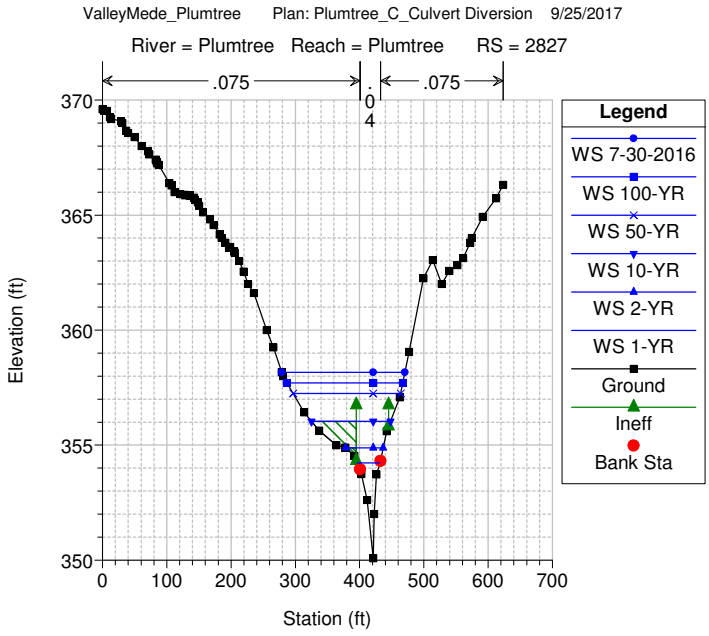

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3077
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

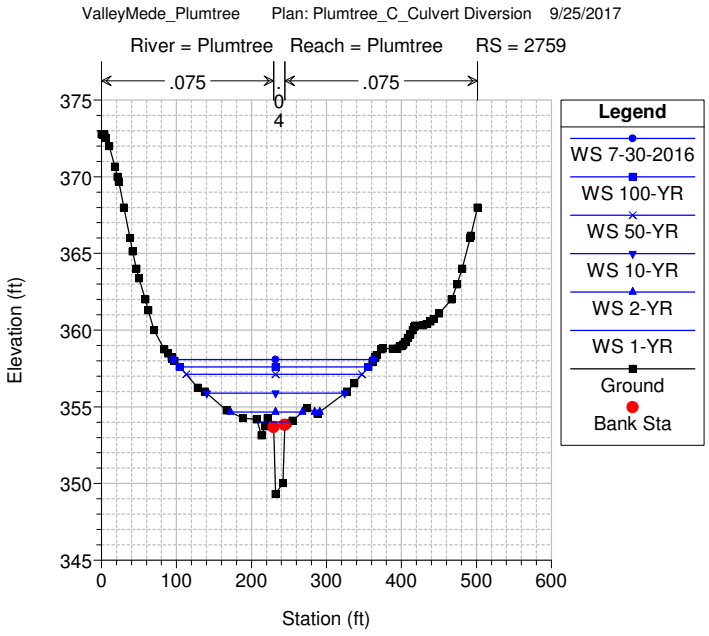

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2978
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

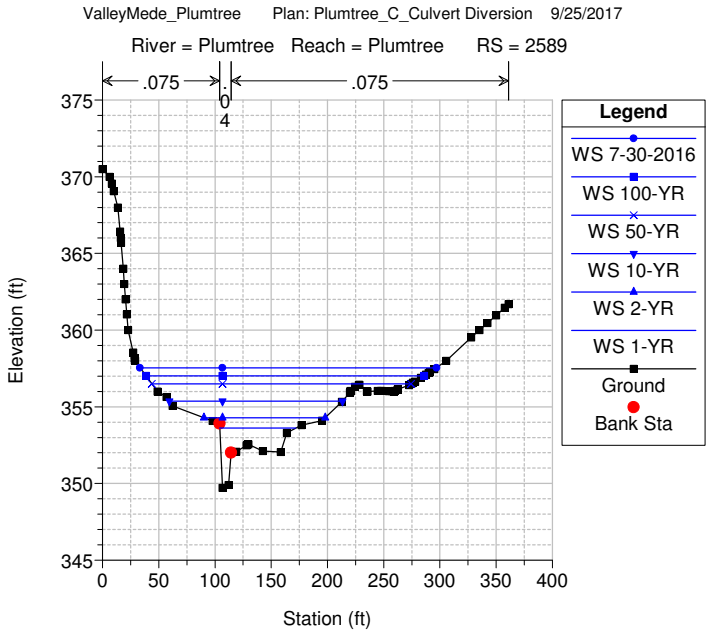

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2917
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

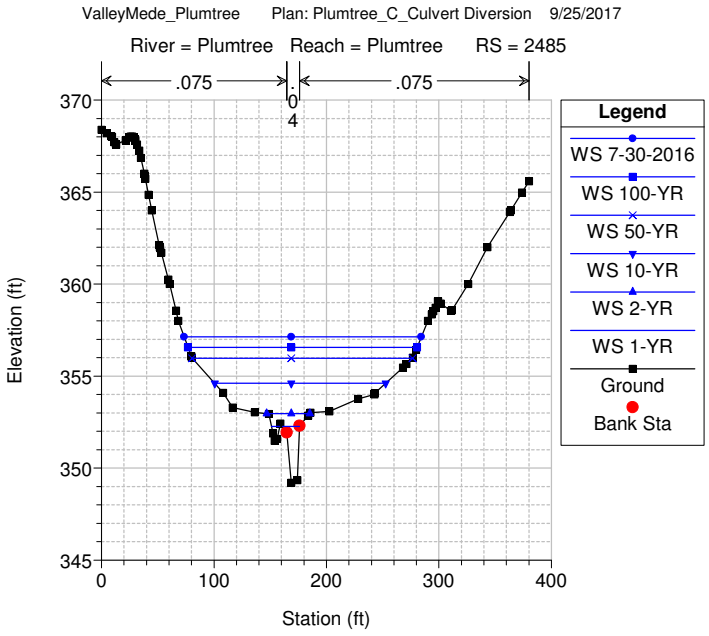

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

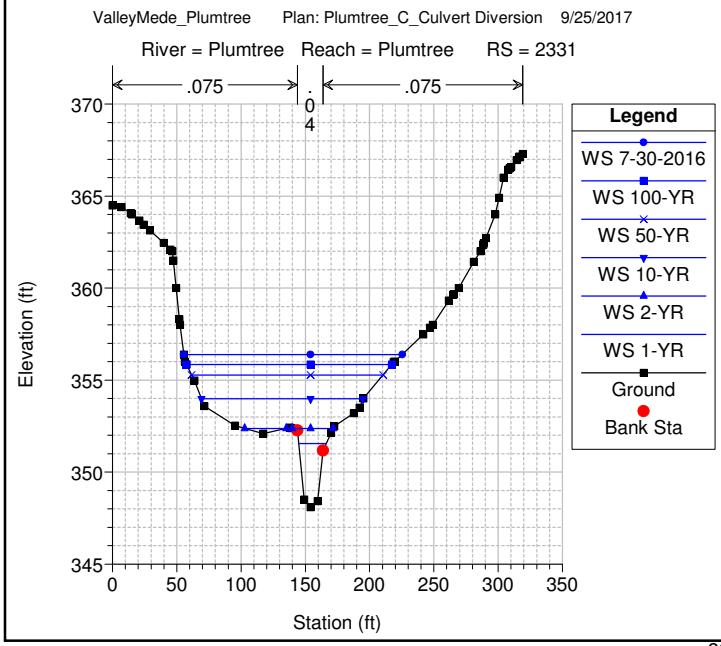

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

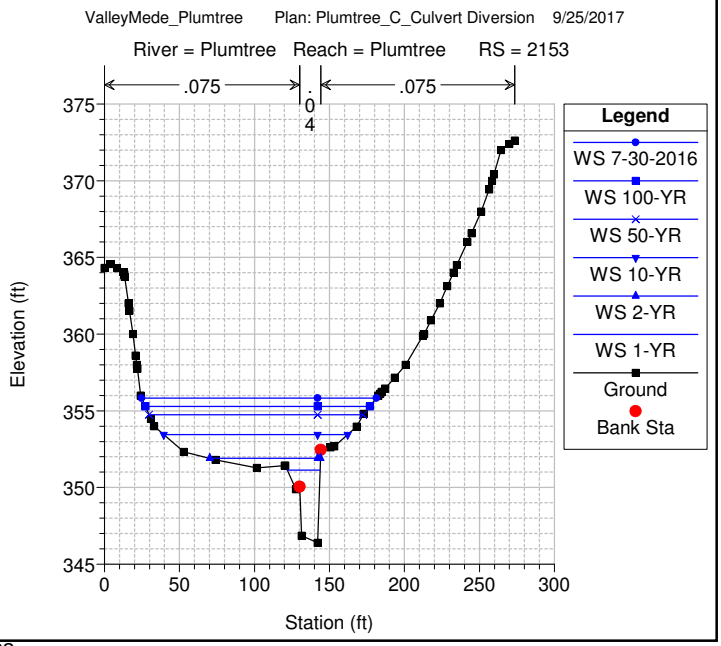

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2827
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

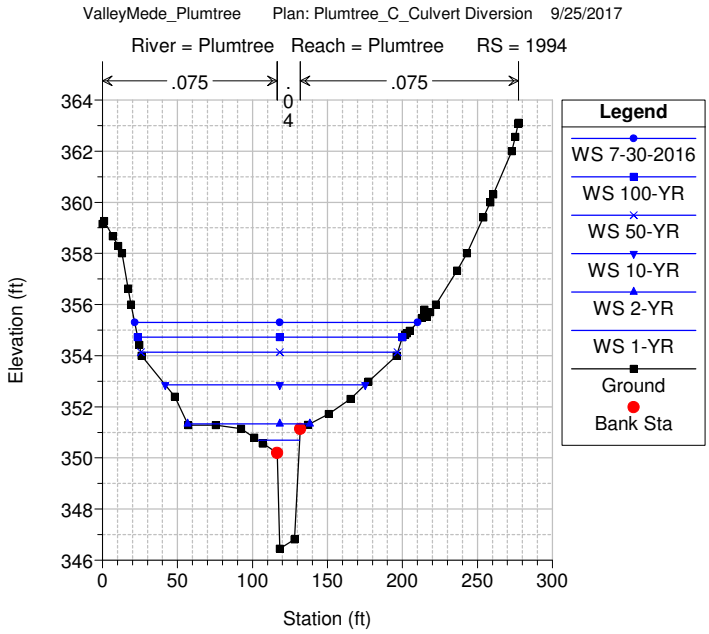

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2759
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

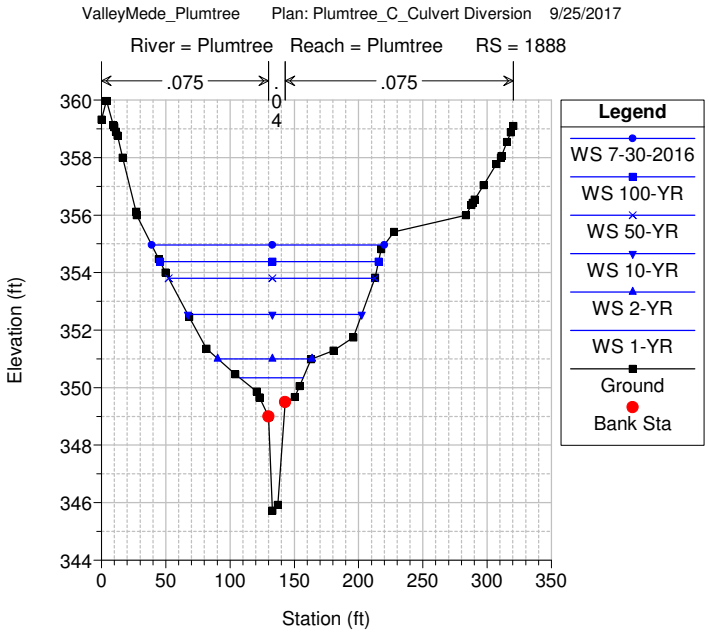

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2589
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

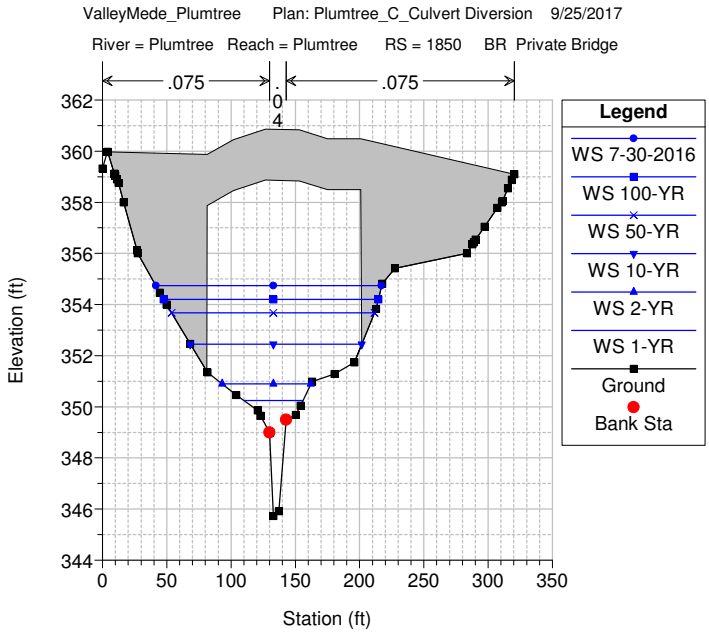

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2485
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

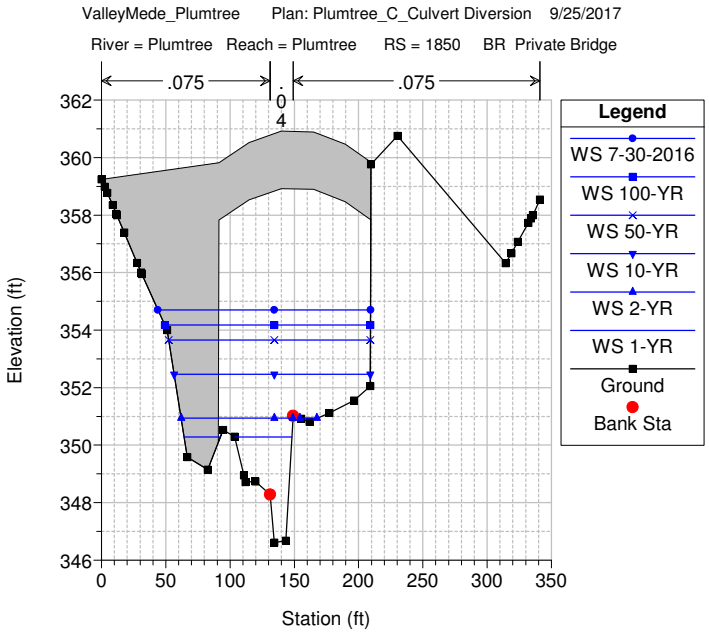

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2331
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

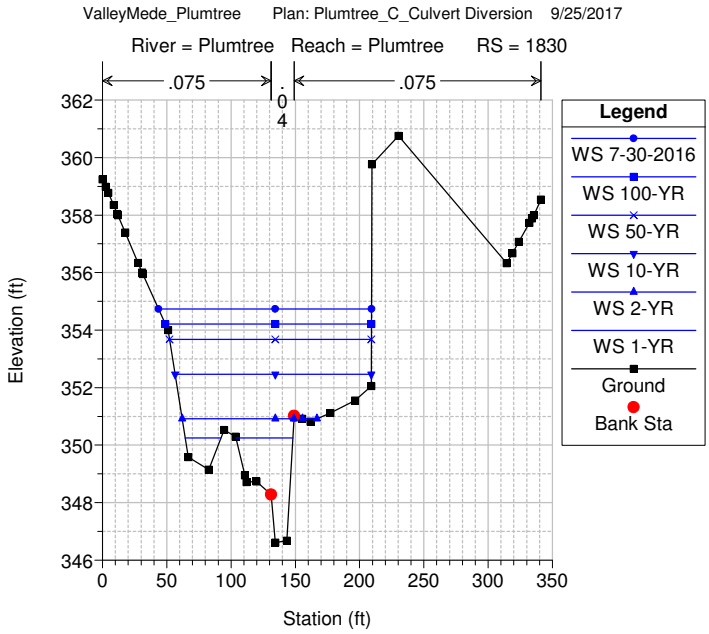

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2153
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

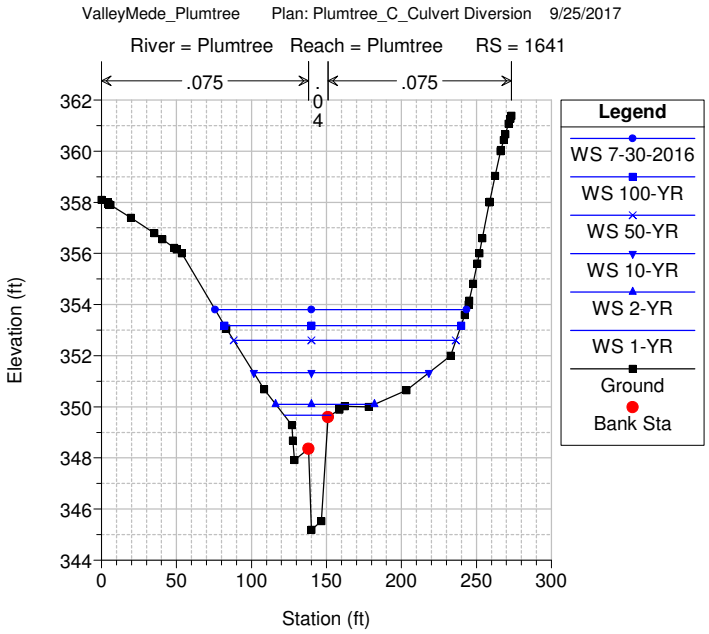

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1994
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

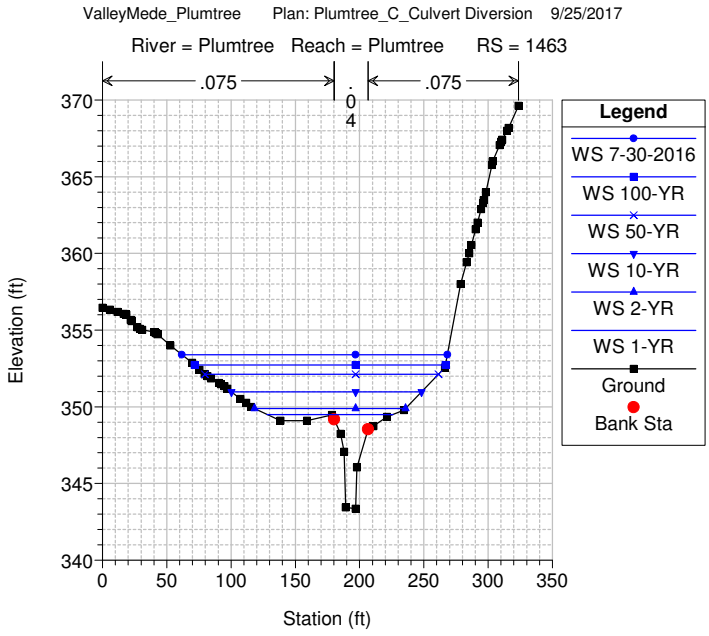

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1888
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

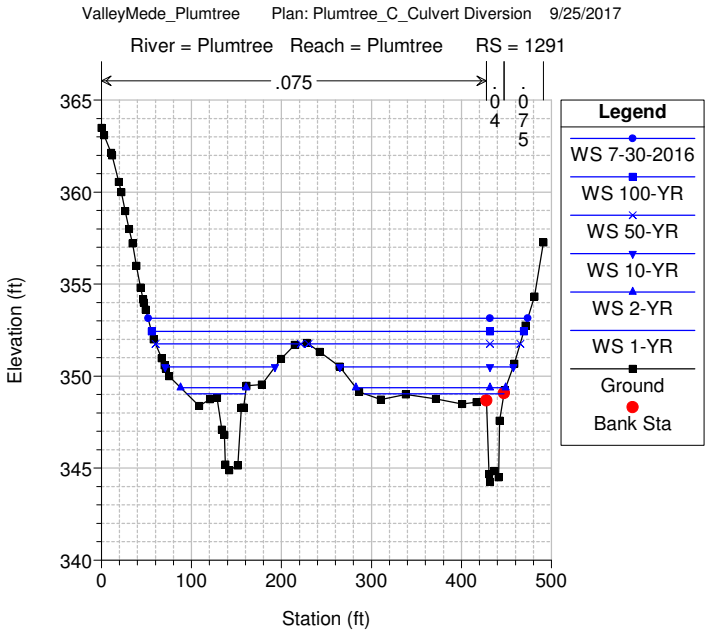

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

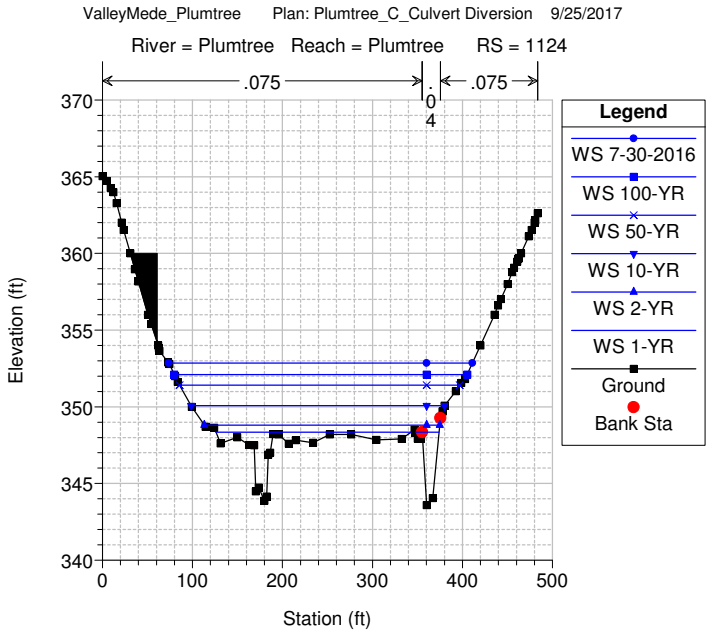

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

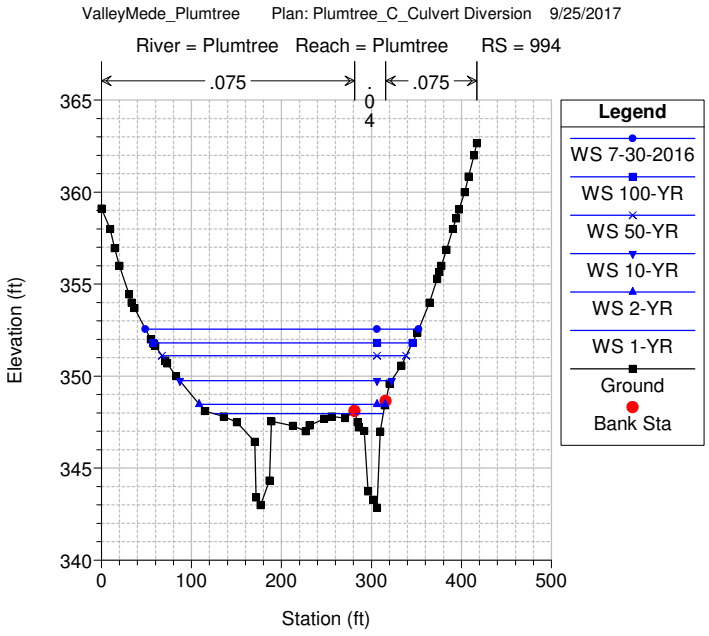

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1830
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

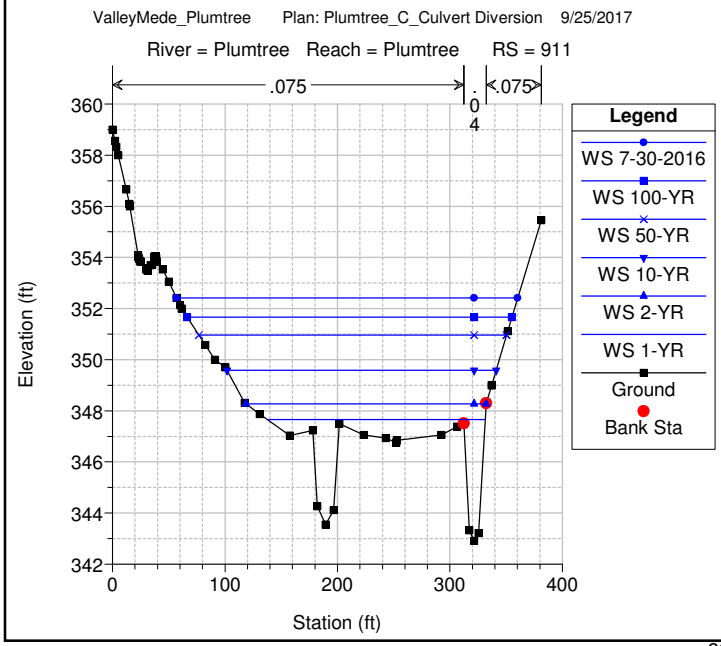

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1641
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

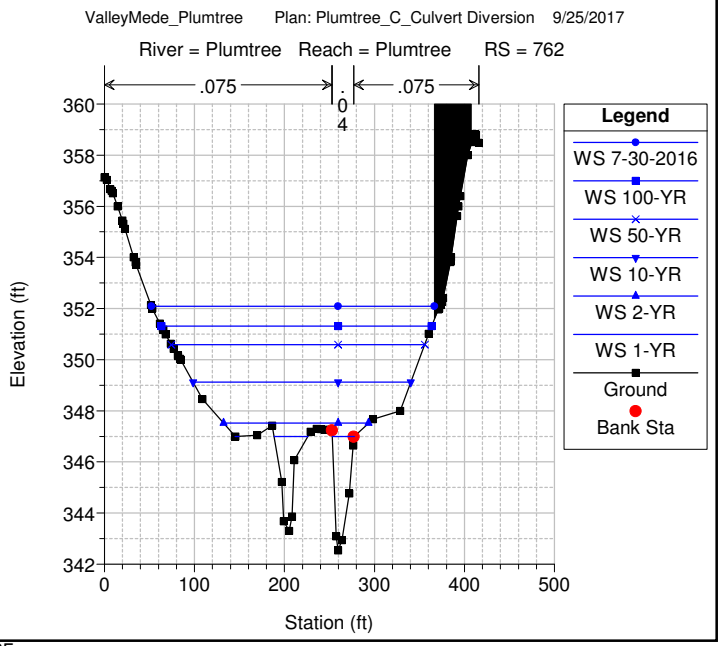

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1463
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1291
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1124
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

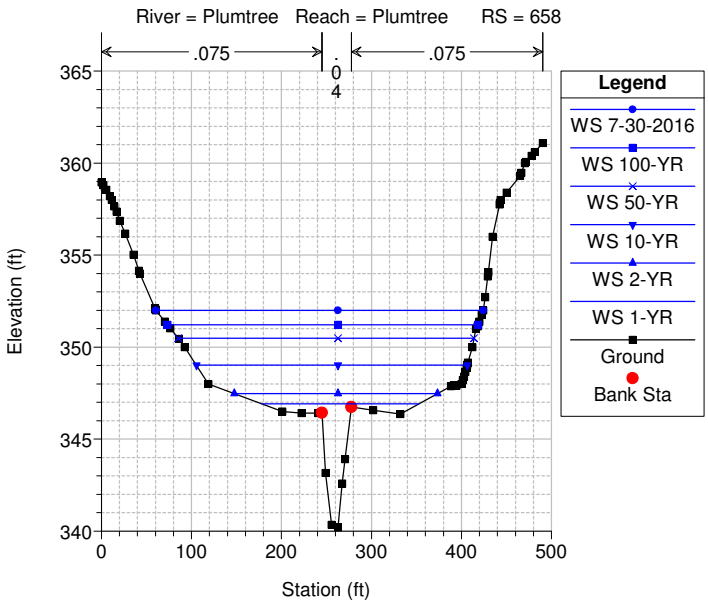

ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 994
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 911
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 762
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

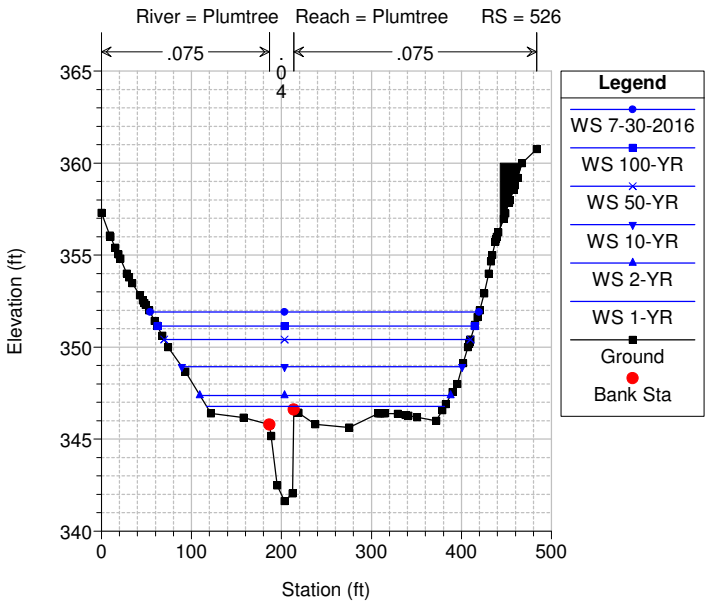
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 658



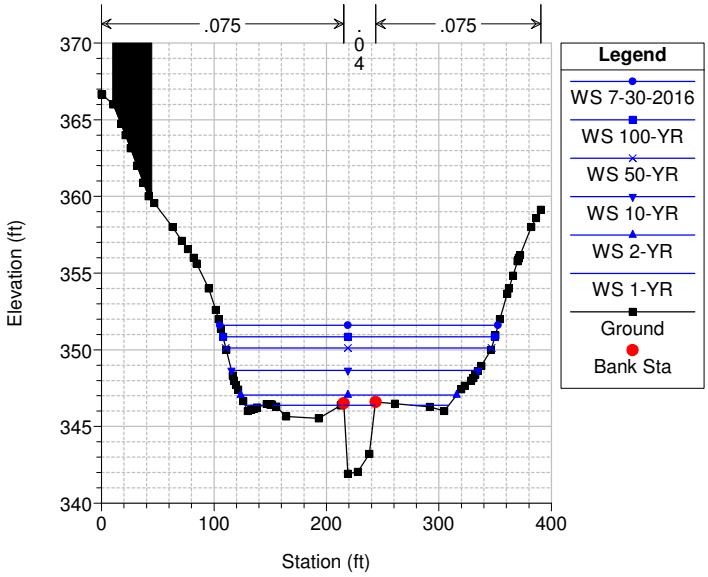
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 526



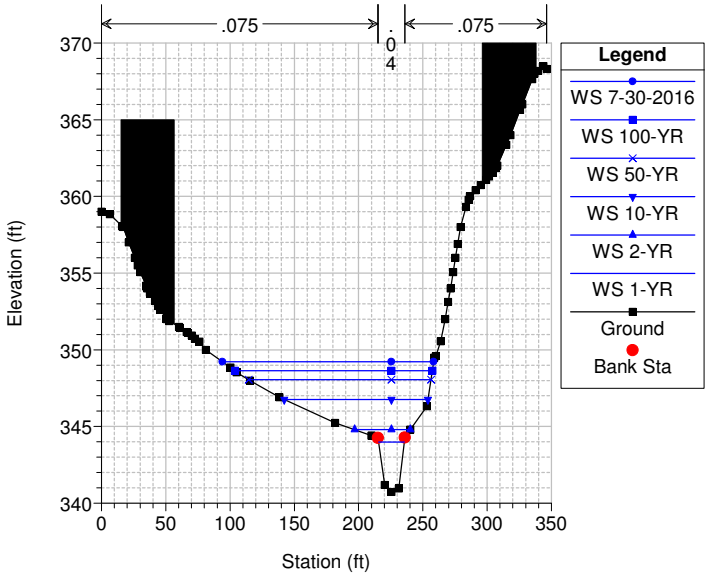
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 380



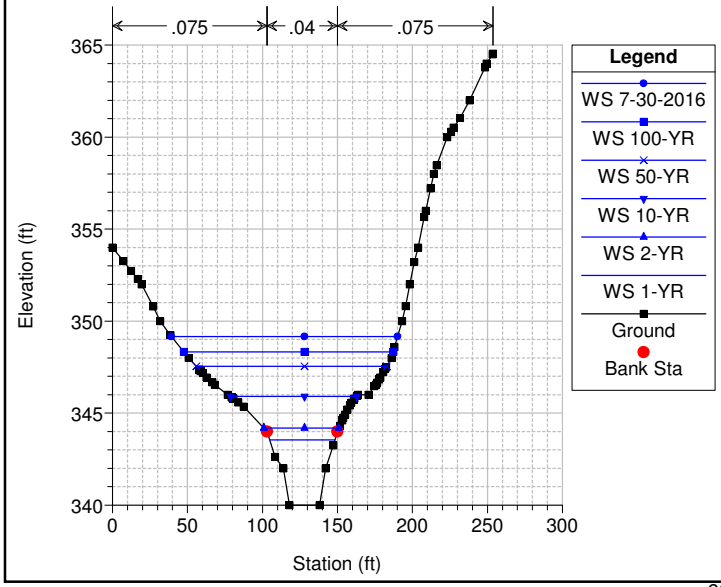
ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 146



ValleyMede_Plumtree Plan: Plumtree_C_Culvert Diversion 9/25/2017

River = Plumtree Reach = Plumtree RS = 63



HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
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PROJECT DATA
Project Title: ValleyMede_Plumtree
Project File : ValleyMede_Plumtree.prj
Run Date and Time: 9/25/2017 6:35:24 AM

Project in English units

PLAN DATA

Plan Title: Plumtree_C_Culvert Diversion
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.p04

Geometry Title: Plumtree_C_Culvert Diversion
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g03

Flow Title : Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f01

Plan Description:
Proposed condition which includes a 5' culvert for diversion from RS 6454 to RS 4289. Assumed outfall downstream of US 40. (Jack and bore) Modeled as a culvert in a lateral weir structure.

Plan Summary Information:
Number of: Cross Sections = 85 Multiple Openings = 0
Culverts = 6 Inline Structures = 0
Bridges = 2 Lateral Structures = 1

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f01

Flow Data (cfs)

River	Reach	RS	1-YR	2-YR	10-YR	50-YR	100-YR	7-30-2016

Plumtree	Plumtree	10286	223	307	596	995
1200	1333					
Plumtree	Plumtree	9499	204	321	719	1263
1578	1757					
Plumtree	Plumtree	6568	209	334	772	1391
1736	2002					
Plumtree	Plumtree	4185	194	295	741	1395
1765	2157					
Plumtree	Plumtree	1291	408	581	1316	2351
2995	3782					

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Plumtree	Plumtree	1-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	2-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	10-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	50-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	100-YR	Critical	Normal S = 0.0035

GEOMETRY DATA

Geometry Title: Plumtree_C_Culvert Diversion
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g03

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10286

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	421.06	4.46	420.89	12.57	420.32	16.13	420	21.94	419.29
34.88	418	40.42	417.33	49.09	416.56	55.82	416.21	59.64	416.08
64.03	416.14	69.28	416.31	71.51	416.31	77.01	416.75	78.81	416.76
87.6	416	91.89	415.92	104.16	414	107.04	413.94	110.15	414
119.18	415.05	122.23	414.9	125.21	414.83	141.42	414.84	151.61	414.58
159.6	414.54	167.19	414.69	175.25	414.38	179.96	413.77	184.56	413.83
198.65	413.63	213.29	412.97	221.19	413.06	244.79	412.19	252.86	412
260.69	411.14	268.55	410	275.66	409.1	281.64	408	295.07	406.35
301.98	405.73	324.56	404	331.77	402.81	335.97	402	342.56	400
348.24	398	350.27	397.89	380.47	396.22	384.18	396	392.32	395.09
392.68	395.09	397.28	395.62	402.89	396.12	413.25	396.41	418.97	396.59
431.99	396.41	448.58	396.55	450.96	396.5	456.66	396	465.37	395.79
485.62	395.34	494.65	395.35	513.52	395.9	514.52	396	527.48	398
535.86	400	542.87	402	555.37	406	562.67	408	571.1	410
582.03	412	599.19	414	605.88	414.94	612.34	415.57	635.29	417.19

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	380.47	.04	413.25	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
380.47	413.25	240.46	241.25	237.2	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
418.97	635.29	396.59	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10044

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	412.61	5.59	412.52	12.02	412	24.56	410	43.68	408
63.32	407.31	82.83	408	95.82	408.67	112.17	408.9	135.95	408

```
  150.67  407.02  155.38  406.93  170.58  407.72  184.39  408.12  187.95     408
  198.17     406  207.41  404.64  213.72  403.97  220.01  403.47  230.16  403.33
  237.26  402.98  240.08  402.75  253.05   401.3  261.48     400  269.64     398
  276.05     396  280.89   394.8  280.91  394.79  283.98     394  296.18  392.49
  306.31  393.62   315.4  393.68  315.41  393.68   321.2  393.72  340.79   393.4
  357.04  393.75  384.23  394.62  389.34  394.61   409.5     394  417.56  393.18
  419.37  393.18  428.98     394  438.91  394.31  451.85  394.26   461.9  394.35
  480.45  394.77   489.6  395.18  496.68   395.1  547.82     396  555.48  396.43
  564.03  396.66  570.08  396.96  600.19   397.8  605.55  398.35  610.97  398.79
  622.38  399.08  632.53     400  658.42  401.23  661.34  401.26  665.82  401.48
  679.52  401.73  692.52  401.54  695.05  401.76  701.43  401.68  704.45   401.5
  715.06  401.24  723.65  401.19  738.24  400.62  741.08  400.41  748.78  400.57
  754.02  400.82  766.27  400.65  779.16  401.67  781.77     402  794.47     404
  812.23     408  815.19   408.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  280.91     .04   321.2    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.91   321.2            233.9  230.57  222.97             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9814

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  408.67   12.64     408    20.9   407.3   27.53  406.98    42.5  406.44
   45.07  406.25   49.58  405.72   78.23  403.56   83.62  402.79   92.79  403.11
  109.61   402.4   113.8     402  123.62  401.65  158.68  400.12  170.91  398.99
  182.64     398  195.08     396  198.75  395.24  205.66     394  253.13     392
   256.5  391.77  269.73  390.59  269.76  390.59  276.29     390  281.78  388.76
  287.27     390     300  391.49  302.59  391.81  308.77   392.3  315.09  392.31
  322.12  392.41  326.48  392.65  332.87  392.67  336.92  392.57  358.02  392.79
  362.67  392.97  366.57  392.83  382.15  392.69  386.15  392.76  408.35  392.69
  415.33  392.55  427.21  392.45  466.82  393.37  473.56  393.78  479.56     394
  490.09  394.88  500.42  395.03  503.77  395.29  508.66  395.37  510.05  395.29
  514.08  395.75  518.53   395.7  538.06  395.23  547.13  395.22  564.37     396
  575.99  396.66  593.58  397.53   602.7  396.78  604.57  396.76  609.13  397.48
  610.69     398  617.78   398.3   636.1  398.77  690.36  399.64  696.36  399.66
  731.55   398.7   739.3  398.59  745.07  398.39  755.19  398.48   767.5  398.81
  779.98  399.52  790.91  399.95  806.05     402  818.51   403.5  823.74     404
  826.23   404.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  253.13     .04  308.77    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        253.13  308.77            52.19   51.52   50.85             .1       .3
Right Levee     Station=  514.08      Elevation=  395.75

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9762

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  406.21    1.37     406   14.09  404.95   24.55  404.21   38.68  402.62
   47.25     402   67.31     400   71.18  399.81    79.7  399.62   84.43  399.37
  117.61  398.32   130.2  398.16  134.88     398  147.37  397.38  157.13  397.03
  162.41  397.34  174.01  396.74  180.45     396  203.34  393.86  225.77  392.62
  235.15     392  236.85  391.76  246.11  391.05  253.44  390.35  253.48  390.34
  256.39     390  260.62  388.92  263.74     388  265.59  389.21  267.49     388
  276.02     390  282.13     392   284.2  392.49  284.22  392.49  290.57     394
  292.66  393.58  294.75     394   307.3  392.92  329.54  391.59  336.98  391.01
  346.17  391.13  351.58  391.28  355.99  391.22  362.72  391.29  365.01  391.44
  375.54  391.54  383.33  391.42  390.57  391.67  406.22     392  413.09  392.62
  427.35  393.41  431.42   393.8  432.21     394  447.82  395.11  449.31  395.15
  470.35  394.72   473.7  395.12  482.31  395.53  496.51  395.21  507.72  395.47
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  543.73  396.64  554.26  396.66  559.24  396.89  562.97  396.96  568.76  397.23
  584.75  397.94  589.53  398.31  594.28     398  601.77  397.68  611.77     398
   662.6   399.2  729.79  397.67  753.67  397.86  761.91     398   785.2  399.61
  794.52  400.41  805.84  402.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  235.15     .04  284.22    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.15  284.22            32.64   30.09   27.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9732

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  121.15           145.71  143.47  141.55             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 9650

INPUT
Description: Michaels Way
Distance from Upstream XS =      51
Deck/Roadway Width        =      50
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  396.38            26.1 395.934            49.6 395.582
    91.4 394.914           117.4 394.746           144.9 394.497
   186.3 394.402          211.94 394.376          238.63 394.594
  353.45     396

Upstream Bridge Cross Section Data
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
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  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
          82.5  121.15           .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  397.96             8.6   397.3            45.6 396.969
    68.8 396.671            92.4  396.38           123.2 395.934
   146.8 395.582           191.3 394.914           209.6 394.746
   232.9 394.497           262.2 394.402           288.2 394.376
  314.98 394.594          417.56     396

Downstream Bridge Cross Section Data
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.96   15.99  396.01   17.57     396   20.76  395.29   25.99  395.01
   29.32  394.71   29.33  394.38   39.55  392.85   60.92  392.22   95.59   390.4
  100.13  389.82  106.73  388.97  116.38  387.66  117.95  386.81  124.68  386.27
  130.57  386.46  134.27   387.9   134.7     388  137.88  388.68  144.79  390.87
  157.88  392.09  174.45  391.81  191.33  392.09  218.95   392.7   229.4  392.07
  229.72  392.09  239.13  392.16  239.87  392.21  251.99  392.37  252.81  392.33
  253.84  392.05  264.78  392.06  265.66  392.35  265.82  392.37  274.13  392.48
  275.38  392.39   275.8  392.37  280.37  392.38  285.74  392.34  288.04  392.35
  289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
  294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
  302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
  336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
  353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
  363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         106.73  137.88           .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8   391.2       F
   140.7  417.56   391.2       F

Upstream Embankment side slope              =       3 horiz. to 1.0 vertical
Downstream Embankment side slope            =       3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.5     .024     .016        0                  .5                1
Upstream   Elevation =  387.74
           Centerline Station =  102
Downstream Elevation =  386.61
           Centerline Station =  120
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Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.6     .024     .016        0                  .5               1
Upstream   Elevation =  387.77
           Centerline Station =  112
Downstream Elevation =  386.6
           Centerline Station =  130
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CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	112.20	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.43
Q Barrel (cfs)	112.20	Culv Vel DS (ft/s)	5.35
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.24
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.64	Weir Sta Lft (ft)	
E.G. OC (ft)	391.04	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.01	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	146.33	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.10
Q Barrel (cfs)	146.33	Culv Vel DS (ft/s)	5.56
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	390.20	Culv Frctn Ls (ft)	0.15
W.S. DS (ft)	389.99	Culv Exit Loss (ft)	0.27
Delta EG (ft)	1.35	Culv Entr Loss (ft)	0.51
Delta WS (ft)	1.37	Q Weir (cfs)	
E.G. IC (ft)	391.22	Weir Sta Lft (ft)	
E.G. OC (ft)	391.64	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.11	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.99	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.37	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.37	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	298.28	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	298.28	Culv Vel DS (ft/s)	8.93
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	391.43	Culv Frctn Ls (ft)	0.87
W.S. DS (ft)	391.04	Culv Exit Loss (ft)	0.85
Delta EG (ft)	2.53	Culv Entr Loss (ft)	0.70
Delta WS (ft)	2.76	Q Weir (cfs)	
E.G. IC (ft)	393.54	Weir Sta Lft (ft)	
E.G. OC (ft)	393.96	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.87	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.98	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	365.61	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	365.61	Culv Vel DS (ft/s)	9.43
E.G. US. (ft)	395.25	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.11	Culv Inv El Dn (ft)	386.61

E.G. DS (ft)	392.59	Culv Frctn Ls (ft)	0.24
W.S. DS (ft)	392.07	Culv Exit Loss (ft)	0.86
Delta EG (ft)	2.66	Culv Entr Loss (ft)	0.69
Delta WS (ft)	3.04	Q Weir (cfs)	263.03
E.G. IC (ft)	394.79	Weir Sta Lft (ft)	70.13
E.G. OC (ft)	395.24	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.16	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	392.07	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)	5.05	Weir Flow Area (sq ft)	123.26
Culv Crt Depth (ft)	3.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	352.60	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.81
Q Barrel (cfs)	352.60	Culv Vel DS (ft/s)	8.81
E.G. US. (ft)	395.57	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.40	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	1.15
W.S. DS (ft)	392.60	Culv Exit Loss (ft)	0.69
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.60
Delta WS (ft)	2.80	Q Weir (cfs)	493.18
E.G. IC (ft)	394.49	Weir Sta Lft (ft)	49.49
E.G. OC (ft)	395.55	Weir Sta Rgt (ft)	286.44
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.21
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.83
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	196.32
Culv Crt Depth (ft)	3.86	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	347.45	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.68
Q Barrel (cfs)	347.45	Culv Vel DS (ft/s)	8.68
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.59	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.38	Culv Frctn Ls (ft)	1.11
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.38	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.70	Q Weir (cfs)	637.61
E.G. IC (ft)	394.37	Weir Sta Lft (ft)	43.81
E.G. OC (ft)	395.76	Weir Sta Rgt (ft)	291.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.37
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	237.06
Culv Crt Depth (ft)	3.81	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.80	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.48
Q Barrel (cfs)	110.80	Culv Vel DS (ft/s)	5.26
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.02
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.22
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.65	Weir Sta Lft (ft)	
E.G. OC (ft)	391.05	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.74	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.97	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.94	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	160.67	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.38
Q Barrel (cfs)	160.67	Culv Vel DS (ft/s)	6.08
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.77

W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	390.20	Culv Frctn Ls (ft)	0.36
W.S. DS (ft)	389.99	Culv Exit Loss (ft)	0.36
Delta EG (ft)	1.35	Culv Entr Loss (ft)	0.10
Delta WS (ft)	1.37	Q Weir (cfs)	
E.G. IC (ft)	391.46	Weir Sta Lft (ft)	
E.G. OC (ft)	391.91	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	390.27	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.99	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.49	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.50	Min El Weir Flow (ft)	394.39

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	297.72	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.57
Q Barrel (cfs)	297.72	Culv Vel DS (ft/s)	8.90
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	391.43	Culv Frctn Ls (ft)	0.87
W.S. DS (ft)	391.04	Culv Exit Loss (ft)	0.84
Delta EG (ft)	2.53	Culv Entr Loss (ft)	0.71
Delta WS (ft)	2.76	Q Weir (cfs)	
E.G. IC (ft)	393.56	Weir Sta Lft (ft)	
E.G. OC (ft)	393.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.84	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	366.36	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.50
Q Barrel (cfs)	366.36	Culv Vel DS (ft/s)	9.44
E.G. US. (ft)	395.25	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.11	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.59	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	392.07	Culv Exit Loss (ft)	0.87
Delta EG (ft)	2.66	Culv Entr Loss (ft)	0.70
Delta WS (ft)	3.04	Q Weir (cfs)	263.03
E.G. IC (ft)	394.84	Weir Sta Lft (ft)	70.13
E.G. OC (ft)	395.26	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.15	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	392.07	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)	4.90	Weir Flow Area (sq ft)	123.26
Culv Crt Depth (ft)	3.97	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	354.22	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.85
Q Barrel (cfs)	354.22	Culv Vel DS (ft/s)	8.85
E.G. US. (ft)	395.57	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.40	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	1.16
W.S. DS (ft)	392.60	Culv Exit Loss (ft)	0.70
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.61
Delta WS (ft)	2.80	Q Weir (cfs)	493.18
E.G. IC (ft)	394.55	Weir Sta Lft (ft)	49.49
E.G. OC (ft)	395.58	Weir Sta Rgt (ft)	286.44
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.21
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.83
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	196.32
Culv Crt Depth (ft)	3.87	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	347.95	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.70
Q Barrel (cfs)	347.95	Culv Vel DS (ft/s)	8.70
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.59	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.38	Culv Frctn Ls (ft)	1.12
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.38	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.70	Q Weir (cfs)	637.61
E.G. IC (ft)	394.41	Weir Sta Lft (ft)	43.81
E.G. OC (ft)	395.77	Weir Sta Rgt (ft)	291.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.37
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	237.06
Culv Crt Depth (ft)	3.82	Min El Weir Flow (ft)	394.39

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01
29.32	394.71	29.33	394.38	39.55	392.85	60.92	392.22	95.59	390.4
100.13	389.82	106.73	388.97	116.38	387.66	117.95	386.81	124.68	386.27
130.57	386.46	134.27	387.9	134.7	388	137.88	388.68	144.79	390.87
157.88	392.09	174.45	391.81	191.33	392.09	218.95	392.7	229.4	392.07
229.72	392.09	239.13	392.16	239.87	392.21	251.99	392.37	252.81	392.33
253.84	392.05	264.78	392.06	265.66	392.35	265.82	392.37	274.13	392.48
275.38	392.39	275.8	392.37	280.37	392.38	285.74	392.34	288.04	392.35
289.04	392.37	289.76	392.35	291.67	392.43	292.2	392.41	293.73	392.52
294.34	392.49	295.48	392.61	297.43	392.5	299.89	392.58	301.52	392.7
302.57	392.72	317.67	393.33	321.58	393.35	323.43	393.4	328.45	393.52
336.04	393.41	337.54	393.43	342.18	393.53	347.45	393.83	351.46	393.93
353.19	394	353.68	394.06	355.32	394.12	356.64	394.21	359.84	394.23
363.57	394.38	408.86	396	412.96	396.28	417.56	396.44		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.73	.04	137.88	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
106.73	137.88	74.95	89.37	103.36	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	104.8	391.2	F
140.7	417.56	391.2	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9499

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.42	1.16	397.39	10.04	396	12.41	395.1	15.2	394
19.89	392.3	20.69	392	30.94	390.03	58.35	389.54	78.64	389.7
91.71	389.72	91.72	389.72	95.66	389.73	106.35	385.4	108.48	385.35
121.85	388.31	126.28	389.29	134.6	389.39	148.99	387.24	154.41	388.47
172.52	389.82	180.01	390	192.12	392	192.21	392.01	204.6	394
211.88	395.17	217.46	396	219.87	396.49	223.11	397.11	227.54	398
230.91	398.56	233.71	399	240.41	400	246.88	400.81		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	95.66	.04	126.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.

```
         95.66  126.28            98.65   101.8  104.92             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9398

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   398.2    5.52  398.06    6.45     398   10.27  396.93   13.95     396
   17.15   395.1   21.18     394   22.21  393.72   23.21  393.45   25.97  392.71
   28.56     392   35.43  391.01   38.29   390.6   43.03     390   43.15  389.99
   46.04  389.74   46.81   389.7   47.09  389.68   47.37  389.65   55.11   389.4
   55.76  389.36   56.28  389.32   56.92  389.26   63.39  388.58   69.33  388.73
    71.4  388.44   71.45  389.03   80.15  389.63   92.99  388.55  114.44  388.98
  120.46  388.94  120.47  388.94  128.65  388.89  134.08  384.53  135.79  384.42
  141.88  384.75  145.59  388.85  150.79  388.83  167.65  388.75  186.81  388.92
  200.79  389.39   202.6     390  212.88  391.15  214.18     392  222.75   392.3
  224.12  392.62  227.87  392.98  232.15  393.19  232.46  393.21  235.68  393.41
  238.89  393.56  241.36  393.69  244.69  393.87  245.13  393.89  247.11     394
   255.3  394.93  262.09  395.66  265.18     396  268.55  396.34  272.92  396.76
  279.66  397.44  280.66  397.53  281.55  397.61  285.79     398   291.8  399.12
  296.37     400   301.1  400.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  128.65     .04  145.59    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        128.65  145.59            97.24   96.47   94.54             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9301

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.19    3.07     400    4.08  399.94     4.2  399.94   13.57  399.39
    15.2  399.29   20.44  399.07   21.01  399.05   21.75  399.02   22.33     399
   33.53  398.93   34.16  398.91   34.62  398.89   50.07  398.18   51.97  398.04
   52.52     398   56.81  396.58   58.64     396   59.61  395.91   64.07  395.25
   72.56     394   73.12  393.94    74.3  393.83    84.4  392.97   90.89  392.65
   97.02  392.35  101.28  392.17  101.59  392.16  101.86  392.14  101.98  392.14
  104.04     392   106.2  392.22  109.76  392.28  110.09  392.26   110.2  392.25
  111.04  392.21   113.1  392.09  140.12  387.83   145.5  387.55  154.95  387.07
  157.77  384.36  160.52  383.31  166.94  384.65  171.14  388.29  175.86  388.27
  175.87  388.27  183.69  388.23  215.21  388.62  222.39   389.2  234.24  392.69
  252.67  392.11  269.21  391.61  287.95  393.96  291.68     394  304.65  395.18
  314.29  395.71  317.24  395.93  317.28  395.93  318.14     396  320.84  396.21
   321.8   396.3  324.25  396.51  326.08  396.68  329.75  397.01  336.95   397.7
  338.16  397.81  340.03     398  341.44  398.43   347.8     400  351.27  400.78
  352.31  401.05

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  154.95     .04  171.14    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        154.95  171.14           109.84     105  100.42             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    42.5    98.1     405

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9196

INPUT
Description:
Station Elevation Data    num=      76
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Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.06	3.11	399.1	7.66	399.14	8.21	399.14	11.14	399.2
14.16	399.24	15.16	399.23	16.06	399.21	16.45	399.2	16.79	399.18
17.07	399.17	44.77	399	46.3	398.96	57.79	398.17	58.05	398.12
58.52	398.07	59.24	398.01	59.47	398	59.81	397.95	60.63	397.83
60.69	397.82	61.36	397.83	62.34	397.8	62.8	397.77	63.34	397.77
63.74	397.73	73.15	396.86	74.17	396.76	74.98	396.67	80.24	396
91.29	394.71	96.77	394	103.28	393.2	108.02	392.64	109.29	392.48
110.44	392.34	113.4	392	129.6	390	133.01	389.51	134.1	389.41
135.16	389.31	138.39	388.96	141.78	388.59	143.61	388.38	145.61	388.15
146.23	388.08	146.93	388.04	146.98	388	156.92	387	192.18	386.94
214.32	387.26	224.37	387.23	224.38	387.23	230.17	387.21	234.05	385.77
239.97	384.81	241.03	384.18	243	383.81	247.36	387.68	256.1	387.12
258.34	386.98	282.41	388.4	293.08	392.68	309.62	391.47	323.53	392.22
323.58	392.18	354.2	394	361.45	395.27	365.79	396	370.25	397.12
373.9	398	375.39	398.33	383.13	400	386.3	400.73	391.87	402
395.39	402.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	230.17	.04	247.36	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
230.17	247.36	197.07	208.89	195.59	.1 .3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
11	50.8	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8987

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.15	2.15	402.17	3.39	402.13	6.04	402.17	12.51	402.07
13.01	402.08	14.07	402.07	15.03	402.07	16.62	402.1	16.88	402.09
17.7	402.05	18.67	402	24.82	401.62	50.49	400	71.91	398.02
72.1	398	72.14	397.99	82.9	396	83.83	395.8	92.09	394
100.48	392.04	100.64	392	100.82	391.96	101.02	391.92	110.17	390
121.03	388.29	142.19	386.02	152.75	385.4	161.75	385.92	161.76	385.92
161.94	385.93	170.22	385.8	172.51	383.34	178.25	382.77	183.07	383.36
185.81	386.43	193.25	386.15	202.96	385.78	222.78	385.7	249.39	385.47
263.78	390.18	301.3	390	301.69	390.04	302.4	390.1	313.7	391.1
324.37	392	326.83	392.6	329.22	393.19	332.48	394	335.16	394.95
338.19	396	340.18	396.58	342.55	397.27	344.45	397.82	345.03	398
346.35	398.38	351.77	400	352.66	400.28	356.31	401.47	357.07	401.72
357.94	402	358.9	402.3	364.45	404	365.62	404.4	369.07	405.49

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	170.22	.04	185.81	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
170.22	185.81	233.38	233.77	226.61	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8753

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.84	3.57	392.36	4.48	392.24	6.24	392	14.25	391.04
22.57	390	39.19	388.36	42.66	388	43.14	387.95	44.71	387.76
45.13	387.7	53.93	387	55.07	386.91	55.91	386.89	59.98	386.86
67.22	387.07	71.26	386.74	71.58	386.73	74.94	386.49	75.24	386.48
79.99	386.13	80.09	386.12	81.64	386	140.52	386.79	179.2	384.55
199.15	384.94	212.08	384.65	214.59	384.6	226.78	384.34	229.61	382.96
231.97	382.55	232.78	382.41	236.12	381.99	237.03	382.27	237.82	384.79
243.64	385.02	243.65	385.02	246.4	385.13	254.4	387.48	262.5	388.23
269.36	387.48	284.51	387.86	284.57	388.25	284.6	388.25	284.74	388.27
302.51	390	304.49	390.31	314.62	392	318.02	392.86	322.27	394

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  323.63  394.41  327.41  395.54  328.32  395.82   328.9     396  329.96  396.36
  334.49     398  337.27  399.01  339.54     400  340.77  400.45  344.57     402
  346.47   402.7     350     404   351.3  404.47  352.94  405.01  353.27  405.12

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  226.78     .04  237.82    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        226.78  237.82           178.41  174.76  168.62             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8579

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.17    3.31     400   17.74  399.07   34.62     398   35.22  397.93
   46.41  397.26   51.75  396.96   59.26   396.5   60.57  396.41   63.23  396.27
   68.83     396   75.46  394.89   76.44  394.72   79.84  394.17   80.17  394.11
   80.95     394   93.93  392.04   94.14     392   94.63  391.88   95.67  391.71
   95.96  391.67   96.13  391.66   102.2  391.37   103.3  391.28  107.14  391.06
  111.25  390.74   112.8  390.64   116.2  390.33  116.74  390.29  119.66     390
  124.86  389.68  126.23  389.59  129.14  389.43  130.57  389.33  132.66  389.17
   135.1  389.03     138  388.83  141.06  388.61  147.32  388.13  148.92     388
  153.19  387.46  172.43  385.68  186.19  383.82  200.87  383.46  218.33  383.53
  227.14  382.25  231.16  382.93  233.37  383.31  235.71  383.61  242.87  381.38
  248.28  381.13  250.03  381.37  251.19  383.67  263.28  383.69  264.68   383.7
  279.14   384.5  298.66  387.04   300.8     387  315.88     390  320.59  391.65
   321.5     392  322.64  392.54  325.53     394   328.7  395.54  329.55     396
  332.04  397.23  333.33     398  334.37  398.44  338.88     400  339.68  400.16
  340.45  400.35  347.58     402  352.32   402.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  235.71     .04  251.19    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.71  251.19           198.29  204.23  206.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8374

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  401.05     .39  401.02   14.71     400   17.51  399.78   17.87  399.76
   18.37  399.72   19.63  399.64   20.25   399.6      22  399.47   31.49  398.77
   42.12     398   43.17  397.92   43.74  397.88   48.54  397.52   49.54  397.46
   51.19  397.35   54.98  397.06   67.52   396.4   67.98  396.37    72.6  396.03
      73     396   77.65  395.72   79.49   395.6   80.67  395.52   82.29  395.41
   83.66  395.31   85.08   395.2  104.07     394  108.69  393.72  110.21  393.61
  111.59  393.51  116.39  393.15  122.53  392.72  129.15  392.19  131.43     392
  140.54  390.76  146.03     390  147.63  389.84  149.67  389.65   158.7  388.75
  166.96     388  174.92  387.31  176.26  387.21  182.29     386  189.22  384.97
  217.89   382.7  254.28  382.69  262.97  382.52  262.98  382.52   272.5  382.34
  274.84   380.5  276.51  380.31  286.75  380.32  292.45  384.62  293.85  384.83
  305.64   386.6  321.38     388  325.59  388.89  331.68     390  334.17  390.71
  336.02   391.3   338.3     392  343.97  393.91  344.22     394  345.13  394.36
  349.46     396  350.95   396.6  354.45     398  356.99  399.37  358.18     400
  359.59  400.71  360.34  401.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   272.5     .04  292.45    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         272.5  292.45           144.9  145.45  146.03             .1       .3

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 8229

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.36	5.81	394.06	6.29	394	7.37	393.95	45.41	392
69.28	390.22	72.15	390	72.18	390	72.26	389.98	72.54	389.95
73	389.89	74.69	389.72	75.45	389.65	75.92	389.61	75.99	389.6
79.77	389.37	82.3	389.25	100.97	388.39	107.53	388	110.36	387.9
110.76	387.9	112.75	387.84	132.43	386	139.68	385.1	170.44	382.68
187.75	382.12	197.62	382.13	197.63	382.13	207.39	382.14	209.28	380.1
212.63	379.79	215.85	380.15	217.64	381.75	227.71	382.65	227.84	382.66
243.37	383.19	265.96	384.67	268	384.46	288.88	388	293.09	388.12
308.33	389.98	308.55	389.98	309.46	389.99	310.08	390	315.47	391.1
319.76	391.98	319.9	392	320.02	392.04	321.07	392.37	326	393.9
326.33	394	328.6	394.86						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	207.39	.04	217.64	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
207.39	217.64	135.27	135.16	134.66	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8094

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.62	2.48	394.2	3.72	394	3.8	393.98	4.1	393.92
4.62	393.84	5.04	393.78	5.44	393.73	5.7	393.7	24.53	392.35
27.13	392.1	27.41	392.08	28.22	392	37.38	391.13	48.65	390
55.52	389.55	79.43	388.11	79.45	388.11	79.5	388.1	79.73	388.02
79.79	388	96.53	386.44	99.06	386.2	101.25	386	106.88	385.44
109.08	385.26	113.06	384.89	116.1	384.62	119.34	384.4	120.88	384.28
121.97	384.22	122.35	384.19	122.91	384.14	134.05	383.5	144.72	382.7
163.81	381.63	182.02	380.88	183.82	381.01	183.84	381.01	194.28	381.76
195.27	379.09	198.85	378.24	204.43	378.53	207.68	381.82	215.37	381.59
219.87	381.46	228.39	381.39	231.06	382.03	246.18	381.9	274.41	383.36
311.66	389.55	311.72	389.81	311.73	389.81	329.62	392	337.85	393.59
339.81	394	342.65	394.79	346.84	396	349.21	396.76	352.92	398
358.41	399.96	358.53	400	358.64	400.03	368.44	402	368.97	402.04
369.04	402.04	369.13	402.05	375.87	402.56	376.87	402.63	378.22	402.73
382.48	403.06	386.91	403.38	388.95	403.53	390.87	403.66		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	194.28	.04	207.68	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
194.28	207.68	138.21	139.81	140.01	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7954

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	390.87	1.06	390.76	5.56	390.36	8.09	390.17	9.7	390.06
12.95	389.88	15.86	389.75	20.41	389.55	21.37	389.49	22.17	389.45
26.06	389.27	27.8	389.18	29.65	389.1	31.21	389.02	32.58	388.93
33.19	388.89	40.18	388.65	41.65	388.54	44.29	388.45	47.14	388.32
47.67	388.28	49.22	388.2	50.93	388.11	52.62	388	54.06	387.89
58.14	387.52	60.02	387.34	70.48	386.32	73.92	386	75.83	385.87
81.99	385.49	86.05	385.25	88.16	385.06	94.21	384.69	95.33	384.57
98.59	384.23	99.42	384.17	100.92	384	114.44	382.88	125.39	382
130.61	381.95	156.45	380.05	188.73	379.73	199.32	380.23	210.56	380.77

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     212   378.9  214.38  377.79  218.13  379.54  221.11  380.65  229.58  380.68
  231.23  380.69  249.42  380.31   281.8  380.49   295.4     380  299.39  381.16
  302.17     382  305.31  382.93  310.71  384.55  316.22     386  323.56  387.01
  330.85     388  342.34   389.5  345.84     390  347.98   390.9  350.48     392
  352.14  392.75  355.01     394  357.39  394.99  359.91     396  362.57  396.94
  365.15  397.64  366.49     398  375.99  398.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  210.56     .04  221.11    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        210.56  221.11           155.28  153.64  152.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7800

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  389.23     6.4  388.77   18.95     388   32.05  387.12   34.38  386.96
   40.95  386.52   41.74  386.47   42.88  386.38   48.62     386   49.93  385.92
   50.74  385.86   62.21   385.1   65.97  384.84    73.9  384.32   75.81   384.2
   77.92  384.08   78.06  384.07   79.37     384   79.61  383.95   79.79  383.92
    79.9  383.91    81.2  383.76   81.59  383.72   81.85  383.71   82.72  383.74
   88.11  383.68   89.08  383.64   89.68  383.58   90.64  383.53   91.54  383.48
   92.48  383.38   93.55  383.29   96.76     383   98.06  382.88   99.04  382.78
  102.88  382.37  106.07     382  129.44  380.05  152.75  378.79  172.94  379.22
  186.27  379.75  187.83  378.84  191.51  378.79  198.74  378.73     200  379.32
  200.83   379.7  211.69     379  223.63  379.27  230.99   379.1  240.48  378.88
  259.49  379.02  278.05  378.97  305.83  379.75  307.52     380  314.08   381.6
  315.71     382  316.56  382.21  318.83  382.81  323.87     384  331.19  385.58
  333.53     386   340.6  386.91  350.42     388  352.19  388.23  353.07  388.36
  356.29  388.87  360.39  389.49  361.84  389.72  363.36     390  364.77  390.43
  366.25  390.85  370.11     392  372.25  392.58

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.27     .04  200.83    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.27  200.83           252.37  252.82  252.55             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7548

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.07     .78     384    5.11  383.66    7.63   383.5   11.97  383.17
   14.64  382.99   17.76  382.76   24.91  382.21   27.52     382   28.85  381.83
   29.51  381.79   32.65  381.46   35.07  381.21   46.63     380   59.52  379.12
   61.36     379   65.17  378.74   75.34  378.13   77.34  378.05   77.62     378
   83.55  378.07   85.43  378.08   88.35  378.07   95.64  378.09  101.54  378.13
  108.95  378.07  110.55  378.08  119.01  378.06  138.28  378.06  168.39  378.45
  198.66  378.25  217.53  377.85  219.53  377.83  219.55  377.83  230.43  377.75
  232.68  376.67  235.51  375.57  238.58  376.37  240.21  377.92  249.56   377.9
  258.68  377.89  288.89  377.64  323.87  376.92   330.2  377.07  336.47     378
  340.56  378.61  343.65  379.04  345.35  379.25  349.52  379.62  352.72  379.89
  353.04  379.92  353.25     380  353.89  380.15   356.3  380.75  360.75     382
  369.15     384  377.97  385.33  382.29     386  383.74  386.27  393.23     388
  398.11     389  402.86     390  406.24  390.27  406.63  390.26  409.53     390
  411.75  389.85   413.2  389.77   418.1  389.46  420.07  389.37  423.04  389.17
  425.75  388.96   431.8   389.4  440.42     390   442.9  390.41  445.97  390.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  230.43     .04  240.21    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        230.43  240.21           174.12  180.41  186.79             .1       .3
```

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7367

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.88	17.18	384.04	17.79	384	19.31	383.69	27.57	382
33.56	381.11	40.22	380	72.92	378	75.63	377.86	83.54	377.49
84.36	377.49	86.2	377.54	86.99	377.54	87.28	377.52	88.37	377.57
88.81	377.59	98.7	377.77	99.18	377.78	99.84	377.77	153.1	379.18
184.66	379.38	209.09	379.76	209.11	379.76	216.46	379.87	218.28	379.16
220.46	378.71	224.14	378.3	227.18	379.5	239.26	379.44	239.27	379.44
256.12	379.35	283.76	378.85	301.95	376	306.84	375.99	309.51	375.94
311.37	375.92	312.47	375.93	313.98	375.94	315.54	376	317.31	376.05
328.94	376.26	339.82	376.48	386.56	377.48	387.24	377.47	389.22	377.48
389.83	377.49	393.84	377.67	396.67	377.79	398	377.85	399.4	377.89
400.73	377.95	403.02	378	405.65	378.1	407.78	378.19	409.29	378.26
410.92	378.34	413.44	378.46	417.48	378.69	420.02	378.83	428.31	379.29
429.6	379.36	436.31	379.72	436.88	379.75	441.68	380	449.79	380.68
452.35	380.9	458.41	381.46	460.97	381.69	464.19	382	470.57	382.96
477.61	384	480.68	384.57	488.87	386	495.27	386.99	498.55	387.34

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	216.46	.04	227.18	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
216.46	227.18	143.37	150.84	157.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7216

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.75	1.08	385.65	5.95	385.32	10.54	384.89	18.99	384.19
19.48	384.13	19.51	384.13	19.72	384.03	19.77	384.03	19.83	384
21.34	383.6	24.22	382.82	25.18	382.55	27.46	382	33.57	381.07
41.34	379.98	60.13	379	65.81	378.72	75.73	378.27	77.55	378.18
79.67	378.07	80.08	378.07	80.17	378.06	81.18	378	81.5	377.95
81.94	377.89	82.7	377.88	134.09	376.01	134.34	376	135.9	375.99
142.56	375.98	148.85	376	148.97	376	159.54	375.75	186.07	376.5
205.76	375.8	205.79	375.8	221.2	375.26	236.22	376.17	236.23	376.17
243.36	376.61	267.12	376.15	298.57	377.1	324.96	378	344.89	379.72
346.99	379.9	348.24	380	355.59	380.52	358.24	380.72	369.12	381.55
372.54	381.8	375.03	382	377.33	382.49	384.79	384	385.68	384.2
393.83	386	394.81	386.17	399.71	387.05	405.49	388	406.42	388.18
407.5	388.41	413.63	389.1	417.54	389.6	418.61	389.74	420.77	390
421.3	390.07	421.95	390.14	429.79	391.08	433.06	391.43	434.12	391.56
434.45	391.61	438.52	392	445.08	392.32	449.48	392.54	451.09	392.66

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.07	.04	243.36	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.07	243.36	190.28	186.42	181.46	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
377.1	439.5	390	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7030

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.29	2.41	387	10.05	386	29.45	384.45	32.78	384.15
33.33	384	36.52	383.46	40.31	382.87	43.31	382.38	46.06	382
46.12	381.98	48.59	381.84	49.64	381.82	49.97	381.8	50.4	381.79
50.62	381.77	71.01	380.53	81.91	380	92.52	379.05	103.93	378
123.79	376.72	134.74	376.11	135.07	376.05	135.57	376	135.6	375.99
137.36	375.81	139.35	375.62	140.29	375.67	145.45	375.59	151.15	375.29
153.13	375.29	164.88	375.94	165.28	375.96	165.81	376	175.82	375.48
205.64	375.09	233.21	375.65	248.05	375.46	259.75	375.31	261.56	373.84
262.29	373.43	263.48	373.62	268.09	375.54	278.5	375.62	279.83	375.63
309.7	376.93	312.89	376.93	319.01	378	322.75	379.67	328.88	379.92
332.16	380	333.98	380.26	345.53	382	358.26	384	368.51	385.52
371.9	386	379.53	387.21	385.4	388	395.57	389.56	398	389.92
398.64	390	402.14	390.27	406.61	390.59	410.26	390.83	412.74	390.96
415.65	391.11	416.49	391.16	419.22	391.29	423.04	391.64	423.34	391.66
427.09	392	428.37	392.13	432.56	392.47	446.6	393.09		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	259.75	.04	268.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
259.75	268.09	140.13	137.19	133.92	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
372.8	404.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6893

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.2	2.38	382.99	8.39	382.4	12.65	382	20.07	381.43
21.04	381.32	23.89	381.07	32.28	380	33.24	379.94	36.89	379.63
54.28	378.25	56.67	378	75.57	376.96	78.59	376.8	93.69	376
94.91	375.96	96.44	375.86	117.75	374.81	136.62	374	152.27	373.6
154.13	372.23	157.36	371.8	159.62	372.29	160.73	373.73	187.35	373.86
202.43	373.44	213.2	373.14	214.26	371.39	217.55	370.68	220.85	371.53
222.2	372.36	232.55	373.36	240.97	374.18	259.97	375.25	279.8	378.38
290.19	380	292.23	380.3	302.91	382	311	382.83	315.48	383.17
321.02	383.61	322.67	383.75	325.93	384	327.14	384.17	327.77	384.24
330.51	384.6	331.06	384.66	331.73	384.74	332.6	384.85	333.79	385.01
335.83	385.3	339.56	385.84	340.65	386	353.87	389.13	355.81	389.6
357.43	390	357.61	390.01	361.03	390.33	362.39	390.43	362.61	390.44
365.01	390.49	366.06	390.54	368.05	390.54	368.79	390.56	380.19	390.59
388.25	390.86								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.2	.04	232.55	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.2	232.55	124.46	126.53	128.02	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
333.6	364.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6766

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.56	7.75	380.34	9.62	380.18	11.59	380.1	27.69	379.6
34.11	379.36	42.51	378.88	44.96	378.81	50.68	378.9	55.82	378.75
59.91	378.59	69.06	378.34	72.96	378.1	76.53	377.98	77.17	377.98
78.44	377.94	85.15	377.54	110.99	376.09	111.42	376	115.69	375.87
158.02	374.36	160.91	374	186.61	372.66	212.26	373.01	237.02	373.1
242.58	372.73	249.33	372.28	253.11	370.17	254.8	369.76	259.27	370.49
262.36	373.11	274.27	374.24	274.29	374.25	278.85	374.68	293.57	375.12

310.54	376.12	337.65	378	341.5	378.38	344.84	378.75	345.88	378.88
348.32	378.95	351.5	379.16	353.85	379.26	354.2	379.31	358.69	379.46
365.18	379.62	366.28	379.73	367.47	380	369.55	380.4	370.86	380.58
373.19	381.02	375.37	381.31	379.99	382	390.01	384	392.8	384.16
404.5	384.66	418.06	384.49	421.86	384.5	423.36	384.56	430.23	384.62
434.86	384.68	447.58	385.29	449.06	385.3	453.71	385.19	463.39	384.68
463.96	384.68	468.82	384.87	472.42	384.83				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	237.02	.04	262.36	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
237.02	262.36	103.31	103.53	104.46	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
367.4	402.8	390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6663

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.81	5.71	387.58	42.61	386.42	45.32	386.36	48.81	386.32
50.39	386.29	52.99	386.11	54.86	386	63.52	384	72.4	382
77.53	381.09	78.45	381.02	81.39	381.16	82.73	381.16	83.84	381.06
85.14	381.03	90.04	380.7	91.84	380.48	94.76	380	107.44	379.41
109.18	379.29	112.44	379.13	115.99	378.92	130.42	378	130.89	377.95
160.38	376.65	180.56	376.17	184.97	375.98	189.81	375.85	195.23	375.67
199.49	375.58	206.72	375.37	221.58	374.58	234.91	374	259.85	373.17
294.97	372.71	311.02	372.56	311.04	372.56	319.15	372.49	321.59	371.64
322.41	371.16	323.12	369.4	326.04	369.26	336.33	370.36	339.84	373.35
341.19	373.46	341.21	373.46	355.51	374.57	385.65	374.57	391.75	376
435.14	377.35	436.73	377.48	438.03	377.5	441.59	377.71	445.02	378
461.23	380	462.22	380.21	465.24	380.76	470.16	381.69	472.06	382
479.53	383.54	481.93	384	486.28	384.27	488.32	384.35	505.54	384.31
515.18	384.49	518.45	384.46	533.6	385.11	535.47	385.12	546.46	384.34
548.83	384.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	319.15	.04	339.84	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
319.15	339.84	90.58	94.53	97.72	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
49.7	87.5	390	451.6	492.3	390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6568

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.88	11.84	387.56	41.49	386.42	44.7	386.32	47.75	386.21
48.2	386.2	51.49	386.19	52.85	386.15	53.93	386.14	56.03	386.06
57.13	386	62.1	385.38	72.23	384.41	73.61	384.08	74	384
78.37	383.37	81.15	382.86	83.41	382.52	85.95	382	87.39	381.89
89.26	381.77	106.91	380.23	109.52	380.12	112.81	380	123.86	379.46
127.28	379.12	128.69	379.02	131.4	378.74	133.26	378.6	138.52	378
144.95	377.67	154.93	377.2	167.84	376.57	179.91	376	190.81	375.63
206.03	375.07	215.11	374.75	231.43	374.02	231.55	374	251.99	373.42
286.56	372.07	303.48	372	303.5	372	307.17	371.99	309.55	369.54
314.39	368.65	318.89	369.1	320.63	372.7	333.89	373.01	335.3	373.05
354.94	374.07	388	376.19	406.97	378	432.51	380	436.02	380.51
440.79	381.03	449.38	382	453.12	382.55	464.72	383.92	465.61	384
472.99	385.68	474.22	386	482.07	387.25	486.94	388	503.32	390
506.03	390.12	516.08	390.61	558.49	391.41	562.74	391.48	574.89	391.54

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  307.17     .04  320.63    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        307.17  320.63           112.95  114.27  115.74             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    56.9      70     395     480   528.4     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6454

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.74    7.58  382.41   11.61  382.36   18.35  382.85   20.37  382.77
   21.37  382.79   29.92  382.63   32.76   382.6   39.52  382.39   47.69     382
   53.79  381.37   55.59  381.15   62.67     380   71.51  378.91   77.75     378
   80.09  377.84   81.89  377.87   84.21     378   85.66  378.04   91.88  378.33
   93.96  378.47  103.28  378.95  112.28  379.59  117.21  379.85  119.53     380
  122.79  380.14  126.31  380.18  133.22     380  134.81  379.84  137.81  379.45
  141.48  378.79  145.53     378  155.89     376  166.96  373.47  173.88  373.47
  191.09  372.71   200.3  371.97   201.3  371.89  212.37  370.12  213.27  368.43
  215.67   368.3  218.52  368.67  224.12  371.79  230.68  372.35  245.49   373.6
  269.36  373.99  286.75  373.99  309.85     374  325.09  374.82  342.86  375.85
  347.28  376.79   353.2     378   358.5  378.88  365.42  379.84  366.88     380
   374.5  381.38  377.36     382  383.44  382.65  394.15     384  397.08  384.34
   402.2  384.86  404.24  385.01  407.53   385.3  408.74  385.37  414.73   385.6
  419.68  385.94   428.4  386.28   432.3  386.26  436.12  386.41  452.71  387.66
  457.68     388   470.4  388.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   201.3     .04  224.12    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         201.3  224.12           102.69  103.78  104.74             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   120.4   125.7     385

LATERAL STRUCTURE


RIVER: Plumtree
REACH: Plumtree           RS: 6375

INPUT
Description: Culvert Diversion from Hearthstone Rd to US 40
Lateral structure position     = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width        =       1
Weir Coefficient          =       2
Weir Flow Reference       = Water Surface
 Weir Embankment Coordinates    num =        2
     Sta    Elev     Sta    Elev
       0     385      50     385

Weir crest shape                          = Broad Crested


Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       5
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                       2150     .013     .013        0                   .5                1
Upstream   Elevation =  368
           Centerline Station =  20
Downstream Elevation =  358
           Centerline Station =  50
```

LATERAL STRUCTURE OUTPUT Profile #1-YR Culv Group: Culvert #1

E.G. US. (ft)	372.24	Weir Sta US (ft)	
W.S. US. (ft)	371.71	Weir Sta DS (ft)	
E.G. DS (ft)	371.96	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	371.63	Wr Top Wdth (ft)	
Q US (cfs)	209.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	68.21	Weir Avg Depth (ft)	
Q DS (cfs)	141.98	Weir Flow Area (sq ft)	
Perc Q Leaving	32.07	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	68.21	Q Culv Group (cfs)	68.21
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

LATERAL STRUCTURE OUTPUT Profile #2-YR Culv Group: Culvert #1

E.G. US. (ft)	373.51	Weir Sta US (ft)	
W.S. US. (ft)	373.21	Weir Sta DS (ft)	
E.G. DS (ft)	373.39	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	373.20	Wr Top Wdth (ft)	
Q US (cfs)	334.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	122.80	Weir Avg Depth (ft)	
Q DS (cfs)	211.52	Weir Flow Area (sq ft)	
Perc Q Leaving	36.67	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	122.80	Q Culv Group (cfs)	122.80
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

LATERAL STRUCTURE OUTPUT Profile #10-YR Culv Group: Culvert #1

E.G. US. (ft)	378.20	Weir Sta US (ft)	
W.S. US. (ft)	378.18	Weir Sta DS (ft)	
E.G. DS (ft)	378.19	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	378.16	Wr Top Wdth (ft)	
Q US (cfs)	772.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	204.98	Weir Avg Depth (ft)	
Q DS (cfs)	569.32	Weir Flow Area (sq ft)	
Perc Q Leaving	26.25	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			

Q Culv (cfs)	204.98	Q Culv Group (cfs)	204.98
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

LATERAL STRUCTURE OUTPUT Profile #50-YR Culv Group: Culvert #1

E.G. US. (ft)	379.22	Weir Sta US (ft)	
W.S. US. (ft)	379.17	Weir Sta DS (ft)	
E.G. DS (ft)	379.20	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	379.12	Wr Top Wdth (ft)	
Q US (cfs)	1391.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	206.77	Weir Avg Depth (ft)	
Q DS (cfs)	1184.79	Weir Flow Area (sq ft)	
Perc Q Leaving	14.82	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	206.77	Q Culv Group (cfs)	206.77
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

LATERAL STRUCTURE OUTPUT Profile #100-YR Culv Group: Culvert #1

E.G. US. (ft)	379.67	Weir Sta US (ft)	
W.S. US. (ft)	379.61	Weir Sta DS (ft)	
E.G. DS (ft)	379.64	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	379.54	Wr Top Wdth (ft)	
Q US (cfs)	1736.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	205.47	Weir Avg Depth (ft)	
Q DS (cfs)	1529.28	Weir Flow Area (sq ft)	
Perc Q Leaving	11.91	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	205.47	Q Culv Group (cfs)	205.47
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			

Breach Top El (ft)
Breach Bottom El (ft)
Breach SSL (ft)
Breach SSR (ft)

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

E.G. US. (ft)	379.96	Weir Sta US (ft)	
W.S. US. (ft)	379.89	Weir Sta DS (ft)	
E.G. DS (ft)	379.93	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	379.81	Wr Top Wdth (ft)	
Q US (cfs)	2002.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	203.14	Weir Avg Depth (ft)	
Q DS (cfs)	1796.61	Weir Flow Area (sq ft)	
Perc Q Leaving	10.26	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	203.14	Q Culv Group (cfs)	203.14
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6350

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.25	2.84	383.98	4.85	383.88	29.21	382.05	29.42	382
31.52	381.83	32.17	381.8	32.46	381.78	34.04	381.73	35.06	381.64
53.47	380.4	61.23	380	61.52	379.95	62.6	379.83	66.18	379.72
67.82	379.63	68.74	379.59	124.99	378	139.11	377.29	159.11	376.32
161.58	376.22	169.81	376	175.65	375.83	176.25	375.83	201	374.61
220.13	373.39	226.47	371.43	230.05	370.32	235.85	369.8	238.08	367.36
241.57	366.97	246.9	368.37	249.25	372.63	256.57	374.75	266.03	377.5
266.59	378	329.45	378	332.13	377.82	334.24	377.69	335.82	377.59
339.75	377.35	347.23	377.86	349.56	378	359.53	377.16	360.29	377.08
378.66	378	382.15	378.35	383.71	378.55	386.87	378.91	388.05	379.05
394.9	380	395.88	380.18	400.2	380.85	405.44	381.69	407.44	382
409.21	382.33	411.05	382.5	417.68	383.44	420.21	383.65	423.51	383.96
426	384.23	427.13	384.2	428.56	384.3	433.67	384.73	437.93	385.11
441.27	385.38	449.14	386.13	468.97	388				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	220.13	.04	249.25	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
220.13 249.25 52.33 53.78 55.24 .1 .3
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
264.6 271.9 390 F
325.6 345.5 390 F
Blocked Obstructions num= 1
Sta L Sta R Elev
271.9 325.6 390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6296

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.85	5.73	386.49	14.33	386	18.53	385.51	23.71	384.86
25.79	384.56	29.31	384	30.39	383.8	37.57	382.43	39.51	382.02
41.76	381.69	54.85	380	70.55	379.5	94.75	378.51	95.08	378.49
95.41	378.49	98.12	378.36	99.34	378.31	103.26	378.2	106.66	378.14
108.29	378.08	109.53	378.06	141.16	376.68	172.07	375.5	191.67	374.94
202.55	371.87	209.11	370.03	214.77	369.87	215.93	367.68	217.55	367.41
219.25	367.49	221.17	369	223.1	368.24	224.71	368.4	227.95	371.85
232.63	373.42	243.36	377.02	259.81	378.9	289.8	379.01	303.36	379.05
308.59	379.33	337.18	380	341.87	380.42	350.42	381.43	353.73	381.8
355.27	382	358.1	382.65	364.11	384	366.25	384.53	371.48	385.78
372.48	386	389.73	388	393.2	388.71	393.82	388.77	394.89	388.96
396.31	389.18	398.15	389.31	401.07	389.7	406.01	389.86	406.78	389.82
409.23	389.97	409.46	390	423.29	390.45	424.72	390.55	426.95	390.71
438.44	391.5	444.21	391.79	445.96	392	456.32	394	459.74	394.71
466.2	396	479.75	398						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	214.77	.04	227.95	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
214.77 227.95 98.47 99.02 99.58 .3 .5
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 183.5 377.1 F
269.7 479.75 377.1 F
Blocked Obstructions num= 1
Sta L Sta R Elev
378.4 432.4 395

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 6250

INPUT
Description: Hearthstone Road
Distance from Upstream XS = 41
Deck/Roadway Width = 30
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
109.53	378.06		126.2	378.165		148.4	377.583	
171.8	377.249		194.8	377.026		219.5	377.097	
242.2	377.664		267.9	378.981		291.3	380.656	
311.7	383.135		336.6	385.512		479.75	398	

Upstream Bridge Cross Section Data
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.85	5.73	386.49	14.33	386	18.53	385.51	23.71	384.86
25.79	384.56	29.31	384	30.39	383.8	37.57	382.43	39.51	382.02
41.76	381.69	54.85	380	70.55	379.5	94.75	378.51	95.08	378.49
95.41	378.49	98.12	378.36	99.34	378.31	103.26	378.2	106.66	378.14
108.29	378.08	109.53	378.06	141.16	376.68	172.07	375.5	191.67	374.94
202.55	371.87	209.11	370.03	214.77	369.87	215.93	367.68	217.55	367.41
219.25	367.49	221.17	369	223.1	368.24	224.71	368.4	227.95	371.85

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  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        214.77  227.95            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

Downstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    93.6     378            109 378.165           131.9 377.583
   155.7 377.249          179.1 377.026           204.2 377.097
   227.3 377.664          253.6 378.981           277.3 380.656
   306.1 383.135          331.6 385.512          338.94     386

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.5    2.88  381.26     8.6  380.81   10.21   380.8   18.26  381.42
   23.64  381.72   28.86     382   31.26  382.04   31.91  382.04   38.99     382
   43.19   381.9    43.7  381.88   47.28  381.77   47.53  381.75   49.17   381.7
   49.49  381.68    51.7  381.59   53.73  381.49   76.26  380.56   76.87  380.53
   77.82  380.46   79.53  380.32   83.18     380   86.26  379.56   88.68  379.19
   90.12  378.97   98.61     378  127.05   376.5  131.06   376.5  161.92   376.1
  189.14  374.65  197.54  369.94  197.55  369.93  203.42  366.64  221.43  366.39
  225.24  370.02  227.55  372.22  227.56  372.23  229.54   374.1  255.33   377.5
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        197.54  225.24            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5     373       F
   229.3  443.14     373       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
```

```
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              24.8   62.23     .013     .013        0                  .5                1
Upstream   Elevation =  367.33
           Centerline Station =  217
Downstream Elevation =  367.76
           Centerline Station =  210

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              24.8   62.41     .013     .013        0                  .5                1
Upstream   Elevation =  367.28
           Centerline Station =  223
Downstream Elevation =  366.19
           Centerline Station =  215

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         63.30    Culv Full Len (ft)
  # Barrels                     1    Culv Vel US (ft/s)          5.39
  Q Barrel (cfs)             63.30    Culv Vel DS (ft/s)          7.61
  E.G. US. (ft)             371.52    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             371.34    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              370.32    Culv Frctn Ls (ft)          0.10
  W.S. DS (ft)              370.28    Culv Exit Loss (ft)         0.86
  Delta EG (ft)               1.21    Culv Entr Loss (ft)         0.23
  Delta WS (ft)               1.06    Q Weir (cfs)
  E.G. IC (ft)              371.00    Weir Sta Lft (ft)
  E.G. OC (ft)              371.54    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        370.86    Weir Max Depth (ft)
  Culv WS Outlet (ft)       370.28    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.40    Min El Weir Flow (ft)     377.04


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        102.37    Culv Full Len (ft)         28.76
  # Barrels                     1    Culv Vel US (ft/s)          8.15
  Q Barrel (cfs)            102.37    Culv Vel DS (ft/s)          9.18
  E.G. US. (ft)             373.21    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             373.10    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              371.14    Culv Frctn Ls (ft)          0.15
  W.S. DS (ft)              371.08    Culv Exit Loss (ft)         1.25
  Delta EG (ft)               2.07    Culv Entr Loss (ft)         0.52
  Delta WS (ft)               2.01    Q Weir (cfs)
  E.G. IC (ft)              372.67    Weir Sta Lft (ft)
  E.G. OC (ft)              373.22    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)
  Culv WS Outlet (ft)       371.08    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         3.06    Min El Weir Flow (ft)     377.04


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        169.34    Culv Full Len (ft)         62.23
  # Barrels                     1    Culv Vel US (ft/s)         13.48
  Q Barrel (cfs)            169.34    Culv Vel DS (ft/s)         13.48
  E.G. US. (ft)             378.17    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             378.11    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              373.25    Culv Frctn Ls (ft)          0.87
  W.S. DS (ft)              373.07    Culv Exit Loss (ft)         2.65
  Delta EG (ft)               4.92    Culv Entr Loss (ft)         1.41
  Delta WS (ft)               5.04    Q Weir (cfs)              230.61
  E.G. IC (ft)              377.25    Weir Sta Lft (ft)         105.18
  E.G. OC (ft)              378.17    Weir Sta Rgt (ft)         252.00
  Culvert Control           Outlet    Weir Submerg                0.00
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)         1.14
  Culv WS Outlet (ft)       371.76    Weir Avg Depth (ft)         0.66
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)     96.41
  Culv Crt Depth (ft)         3.72    Min El Weir Flow (ft)     377.04
```

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	154.61	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.30
Q Barrel (cfs)	154.61	Culv Vel DS (ft/s)	12.30
E.G. US. (ft)	379.15	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	378.96	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	375.32	Culv Frctn Ls (ft)	0.72
W.S. DS (ft)	374.89	Culv Exit Loss (ft)	1.92
Delta EG (ft)	3.83	Culv Entr Loss (ft)	1.18
Delta WS (ft)	4.07	Q Weir (cfs)	875.39
E.G. IC (ft)	376.05	Weir Sta Lft (ft)	78.67
E.G. OC (ft)	379.14	Weir Sta Rgt (ft)	270.51
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.14
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.38
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	265.35
Culv Crt Depth (ft)	3.63	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	149.95	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.93
Q Barrel (cfs)	149.95	Culv Vel DS (ft/s)	11.93
E.G. US. (ft)	379.56	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.30	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.14	Culv Frctn Ls (ft)	0.68
W.S. DS (ft)	375.55	Culv Exit Loss (ft)	1.62
Delta EG (ft)	3.41	Culv Entr Loss (ft)	1.11
Delta WS (ft)	3.75	Q Weir (cfs)	1229.20
E.G. IC (ft)	375.69	Weir Sta Lft (ft)	68.89
E.G. OC (ft)	379.55	Weir Sta Rgt (ft)	275.89
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.53
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.65
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	342.09
Culv Crt Depth (ft)	3.60	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	146.44	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.65
Q Barrel (cfs)	146.44	Culv Vel DS (ft/s)	11.65
E.G. US. (ft)	379.83	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.53	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.72	Culv Frctn Ls (ft)	0.65
W.S. DS (ft)	376.01	Culv Exit Loss (ft)	1.40
Delta EG (ft)	3.11	Culv Entr Loss (ft)	1.06
Delta WS (ft)	3.51	Q Weir (cfs)	1503.54
E.G. IC (ft)	375.43	Weir Sta Lft (ft)	60.70
E.G. OC (ft)	379.83	Weir Sta Rgt (ft)	279.53
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.79
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	397.62
Culv Crt Depth (ft)	3.57	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	78.67	Culv Full Len (ft)	5.94
# Barrels	1	Culv Vel US (ft/s)	8.77
Q Barrel (cfs)	78.67	Culv Vel DS (ft/s)	6.26
E.G. US. (ft)	371.52	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	371.34	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	370.32	Culv Frctn Ls (ft)	0.02
W.S. DS (ft)	370.28	Culv Exit Loss (ft)	0.57
Delta EG (ft)	1.21	Culv Entr Loss (ft)	0.35
Delta WS (ft)	1.06	Q Weir (cfs)	
E.G. IC (ft)	371.51	Weir Sta Lft (ft)	
E.G. OC (ft)	371.76	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	369.97	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.79	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.69	Min El Weir Flow (ft)	377.04

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	109.15	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	8.69
Q Barrel (cfs)	109.15	Culv Vel DS (ft/s)	8.69
E.G. US. (ft)	373.21	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	373.10	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	371.14	Culv Frctn Ls (ft)	0.36
W.S. DS (ft)	371.08	Culv Exit Loss (ft)	1.11
Delta EG (ft)	2.07	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.01	Q Weir (cfs)	
E.G. IC (ft)	372.93	Weir Sta Lft (ft)	
E.G. OC (ft)	373.20	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.16	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	169.37	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	13.48
Q Barrel (cfs)	169.37	Culv Vel DS (ft/s)	13.48
E.G. US. (ft)	378.17	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.11	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	373.25	Culv Frctn Ls (ft)	0.87
W.S. DS (ft)	373.07	Culv Exit Loss (ft)	2.65
Delta EG (ft)	4.92	Culv Entr Loss (ft)	1.41
Delta WS (ft)	5.04	Q Weir (cfs)	230.61
E.G. IC (ft)	377.16	Weir Sta Lft (ft)	105.18
E.G. OC (ft)	378.17	Weir Sta Rgt (ft)	252.00
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	1.14
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	0.66
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	96.41
Culv Crt Depth (ft)	3.72	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	154.79	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.32
Q Barrel (cfs)	154.79	Culv Vel DS (ft/s)	12.32
E.G. US. (ft)	379.15	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.96	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	375.32	Culv Frctn Ls (ft)	0.73
W.S. DS (ft)	374.89	Culv Exit Loss (ft)	1.93
Delta EG (ft)	3.83	Culv Entr Loss (ft)	1.18
Delta WS (ft)	4.07	Q Weir (cfs)	875.39
E.G. IC (ft)	375.96	Weir Sta Lft (ft)	78.67
E.G. OC (ft)	379.15	Weir Sta Rgt (ft)	270.51
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.14
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.38
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	265.35
Culv Crt Depth (ft)	3.63	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	150.13	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.95
Q Barrel (cfs)	150.13	Culv Vel DS (ft/s)	11.95
E.G. US. (ft)	379.56	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.30	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.14	Culv Frctn Ls (ft)	0.68
W.S. DS (ft)	375.55	Culv Exit Loss (ft)	1.63
Delta EG (ft)	3.41	Culv Entr Loss (ft)	1.11
Delta WS (ft)	3.75	Q Weir (cfs)	1229.20
E.G. IC (ft)	375.61	Weir Sta Lft (ft)	68.89
E.G. OC (ft)	379.56	Weir Sta Rgt (ft)	275.89
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.53

Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.65
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	342.09
Culv Crt Depth (ft)	3.60	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	146.63	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.67
Q Barrel (cfs)	146.63	Culv Vel DS (ft/s)	11.67
E.G. US. (ft)	379.83	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.53	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.72	Culv Frctn Ls (ft)	0.65
W.S. DS (ft)	376.01	Culv Exit Loss (ft)	1.41
Delta EG (ft)	3.11	Culv Entr Loss (ft)	1.06
Delta WS (ft)	3.51	Q Weir (cfs)	1503.54
E.G. IC (ft)	375.34	Weir Sta Lft (ft)	60.70
E.G. OC (ft)	379.84	Weir Sta Rgt (ft)	279.53
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.79
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	397.62
Culv Crt Depth (ft)	3.57	Min El Weir Flow (ft)	377.04

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6197

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39
225.24	370.02	227.55	372.22	227.56	372.23	229.54	374.1	255.33	377.5
286.19	380.21	290.61	381.26	291.85	381.66	302.93	382	306.38	382.34
307.8	382.5	315.82	383.3	321.82	384	332.19	385.15	338.94	386
354.08	387.58	358.3	388	361.22	388.32	364.98	388.73	371.17	389.42
376.5	390	377.44	390.09	382.23	390.53	383.73	390.65	389.09	391.12
395.34	391.57	396	391.63	401.1	392	405.04	392.54	406.26	392.72
413.74	394	418.95	394.57	420.55	394.73	421.65	394.84	427.34	395.45
432.93	395.77	433.17	395.8	434.1	395.89	438.66	396.46	441.16	396.79
443.14	397.11								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	197.54	.04	225.24	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.54	225.24	75.78	74.81	73.83	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	180.5	373	F
229.3	443.14	373	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
23.7	63.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6122

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.69	8.11	379.53	9.53	379.45	17.27	379.23	20.32	379.02
22.13	378.95	24.3	378.81	31.57	378.41	34.72	378.26	38.27	378.14
47.27	377.96	49.2	377.94	52.81	377.79	56.11	377.88	60.11	377.91

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   62.59  377.87   64.37  377.81   65.09  377.76   66.54   377.7   67.14  377.65
   68.62  377.58   71.62  377.27   75.62  376.99    79.3  376.57    81.7  376.35
   84.46     376  105.56  374.69  108.26  374.67  121.47  375.38  123.91   375.3
  125.19  375.41  127.48  375.55  129.74  375.66  131.98  375.57  134.89  375.74
  137.16  375.81  137.87  375.78  140.09  375.81  142.39  375.77  145.17  375.64
     148  375.41   151.1  375.05  154.75  374.52  159.06  373.88  159.11  374.24
   175.4  373.46  185.87  373.46  213.06  372.27  225.58  370.42  231.74  369.51
  232.66  367.04  234.89  366.62  240.64  367.46   244.1  370.65  253.02  370.54
  255.64  371.33  278.66  378.25  302.77  378.97  352.21     380   359.2  381.14
  364.26     382  367.65   382.7  370.16  383.19  373.86     384  378.45  385.21
  381.62     386  383.59  386.52  388.85     388  390.89  388.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  225.58     .04   244.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        225.58   244.1             98.18   94.21   91.92             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
   119.8   162.9     385       F
   185.6   201.5     385       F
   272.4   384.9     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   162.9   185.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6028

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   382.8   19.58  382.41   21.78  382.31   25.29     382   28.82  381.21
   33.73     380   38.53  378.96   47.92  377.02   53.08     376   53.61  375.96
   54.06  375.94    63.8  375.32   75.35  374.08   75.77     374   75.87     374
   79.55   373.5   79.83  373.47   80.44  373.45   80.74   373.5   108.3  372.93
  132.26  372.05  132.53     372  152.08     371  183.23  368.87  204.31   368.6
  204.32   368.6   205.1  368.59  214.72  368.32  216.43  366.61  219.36  365.53
  223.23  366.03  225.53  367.69  234.47  368.82  242.06  369.78  266.05  372.16
  283.38  373.66  295.75  374.49  302.61  375.35  306.21  375.74  307.44   375.9
  308.45     376  309.16  376.16  309.43  376.21  312.19  376.42  326.29  377.09
  336.37  377.85  338.16     378  343.77  379.27  346.84     380  352.57  381.65
  353.72     382  360.42     384  366.91     386  373.75     388  374.25  388.15
  375.39  388.44  376.82  388.77   382.2     390  385.62  390.91   387.5  391.38
  390.05     392  391.18  392.24  393.51   392.7  394.79  392.94   395.7  393.09
  396.68  393.28  398.05   393.5  400.71     394  401.05  394.02  401.31  394.02
  401.89  394.05  402.27  394.05  404.67  394.17

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.72     .04  234.47    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.72  234.47           100.93  101.91  101.19             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
      61   113.9     390       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    19.7      61     390   393.1  404.67     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5926

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.59     5.1     382     9.3  381.27   15.23  380.26   16.79     380
    17.4  379.93   17.99  379.89   25.61  379.19   28.72  378.92   41.87  378.06
   42.14  378.04   42.69  378.01    42.8     378   47.15  377.66   50.35  377.44
```

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   52.95  377.29   54.78  377.18   55.85  377.13   57.24  377.07   58.56  376.99
   61.22   376.9    62.6   376.8   64.49  376.66    65.4  376.61   68.93  376.32
   69.43  376.28   72.62     376   79.17  375.23   79.85  375.13   81.75  374.86
   86.54  374.13    86.9  374.08   87.35     374   97.43   372.6  101.22     372
  101.71  371.98  102.49  371.97  103.31  371.98  103.65     372   103.7  371.95
  108.23  371.29  120.13  371.02  124.98  371.02  148.13   370.3   170.6  369.08
  174.12  367.61  175.06  367.22  180.45  367.62  186.44  367.24   187.3  365.38
  189.41  365.46  192.74  365.89  197.28  368.62  204.41  369.15  222.38  370.47
  248.76  371.19     255     372  274.29   373.9  275.14     374  287.23     376
  292.49  377.34  295.11     378  299.87  379.19  303.25     380  311.49     382
  318.69  383.66  320.08     384  327.45  385.84  328.11     386  335.19  387.48
  337.59     388  343.86  388.94  350.88     390  354.59  390.61   356.8  390.96

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.44     .04  197.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.44  197.28          102.11  102.54  102.93             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    60.6    75.4     385       F
   103.4   163.4     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    75.4   103.4     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5824

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.17    1.53  379.09    3.56  378.96    5.73   378.8    8.65  378.57
   10.86   378.4   11.67  378.34   15.69     378   20.08  377.29   27.83     376
   29.81  375.82   31.38  375.67   39.63  374.92   42.87  374.63   44.59   374.5
   49.91     374   62.23  371.55   92.34  370.63  109.26   369.2  110.94  369.06
  120.72  365.29  124.37  365.08  126.51  365.24  130.92  367.14  139.51  368.75
  157.36   372.1  180.06  370.47  190.05  370.47  216.33     372  219.38  372.57
  223.55  373.34  225.27  373.66  227.19     374  231.58  375.26  234.22     376
  234.79  376.18  240.58     378  243.82  379.15  246.06     380  248.42  380.86
  251.63     382  257.95  383.86   258.4     384  260.44   384.5  266.77     386
  268.22  386.33  275.61     388  278.96   388.7   285.3     390  291.48  391.05
  292.67  391.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  109.26     .04  139.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        109.26  139.51           75.62   79.21   82.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5745

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     380    15.5  378.48   20.71     378    30.8  377.15   37.79  376.64
    40.3  376.44   46.11  376.04   46.38     376    47.1  375.96   69.11     374
    77.1  373.47  103.89  370.86  131.17   369.6  133.12  368.74  140.37  365.55
  143.61     365  144.73  363.71  148.48  363.03  150.47  363.33   159.4  368.15
  163.52  368.56  176.34  369.82  186.31   370.3  194.64  373.03  209.12  373.26
  225.27  372.55   225.6  372.55  225.92  372.54  226.18  372.55   226.7  372.55
   233.5  372.96   233.9  372.98  234.19     373  234.39     373  234.53  373.01
  234.67  373.01  234.83  373.02  242.93  373.56  243.64  373.58  246.98  373.68
  250.97   373.8  257.66     374  263.52  375.65  264.76     376  265.45  376.19
  271.67     378     272  378.09  278.61     380  283.25  381.15  286.54     382
  296.07  383.94  296.19  383.96  296.34     384  296.53  384.04  296.57  384.04
  296.61  384.05  296.75  384.07  297.08  384.12   302.2  384.91  306.31  385.41
  307.97  385.64  308.53  385.72  311.26     386  312.97  386.11  313.27  386.13
```

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   317.7  386.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  131.17     .04   159.4    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        131.17   159.4            34.07   34.02   34.04             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   170.3   207.9     385       F
   225.8   247.8     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   207.9   225.8     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5711

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.06  162.62            96.24   96.18   98.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5650

INPUT
Description: Brookemede Road
Distance from Upstream XS =      37
Deck/Roadway Width        =      37
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     101 372.301             151 370.157             188 369.953
   218.7 370.181

Upstream Bridge Cross Section Data
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
```

```
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        136.06  162.62            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  128.33  372.41           152.3 372.301           202.9 370.157
   238.6 369.953           268.9 370.181

Downstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  375.09    1.07  375.04    1.94  375.04    2.62  375.01    3.78  375.02
       5  374.95    6.16  374.97   13.83   374.5   15.25  374.52   31.31  375.33
   32.18  375.35   39.66   374.3   45.41  373.86   50.93  373.59   53.48  373.55
   59.91  373.31    62.6  373.32   81.57  373.51   85.54  373.44   92.18  373.21
   98.33  373.03  102.35  373.09  105.39  372.98  113.27  372.64  128.33  372.41
  164.68   369.2  190.47  367.33  202.12  366.92  205.34  366.81  210.08   364.6
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        205.34   238.7            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8   367.8       F
     239   440.9   367.8       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  361.93
           Centerline Station =  148
Downstream Elevation =  362.09
           Centerline Station =  215
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Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  362.32
           Centerline Station =  153
Downstream Elevation =  362.32
           Centerline Station =  220
```

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	71.91	Culv Full Len (ft)	39.84
# Barrels	1	Culv Vel US (ft/s)	5.72
Q Barrel (cfs)	71.91	Culv Vel DS (ft/s)	5.78
E.G. US. (ft)	366.88	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	366.77	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	366.02	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	365.96	Culv Exit Loss (ft)	0.46
Delta EG (ft)	0.86	Culv Entr Loss (ft)	0.25
Delta WS (ft)	0.81	Q Weir (cfs)	
E.G. IC (ft)	365.93	Weir Sta Lft (ft)	
E.G. OC (ft)	366.89	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	
Culv WS Outlet (ft)	365.96	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.56	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	106.02	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	8.44
Q Barrel (cfs)	106.02	Culv Vel DS (ft/s)	8.44
E.G. US. (ft)	368.75	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	368.68	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	366.83	Culv Frctn Ls (ft)	0.34
W.S. DS (ft)	366.76	Culv Exit Loss (ft)	1.03
Delta EG (ft)	1.92	Culv Entr Loss (ft)	0.55
Delta WS (ft)	1.92	Q Weir (cfs)	
E.G. IC (ft)	367.45	Weir Sta Lft (ft)	
E.G. OC (ft)	368.76	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.12	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	76.61	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	6.10
Q Barrel (cfs)	76.61	Culv Vel DS (ft/s)	6.10
E.G. US. (ft)	372.10	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.01	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	371.12	Culv Frctn Ls (ft)	0.18
W.S. DS (ft)	371.07	Culv Exit Loss (ft)	0.53
Delta EG (ft)	0.98	Culv Entr Loss (ft)	0.29
Delta WS (ft)	0.94	Q Weir (cfs)	417.02
E.G. IC (ft)	366.12	Weir Sta Lft (ft)	105.87
E.G. OC (ft)	372.11	Weir Sta Rgt (ft)	251.68
Culvert Control	Outlet	Weir Submerg	0.34
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	2.13
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.11
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	130.43
Culv Crt Depth (ft)	2.65	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	58.91	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.69
Q Barrel (cfs)	58.91	Culv Vel DS (ft/s)	4.69
E.G. US. (ft)	373.12	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.86	Culv Inv El Dn (ft)	362.09

E.G. DS (ft)	372.61	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	372.52	Culv Exit Loss (ft)	0.25
Delta EG (ft)	0.51	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.34	Q Weir (cfs)	1068.26
E.G. IC (ft)	365.41	Weir Sta Lft (ft)	78.15
E.G. OC (ft)	373.14	Weir Sta Rgt (ft)	256.64
Culvert Control	Outlet	Weir Submerg	0.69
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.17
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.61
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	287.96
Culv Crt Depth (ft)	2.31	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	56.20	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.47
Q Barrel (cfs)	56.20	Culv Vel DS (ft/s)	4.47
E.G. US. (ft)	373.53	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.15	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.11	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.98	Culv Exit Loss (ft)	0.18
Delta EG (ft)	0.42	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.17	Q Weir (cfs)	1418.19
E.G. IC (ft)	365.31	Weir Sta Lft (ft)	71.75
E.G. OC (ft)	373.54	Weir Sta Rgt (ft)	258.54
Culvert Control	Outlet	Weir Submerg	0.75
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.56
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.93
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	360.13
Culv Crt Depth (ft)	2.26	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	53.66	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.27
Q Barrel (cfs)	53.66	Culv Vel DS (ft/s)	4.27
E.G. US. (ft)	373.80	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.33	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.45	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.30	Culv Exit Loss (ft)	0.14
Delta EG (ft)	0.35	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.03	Q Weir (cfs)	1690.49
E.G. IC (ft)	365.21	Weir Sta Lft (ft)	67.25
E.G. OC (ft)	373.81	Weir Sta Rgt (ft)	259.91
Culvert Control	Outlet	Weir Submerg	0.79
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.85
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	2.15
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	413.96
Culv Crt Depth (ft)	2.20	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	70.07	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.68
Q Barrel (cfs)	70.07	Culv Vel DS (ft/s)	5.83
E.G. US. (ft)	366.88	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	366.77	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	366.02	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	365.96	Culv Exit Loss (ft)	0.47
Delta EG (ft)	0.86	Culv Entr Loss (ft)	0.25
Delta WS (ft)	0.81	Q Weir (cfs)	
E.G. IC (ft)	366.24	Weir Sta Lft (ft)	
E.G. OC (ft)	366.87	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.12	Weir Max Depth (ft)	
Culv WS Outlet (ft)	365.96	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.53	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	105.50	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	8.40
Q Barrel (cfs)	105.50	Culv Vel DS (ft/s)	8.40
E.G. US. (ft)	368.75	Culv Inv El Up (ft)	362.32

W.S. US. (ft)	368.68	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	366.83	Culv Frctn Ls (ft)	0.34
W.S. DS (ft)	366.76	Culv Exit Loss (ft)	1.02
Delta EG (ft)	1.92	Culv Entr Loss (ft)	0.55
Delta WS (ft)	1.92	Q Weir (cfs)	
E.G. IC (ft)	367.81	Weir Sta Lft (ft)	
E.G. OC (ft)	368.74	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.11	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	75.70	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	6.02
Q Barrel (cfs)	75.70	Culv Vel DS (ft/s)	6.02
E.G. US. (ft)	372.10	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.01	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	371.12	Culv Frctn Ls (ft)	0.17
W.S. DS (ft)	371.07	Culv Exit Loss (ft)	0.52
Delta EG (ft)	0.98	Culv Entr Loss (ft)	0.28
Delta WS (ft)	0.94	Q Weir (cfs)	417.02
E.G. IC (ft)	366.47	Weir Sta Lft (ft)	105.87
E.G. OC (ft)	372.09	Weir Sta Rgt (ft)	251.68
Culvert Control	Outlet	Weir Submerg	0.34
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	2.13
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.11
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	130.43
Culv Crt Depth (ft)	2.63	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	57.62	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.59
Q Barrel (cfs)	57.62	Culv Vel DS (ft/s)	4.59
E.G. US. (ft)	373.12	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.86	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	372.61	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.52	Culv Exit Loss (ft)	0.23
Delta EG (ft)	0.51	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.34	Q Weir (cfs)	1068.26
E.G. IC (ft)	365.75	Weir Sta Lft (ft)	78.15
E.G. OC (ft)	373.11	Weir Sta Rgt (ft)	256.64
Culvert Control	Outlet	Weir Submerg	0.69
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.17
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.61
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	287.96
Culv Crt Depth (ft)	2.29	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	54.89	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.37
Q Barrel (cfs)	54.89	Culv Vel DS (ft/s)	4.37
E.G. US. (ft)	373.53	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.15	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.11	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	372.98	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.42	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.17	Q Weir (cfs)	1418.19
E.G. IC (ft)	365.64	Weir Sta Lft (ft)	71.75
E.G. OC (ft)	373.52	Weir Sta Rgt (ft)	258.54
Culvert Control	Outlet	Weir Submerg	0.75
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.56
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.93
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	360.13
Culv Crt Depth (ft)	2.23	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	52.46	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.17
Q Barrel (cfs)	52.46	Culv Vel DS (ft/s)	4.17

E.G. US. (ft)	373.80	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.33	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.45	Culv Frctn Ls (ft)	0.08
W.S. DS (ft)	373.30	Culv Exit Loss (ft)	0.12
Delta EG (ft)	0.35	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.03	Q Weir (cfs)	1690.49
E.G. IC (ft)	365.54	Weir Sta Lft (ft)	67.25
E.G. OC (ft)	373.79	Weir Sta Rgt (ft)	259.91
Culvert Control	Outlet	Weir Submerg	0.79
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.85
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	2.15
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	413.96
Culv Crt Depth (ft)	2.18	Min El Weir Flow (ft)	369.97

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5614

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	375.09	1.07	375.04	1.94	375.04	2.62	375.01	3.78	375.02
5	374.95	6.16	374.97	13.83	374.5	15.25	374.52	31.31	375.33
32.18	375.35	39.66	374.3	45.41	373.86	50.93	373.59	53.48	373.55
59.91	373.31	62.6	373.32	81.57	373.51	85.54	373.44	92.18	373.21
98.33	373.03	102.35	373.09	105.39	372.98	113.27	372.64	128.33	372.41
164.68	369.2	190.47	367.33	202.12	366.92	205.34	366.81	210.08	364.6
211.22	364.43	215.09	361.81	217.13	362.04	229.59	362.98	238.7	368.44
238.98	368.61	251.44	369.69	268.94	370.18	285.07	369.62	290.27	370.06
298.37	370.04	306.37	370.28	324.69	371.75	335.39	372	342.38	373.55
344.58	374	353.22	376	364.13	378	366.42	378.31	380.54	380.03
386.38	380.25	391.69	380.39	399.18	380.94	403.65	381.15	406.06	381.34
407.91	381.42	410.66	381.64	411.73	381.67	415.82	382	420.24	382.3
421.1	382.39	423.89	382.58	424.39	382.64	428.52	382.91	431.83	383.32
435.07	383.79	435.47	383.82	436.48	384	438.12	384.43	440.9	385.22

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	205.34	.04	238.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
205.34	238.7	60.47	54.67	45.26	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	193.8	367.8	F
239	440.9	367.8	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
72.7	102.2	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5560

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.71	12.44	380.66	20.28	380.48	30.01	380.06	32.55	380
35.14	379.9	40.44	379.76	66.9	378.85	77.73	378.19	86.8	377.53
106.28	376	135.5	374	137.27	373.83	145.55	373.21	146.86	373.14
152.29	373.03	158.19	372.73	169.54	372.53	171.14	372.42	174.7	372
177.92	371.83	200.19	370.97	216.51	371.11	224.54	370.88	233.81	370.74
237.26	370.65	249.92	370	272.36	369.5	305.11	368.25	330.75	367.7
351.63	367.26	351.64	367.26	352.8	367.24	361.62	364.64	365.14	363.68
366.63	362.08	370.12	362.09	377.69	362.11	381.2	366.86	381.86	366.92
381.88	366.92	400.75	368.4	415.84	369.84	428.22	370.13	441.48	370.08
454.62	370.47	468.56	371.58	474.03	371.79	478.41	372	486.49	373.21
492.4	374	496.8	374.72	506.14	376	510.13	376.65	519.35	378
525.84	378.52	527.4	378.56	530.32	378.74	538.47	379.03	541.22	379.02
541.91	379.05	543.2	379.02	545.47	379.17	545.81	379.17	552.05	379.68
557.2	380.19	563.37	380.95	569.96	382	577.27	384	584.9	386

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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   352.8     .04   381.2    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         352.8   381.2            56.62   49.74    41.3             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5510

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        251.67  273.96            36.56   36.42   38.18             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385          F
   180.5   232.8     385          F
   232.8   241.8  367.86          F
   281.5   313.2  368.03          F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 5500

INPUT
Description: Driveway
Distance from Upstream XS =    8.75
Deck/Roadway Width        =    11.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     245     368           246.3 368.296           251.7 369.922 368.922
   261.7 369.925 368.925   272.1 369.867 368.867   278.5 368.291
     281   367.8

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
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  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        251.67  273.96            .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  218.37  367.75           222.9 368.709           228.8 369.891 368.891
   238.9 369.925 368.925     248 369.959 368.959   254.6 368.591
  256.61  368.13

Downstream Bridge Cross Section Data
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.2    5.49  380.43   19.15  378.55   22.99     378   24.44  377.87
    27.6  377.66   28.15  377.66   32.08  377.85   34.11  377.81   34.84  377.86
   36.16  377.76    36.5  377.71   36.95   377.6   37.24  377.63   37.53  377.55
   43.71  377.04   44.96  377.01   53.85  377.19   61.96  376.88   69.36  376.67
    78.2  376.53   80.32  376.46   85.59  376.16   86.54  376.08   87.13     376
   96.16     374  106.12     372  115.26     370  135.49  369.25  142.97   369.5
  155.72     370  160.13  369.38  160.65  369.34  161.19  369.38  161.22  369.44
  161.24  368.96  165.72  368.71  205.57  368.19  226.91  367.45  227.84  367.41
  239.06  361.76  241.96   361.6  245.76  361.52  251.97  367.85  256.98  368.15
  272.47  369.07  292.37  370.16  313.15  370.81  318.99   371.3  321.33   371.4
  339.22  371.96  340.43     372  349.15  373.24   355.3     374  368.27  375.86
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        227.84  251.97            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
```

Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	365.81	Element		
W.S. US. (ft)	365.50	E.G. Elev (ft)	365.74	365.61
Q Total (cfs)	141.98	W.S. Elev (ft)	365.41	365.45
Q Bridge (cfs)	141.98	Crit W.S. (ft)	364.64	363.69
Q Weir (cfs)		Max Chl Dpth (ft)	3.25	3.93
Weir Sta Lft (ft)		Vel Total (ft/s)	4.65	3.11
Weir Sta Rgt (ft)		Flow Area (sq ft)	30.53	45.59
Weir Submerg		Froude # Chl	0.58	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	58.61	89.17
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.03	2.80
Min El Prs (ft)	368.93	W.P. Total (ft)	17.00	19.78
Delta EG (ft)	0.24	Conv. Total (cfs)	1675.6	2955.2
Delta WS (ft)	0.08	Top Width (ft)	15.04	16.29
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	4.65	C & E Loss (ft)	0.09	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.80	0.33
BR Sel Method	Energy only	Power Total (lb/ft s)	3.74	1.03

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	366.62	Element		
W.S. US. (ft)	366.27	E.G. Elev (ft)	366.55	366.42
Q Total (cfs)	211.52	W.S. Elev (ft)	366.17	366.22
Q Bridge (cfs)	211.52	Crit W.S. (ft)	365.17	364.21
Q Weir (cfs)		Max Chl Dpth (ft)	4.01	4.70
Weir Sta Lft (ft)		Vel Total (ft/s)	4.94	3.61
Weir Sta Rgt (ft)		Flow Area (sq ft)	42.80	58.60
Weir Submerg		Froude # Chl	0.43	0.29
Weir Max Depth (ft)		Specif Force (cu ft)	98.69	138.82
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.55	3.29
Min El Prs (ft)	368.93	W.P. Total (ft)	19.63	22.24
Delta EG (ft)	0.24	Conv. Total (cfs)	2673.2	4152.4
Delta WS (ft)	0.08	Top Width (ft)	16.78	17.81
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	4.94	C & E Loss (ft)	0.09	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.85	0.43
BR Sel Method	Energy only	Power Total (lb/ft s)	4.21	1.54

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	371.08	Element		
W.S. US. (ft)	370.98	E.G. Elev (ft)	371.05	371.03
Q Total (cfs)	569.32	W.S. Elev (ft)	370.99	370.97
Q Bridge (cfs)	260.83	Crit W.S. (ft)	366.98	366.07
Q Weir (cfs)		Max Chl Dpth (ft)	8.83	9.45
Weir Sta Lft (ft)		Vel Total (ft/s)	1.69	1.55
Weir Sta Rgt (ft)		Flow Area (sq ft)	336.95	366.31
Weir Submerg		Froude # Chl	0.12	0.11
Weir Max Depth (ft)		Specif Force (cu ft)	710.64	843.72
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.05	2.17
Min El Prs (ft)	368.93	W.P. Total (ft)	212.89	222.87
Delta EG (ft)	0.07	Conv. Total (cfs)	12074.1	14015.1
Delta WS (ft)	0.05	Top Width (ft)	216.68	168.85
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.01

BR Open Vel (ft/s)	2.73	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.22	0.17
BR Sel Method	Energy only	Power Total (lb/ft s)	0.37	0.26

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.54	Element		
W.S. US. (ft)	372.40	E.G. Elev (ft)	372.50	372.47
Q Total (cfs)	1184.79	W.S. Elev (ft)	372.42	372.40
Q Bridge (cfs)	257.59	Crit W.S. (ft)	369.92	368.96
Q Weir (cfs)		Max Chl Dpth (ft)	10.26	10.88
Weir Sta Lft (ft)		Vel Total (ft/s)	1.99	1.87
Weir Sta Rgt (ft)		Flow Area (sq ft)	596.06	633.67
Weir Submerg		Froude # Chl	0.12	0.11
Weir Max Depth (ft)		Specif Force (cu ft)	1416.14	1594.89
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.02	3.11
Min El Prs (ft)	368.93	W.P. Total (ft)	245.99	260.80
Delta EG (ft)	0.11	Conv. Total (cfs)	25834.0	28256.7
Delta WS (ft)	0.09	Top Width (ft)	249.59	203.72
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.02
BR Open Vel (ft/s)	2.70	C & E Loss (ft)	0.00	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.32	0.27
BR Sel Method	Energy only	Power Total (lb/ft s)	0.63	0.50

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.01	Element		
W.S. US. (ft)	372.83	E.G. Elev (ft)	372.96	372.93
Q Total (cfs)	1529.28	W.S. Elev (ft)	372.86	372.84
Q Bridge (cfs)	271.48	Crit W.S. (ft)	370.55	370.25
Q Weir (cfs)		Max Chl Dpth (ft)	10.70	11.32
Weir Sta Lft (ft)		Vel Total (ft/s)	2.23	2.11
Weir Sta Rgt (ft)		Flow Area (sq ft)	685.16	724.83
Weir Submerg		Froude # Chl	0.13	0.12
Weir Max Depth (ft)		Specif Force (cu ft)	1734.48	1927.62
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.37	3.47
Min El Prs (ft)	368.93	W.P. Total (ft)	252.36	267.06
Delta EG (ft)	0.13	Conv. Total (cfs)	31500.8	34066.2
Delta WS (ft)	0.12	Top Width (ft)	255.90	209.03
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.03	0.02
BR Open Vel (ft/s)	2.84	C & E Loss (ft)	0.00	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.40	0.34
BR Sel Method	Energy only	Power Total (lb/ft s)	0.89	0.72

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than

1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #7-30-2016

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.34	Element		
W.S. US. (ft)	373.13	E.G. Elev (ft)	373.27	373.24
Q Total (cfs)	1796.61	W.S. Elev (ft)	373.17	373.14
Q Bridge (cfs)	280.50	Crit W.S. (ft)	370.79	370.51
Q Weir (cfs)		Max Chl Dpth (ft)	11.01	11.62
Weir Sta Lft (ft)		Vel Total (ft/s)	2.40	2.28
Weir Sta Rgt (ft)		Flow Area (sq ft)	747.74	788.54
Weir Submerg		Froude # Chl	0.14	0.13
Weir Max Depth (ft)		Specif Force (cu ft)	1981.03	2184.19
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.59	3.71
Min El Prs (ft)	368.93	W.P. Total (ft)	256.82	271.35
Delta EG (ft)	0.15	Conv. Total (cfs)	35694.2	38349.5
Delta WS (ft)	0.15	Top Width (ft)	260.32	212.66
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.03	0.02
BR Open Vel (ft/s)	2.94	C & E Loss (ft)	0.00	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.46	0.40
BR Sel Method	Energy only	Power Total (lb/ft s)	1.11	0.91

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5474

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87
27.6	377.66	28.15	377.66	32.08	377.85	34.11	377.81	34.84	377.86
36.16	377.76	36.5	377.71	36.95	377.6	37.24	377.63	37.53	377.55
43.71	377.04	44.96	377.01	53.85	377.19	61.96	376.88	69.36	376.67
78.2	376.53	80.32	376.46	85.59	376.16	86.54	376.08	87.13	376
96.16	374	106.12	372	115.26	370	135.49	369.25	142.97	369.5
155.72	370	160.13	369.38	160.65	369.34	161.19	369.38	161.22	369.44
161.24	368.96	165.72	368.71	205.57	368.19	226.91	367.45	227.84	367.41
239.06	361.76	241.96	361.6	245.76	361.52	251.97	367.85	256.98	368.15
272.47	369.07	292.37	370.16	313.15	370.81	318.99	371.3	321.33	371.4
339.22	371.96	340.43	372	349.15	373.24	355.3	374	368.27	375.86
369.44	376	372.93	376.21	375.85	376.35	378.58	376.44	379.95	376.57
383.94	376.7	387.23	377.09	388.78	377.16	390.64	377.28	394.93	378
401.34	379.4	405.24	380.21	406.53	380.45	414	382	419.84	383.75
427.66	386.31								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	227.84	.04	251.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
227.84	251.97	54.4	54.86	54.94	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	224.3	367.75	F
255.8	292.3	368.13	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	29.9	385	170.3	205.7	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5419

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.86	3.78	380.71	4.98	380.68	6.09	380.65	17.15	380.11
18.16	380	18.96	379.91	19.28	379.88	19.92	379.82	26.66	379.12
33.04	378.58	34.43	378.44	39.87	378	40.43	377.97	45.3	377.68
47.96	377.57	55.03	377.19	58.61	377.04	63.94	376.76	68.35	376.51
75.42	376.11	77.27	376	79.39	375.6	88.74	374	95.93	372.25
103.06	370.55	105.38	370	106.52	369.95	124.3	369.13	143.21	368.92
147.73	368.65	154.71	368.29	193.74	367.43	212.87	367.11	212.89	367.11
213.8	367.1	221.32	362.36	228.08	361.46	230.72	362.15	234.51	367.15
243.11	367.53	243.13	367.53	255.89	368.1	273.39	369.09	289.93	371.07
313.65	371.93	314.49	371.98	314.7	372	316.49	372.27	319.14	372.61
322.78	373.12	328.35	373.78	330.34	374.01	330.63	374.04	333.66	374.3
334.1	374.33	334.72	374.39	338.27	374.58	342.52	374.8	344.74	375.07
346.7	375.32	347.32	375.37	350.65	375.82	350.83	375.84	351.12	375.87
351.94	376	361.89	378	362.32	378.12	369.2	380	375.4	382
381.54	384	387.14	386						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.8	.04	234.51	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.8	234.51	93.04	95.36	97.65	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	25.8	385	F
161.5	202.4	385	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5323

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.88	33.33	380.11	40.06	380	44.89	379.5	59	378
67.02	377.3	71.41	376.93	82.12	376	85.17	375.72	86.89	375.57
104.57	374	104.96	373.94	105.28	373.89	109.01	373.33	110.74	373.08
113.95	372.58	116.4	372.26	118.47	372	119.44	371.89	121.49	371.67
125.25	371.29	126.03	371.19	132.92	370	135.4	369.51	137.55	369.08
143.39	368.87	152.17	368.34	189.23	365.45	207.94	365.88	213.15	366
215.76	361.32	219.54	361.54	222.99	361.95	225.61	363.08	227.85	363.55
233.11	366.26	238	366.82	242.41	367.33	259.77	368.53	278.63	371.43
280.36	372	318.89	376	320.12	376.01	321.57	376.05	349.64	377.86
349.73	377.86	349.8	377.87	351.93	378	359.87	379.62	362.53	380
367.1	381.08	369.42	381.61	370.97	382	374.97	382.95	379.47	384
383.38	384.6	383.92	384.68						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.15	.04	233.11	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.15	233.11	116.69	114.31	111.9	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	28.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5209

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.03	.15	378.03	1.95	378	2.36	377.96	6.29	377.85

16.45	377.5	32.34	376.94	33.33	376.83	33.48	376.82	33.68	376.79
33.96	376.77	34.79	376.69	35.57	376.61	36.06	376.58	36.71	376.52
37.31	376.46	37.67	376.43	38.36	376.39	38.61	376.37	39.48	376.31
42.48	376.17	42.92	376.13	45.71	376	45.73	376	49.13	375.52
50	375.39	51.69	375.13	54.05	374.76	55.37	374.56	56.81	374.32
58.6	374	58.66	374	59.06	373.96	84.53	372.91	98.55	372.35
98.82	372.33	99.63	372.28	103.93	372.02	104.29	372	104.3	372
106.14	371.66	116.08	370.04	116.42	370	139.5	368.78	180.51	365.75
201.11	365.1	209.66	364.83	212.88	361.1	216.14	361.11	219.68	361.44
225.21	365.18	231.24	365.5	231.26	365.5	242.79	366.12	270.5	369.12
274.64	369.12	323.97	372.18	340.57	374.96	340.58	375.25	340.59	375.28
344.72	375.7	345.37	375.76	347.71	376	348.59	376.15		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.66	.04	225.21	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.66	225.21	111.42	101.59	91.47	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
298.8	301.6	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	22.5	380	270.4	298.8	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5107

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.01	.24	376	7.07	375.83	9.07	375.73	10.81	375.67
14.62	375.53	15.38	375.51	17.77	375.4	18.91	375.37	34.75	374.53
41.77	374.45	50.79	374.46	55.85	374.46	57.09	374.44	66.02	374.11
71.3	374	75.88	373.97	100.91	373.67	129.38	373.15	147.16	372.84
170.03	372.61	172.25	372.56	172.92	372.55	178.44	372.44	185.81	372.3
200.51	372.07	201.43	371.98	201.7	371.98	202.67	371.92	215.72	371.52
224.6	371.21	235.57	370.77	237.04	370.74	250.15	370.35	252.81	370.32
253.08	370.31	263.87	370.17	266.55	370.18	267.52	370.19	268.58	370.13
278.39	370.23	284.41	370.28	291.18	370.38	294.8	370.34	311.68	370.28
315.54	370.35	315.75	370.35	322.33	370.22	323.94	370.21	332.11	370.09
355.05	371.1	364.88	371.1	382.36	369.28	393.14	367.95	393.15	367.95
397.41	367.43	406.55	360.36	409.03	359.92	412.88	360.59	414.63	362.95
416.03	363.17	422.1	365.13	424.57	365.29	439.58	366.25	464.4	370.03
475.81	370.03	507.28	370.74	534.67	372.32	549.02	374.66	549.03	374.92
549.05	374.92	551.62	375.01	559.75	376	561.38	376.32		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	397.41	.04	422.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.41	422.1	67.29	67.07	66.86	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
295.8	317.3	380	F
445.9	465.3	380	F
474.6	515.9	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
317.3	364.3	380	465.3	474.6	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5040

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78

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   60.84  374.76   65.24  374.68    66.8  374.67   69.29  374.63   82.36  374.74
   84.96  374.72    94.2  374.58   98.84  374.02   99.09     374  100.29  373.97
  104.65  373.88  105.56  373.85  106.59  373.78  109.92  373.71  111.01   373.7
  130.98   373.7  135.97  373.62  165.62  372.83  166.72  372.81  174.13  372.86
  190.11     373  193.32     373  195.48  372.98  206.16  372.44  206.59  372.42
  208.47   372.4  218.24   372.4  219.79  372.28  225.13     372  226.38  371.95
  226.58  371.93  245.52  371.43  256.75  371.11  261.14  370.99  264.15   370.9
  269.51  370.76  283.05  370.32  296.66  370.06  300.29     370   307.5  369.97
  310.36  369.98  336.01  370.03  366.23  369.58  397.63  368.96  412.55   368.2
  412.96  367.93   415.6  366.11  424.49  359.97  427.96  359.23  429.97  359.61
   432.2  361.31  434.59   361.8  443.41   365.9  443.42  365.91   448.7  368.36
  463.33  369.65  490.22  370.98  518.26  372.76  527.06  373.76  535.03     374
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         415.6  443.41           104.82   108.2  107.53             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5000

INPUT
Description: Longview Drive
Distance from Upstream XS =      38
Deck/Roadway Width        =      27
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     122     374             231     372           346.8 370.217
   363.6 369.987           384.5  369.89             390 370.049
   400.6 370.192           404.7 370.096           417.9 370.146
   433.4  370.53           456.1 371.384           479.9   372.4
   523.7     374           556.9     376

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     376    3.61  375.88   21.39  374.91   24.35   374.9   39.18  375.08
   42.63  375.04   47.14   374.9   52.43  374.83    54.6  374.82   57.34  374.78
   60.84  374.76   65.24  374.68    66.8  374.67   69.29  374.63   82.36  374.74
   84.96  374.72    94.2  374.58   98.84  374.02   99.09     374  100.29  373.97
  104.65  373.88  105.56  373.85  106.59  373.78  109.92  373.71  111.01   373.7
  130.98   373.7  135.97  373.62  165.62  372.83  166.72  372.81  174.13  372.86
  190.11     373  193.32     373  195.48  372.98  206.16  372.44  206.59  372.42
  208.47   372.4  218.24   372.4  219.79  372.28  225.13     372  226.38  371.95
  226.58  371.93  245.52  371.43  256.75  371.11  261.14  370.99  264.15   370.9
  269.51  370.76  283.05  370.32  296.66  370.06  300.29     370   307.5  369.97
  310.36  369.98  336.01  370.03  366.23  369.58  397.63  368.96  412.55   368.2
  412.96  367.93   415.6  366.11  424.49  359.97  427.96  359.23  429.97  359.61
   432.2  361.31  434.59   361.8  443.41   365.9  443.42  365.91   448.7  368.36
  463.33  369.65  490.22  370.98  518.26  372.76  527.06  373.76  535.03     374
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         415.6  443.41             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

Downstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  375.75             124     374           270.8     372
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   386.7 370.217           403.6 369.987           424.4  369.89
   429.9 370.049           440.5 370.192           444.4 370.096
   457.6 370.146           473.1  370.53           495.7 371.384
   519.5   372.4           561.3     374           594.1     376

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  381.34    1.15  381.36    5.15  381.18    6.14   381.2    7.86  381.16
   10.94  381.18   23.92     381   30.33  380.86   45.55  380.35   51.93  380.07
   65.77   379.6   68.46  379.68   70.71  379.61   75.04  379.33   80.36  379.11
  107.04  378.79  117.65  378.45  125.92     378  132.09  376.99  138.71     376
  142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
  164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
  181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
  210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
   248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
  296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
  405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
  444.02  363.09  449.76  359.84  461.09  359.04  468.33  363.92  475.48  368.75
  476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
  568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
  588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
  633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        442.94  468.33             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442  370.15       F
   476.1  633.02  370.15       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   68.79     .024     .024        0                   .5               1
Upstream   Elevation =  359.44
           Centerline Station =  425
Downstream Elevation =  359.83
           Centerline Station =  450

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   70.81     .024     .024        0                   .5               1
Upstream   Elevation =  359.39
           Centerline Station =  432
Downstream Elevation =  359.74
           Centerline Station =  457

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         70.09    Culv Full Len (ft)
  # Barrels                     1    Culv Vel US (ft/s)          4.29
  Q Barrel (cfs)             70.09    Culv Vel DS (ft/s)          6.89
  E.G. US. (ft)             362.79    Culv Inv El Up (ft)       359.44
  W.S. US. (ft)             362.28    Culv Inv El Dn (ft)       359.83
  E.G. DS (ft)              361.91    Culv Frctn Ls (ft)          0.12
  W.S. DS (ft)              361.62    Culv Exit Loss (ft)         0.44
```

Delta EG (ft)	0.87	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.66	Q Weir (cfs)	
E.G. IC (ft)	362.08	Weir Sta Lft (ft)	
E.G. OC (ft)	362.80	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.37	Weir Max Depth (ft)	
Culv WS Outlet (ft)	361.62	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.75	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	105.18	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.41
Q Barrel (cfs)	105.18	Culv Vel DS (ft/s)	6.93
E.G. US. (ft)	363.88	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	363.55	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	362.79	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	362.51	Culv Exit Loss (ft)	0.47
Delta EG (ft)	1.08	Culv Entr Loss (ft)	0.23
Delta WS (ft)	1.03	Q Weir (cfs)	
E.G. IC (ft)	362.95	Weir Sta Lft (ft)	
E.G. OC (ft)	363.88	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.20	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.51	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.14	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	193.76	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	9.72
Q Barrel (cfs)	193.76	Culv Vel DS (ft/s)	9.72
E.G. US. (ft)	370.88	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	370.82	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	367.50	Culv Frctn Ls (ft)	1.33
W.S. DS (ft)	367.34	Culv Exit Loss (ft)	1.30
Delta EG (ft)	3.38	Culv Entr Loss (ft)	0.73
Delta WS (ft)	3.49	Q Weir (cfs)	182.13
E.G. IC (ft)	365.79	Weir Sta Lft (ft)	303.21
E.G. OC (ft)	370.87	Weir Sta Rgt (ft)	442.92
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	1.00
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	84.29
Culv Crt Depth (ft)	3.16	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	48.79	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.45
Q Barrel (cfs)	48.79	Culv Vel DS (ft/s)	2.45
E.G. US. (ft)	372.19	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.07	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.06	Culv Frctn Ls (ft)	0.08
W.S. DS (ft)	371.94	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.13	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.13	Q Weir (cfs)	1087.10
E.G. IC (ft)	361.51	Weir Sta Lft (ft)	221.44
E.G. OC (ft)	372.19	Weir Sta Rgt (ft)	475.06
Culvert Control	Outlet	Weir Submerg	0.83
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.30
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.35
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	343.40
Culv Crt Depth (ft)	1.37	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	45.89	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.30
Q Barrel (cfs)	45.89	Culv Vel DS (ft/s)	2.30
E.G. US. (ft)	372.56	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.39	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.44	Culv Frctn Ls (ft)	0.07

W.S. DS (ft)	372.27	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.12	Culv Entr Loss (ft)	0.04
Delta WS (ft)	0.12	Q Weir (cfs)	1437.40
E.G. IC (ft)	361.43	Weir Sta Lft (ft)	204.30
E.G. OC (ft)	372.56	Weir Sta Rgt (ft)	483.57
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.64
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.55
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	433.58
Culv Crt Depth (ft)	1.32	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	38.00	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	1.91
Q Barrel (cfs)	38.00	Culv Vel DS (ft/s)	1.91
E.G. US. (ft)	372.79	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.59	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.71	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	372.50	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.08	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.09	Q Weir (cfs)	1720.53
E.G. IC (ft)	361.20	Weir Sta Lft (ft)	199.32
E.G. OC (ft)	372.79	Weir Sta Rgt (ft)	490.47
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.90
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.74
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	505.45
Culv Crt Depth (ft)	1.20	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	71.89	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.39
Q Barrel (cfs)	71.89	Culv Vel DS (ft/s)	6.69
E.G. US. (ft)	362.79	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	362.28	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	361.91	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	361.62	Culv Exit Loss (ft)	0.40
Delta EG (ft)	0.87	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.66	Q Weir (cfs)	
E.G. IC (ft)	362.07	Weir Sta Lft (ft)	
E.G. OC (ft)	362.78	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.33	Weir Max Depth (ft)	
Culv WS Outlet (ft)	361.62	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.78	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	106.34	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.45
Q Barrel (cfs)	106.34	Culv Vel DS (ft/s)	6.81
E.G. US. (ft)	363.88	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	363.55	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	362.79	Culv Frctn Ls (ft)	0.33
W.S. DS (ft)	362.51	Culv Exit Loss (ft)	0.44
Delta EG (ft)	1.08	Culv Entr Loss (ft)	0.23
Delta WS (ft)	1.03	Q Weir (cfs)	
E.G. IC (ft)	362.93	Weir Sta Lft (ft)	
E.G. OC (ft)	363.87	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.18	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.51	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.16	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	193.44	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	9.71
Q Barrel (cfs)	193.44	Culv Vel DS (ft/s)	9.71
E.G. US. (ft)	370.88	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	370.82	Culv Inv El Dn (ft)	359.74

E.G. DS (ft)	367.50	Culv Frctn Ls (ft)	1.36
W.S. DS (ft)	367.34	Culv Exit Loss (ft)	1.30
Delta EG (ft)	3.38	Culv Entr Loss (ft)	0.73
Delta WS (ft)	3.49	Q Weir (cfs)	182.13
E.G. IC (ft)	365.73	Weir Sta Lft (ft)	303.21
E.G. OC (ft)	370.90	Weir Sta Rgt (ft)	442.92
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	1.00
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	84.29
Culv Crt Depth (ft)	3.15	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	48.91	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.45
Q Barrel (cfs)	48.91	Culv Vel DS (ft/s)	2.45
E.G. US. (ft)	372.19	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.07	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.06	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	371.94	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.13	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.13	Q Weir (cfs)	1087.10
E.G. IC (ft)	361.46	Weir Sta Lft (ft)	221.44
E.G. OC (ft)	372.19	Weir Sta Rgt (ft)	475.06
Culvert Control	Outlet	Weir Submerg	0.83
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.30
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.35
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	343.40
Culv Crt Depth (ft)	1.38	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	46.00	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.31
Q Barrel (cfs)	46.00	Culv Vel DS (ft/s)	2.31
E.G. US. (ft)	372.56	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.39	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.44	Culv Frctn Ls (ft)	0.08
W.S. DS (ft)	372.27	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.12	Culv Entr Loss (ft)	0.04
Delta WS (ft)	0.12	Q Weir (cfs)	1437.40
E.G. IC (ft)	361.38	Weir Sta Lft (ft)	204.30
E.G. OC (ft)	372.56	Weir Sta Rgt (ft)	483.57
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.64
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.55
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	433.58
Culv Crt Depth (ft)	1.33	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	38.09	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	1.91
Q Barrel (cfs)	38.09	Culv Vel DS (ft/s)	1.91
E.G. US. (ft)	372.79	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.59	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.71	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	372.50	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.08	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.09	Q Weir (cfs)	1720.53
E.G. IC (ft)	361.15	Weir Sta Lft (ft)	199.32
E.G. OC (ft)	372.79	Weir Sta Rgt (ft)	490.47
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.90
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.74
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	505.45
Culv Crt Depth (ft)	1.20	Min El Weir Flow (ft)	370.12

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4932

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.34	1.15	381.36	5.15	381.18	6.14	381.2	7.86	381.16
10.94	381.18	23.92	381	30.33	380.86	45.55	380.35	51.93	380.07
65.77	379.6	68.46	379.68	70.71	379.61	75.04	379.33	80.36	379.11
107.04	378.79	117.65	378.45	125.92	378	132.09	376.99	138.71	376
142.75	375.74	145.13	375.77	151.41	375.65	152.99	375.6	162.62	375.4
164.08	375.33	165.89	375.33	172.24	375.73	177.38	376	177.63	376.05
181.27	376.17	185.16	376.34	192.75	376.58	200.87	376.58	208.17	376.57
210.94	376.5	239.9	376	245.1	375.7	245.52	375.7	248.29	375.54
248.6	375.54	250.31	375.45	256.27	375.5	262.18	375.3	281.18	374
296.71	372.3	299.71	372	320.36	371.86	345.94	370.82	375.13	370.26
405.43	368.96	424.73	368.62	429.83	363.66	442.94	363.7	444	363.1
444.02	363.09	449.76	359.84	461.09	359.04	468.33	363.92	475.48	368.75
476.07	368.78	476.1	368.79	501.36	370.51	527.01	371.18	549.43	374
568.87	375.7	572.79	376	583.63	376.6	584.84	376.64	587.35	376.78
588.79	376.83	590.9	376.94	610.8	377.12	614.03	377.22	619.02	377.46
633.02	378.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	442.94	.04	468.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
442.94	468.33	86.54	87.15	87.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	442	370.15	F
476.1	633.02	370.15	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4845

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.58	4.55	380.55	6.68	380.49	9.66	380.28	16.63	379.98
26.33	379.81	62.1	378.84	98.92	378	99.32	377.89	136.94	376
143	375.91	149.44	376	152.28	376.1	156.17	376.13	191.4	376.8
203.32	376.79	209.98	376.63	238.93	376.59	244.45	376.21	250.81	376
261.25	374.62	275.77	372	281.64	371.31	290.21	370.67	304.89	369.51
331.41	367.13	348.83	364.14	380.45	364.27	402.65	363.64	402.68	363.64
406.34	363.53	414.27	358.13	417.64	357.81	425.27	358.61	432.32	365.43
433.19	365.53	433.22	365.53	453.71	367.76	474.07	367.76	485.62	368
502.49	370	503.75	370.14	505.06	370.4	505.48	370.53	507.56	370.13
509	370	513.04	370	518.39	370.19	521.7	370.19	524.91	370.37
537.92	371.65	541.22	371.89	542.32	372.1	545.8	372.19	575.74	373.74
577.08	373.86	599.27	377.01	605.31	377.77	608.04	378.01	611.15	378.12
614.15	378.14	616.12	378.1	621.88	378.21	625.35	378.34	639.16	379.09
657.61	380	661.97	380.57	669.23	381.67	678.71	383.47		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	406.34	.04	433.22	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.34	433.22	89.54	100.49	110.66	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336.4	363.2	385	F
550.5	618	385	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
127.8	235.6	385	296.1	336.4	385	454	504.5	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4745

INPUT
Description:

Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.11	21.9	380.04	28.76	379.88	34.3	379.51	43.1	379.86
53.28	379.9	56.58	379.78	62.04	379.32	72.76	379.37	82.93	379.28
86.47	379.41	92.14	379.33	95.69	379.17	109.62	379.08	135.12	378.66
137.45	378.48	167.42	378.8	171.95	378.72	192.21	378	200.65	377.24
235.54	377.01	241.83	376.74	253.23	377.1	255.58	376.97	271.08	376.62
275.97	376.65	279.99	377.08	282.06	377.08	293.56	376.33	300.79	376.13
316.78	375.92	330.78	375.45	339.87	375.04	353.65	374	362.03	373.25
376.22	371.8	398.14	369.91	398.19	368.67	441.73	364.73	471.43	362.82
491.34	362.87	497.92	361.09	497.93	361.09	503.16	359.68	507.05	359.79
508.57	357.67	513.05	357.45	516.27	357.67	524	363.35	528.02	363.37
528.05	363.37	543.42	363.45	576.59	363.78	580.38	364	587.66	364.1
599.83	364.36	607.95	364.42	639.8	366	660.86	367.5	675.48	368.86
685.51	370	701.05	372.18	718.22	373.29	725.55	373.48	731.12	374.02
748.44	374.98	752.53	375.3	765.7	375.87	778.37	376.85	791.24	378
806.37	380	808.13	380.31	815.79	381.16	824.93	382	831.66	382.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	491.34	.04	524	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
491.34	524	111.08	108.67	106.25	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4636

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.34	6.89	380.72	8.14	380.72	21.8	379.64	39.34	378
67.85	376	132.49	373.43	147.33	374	162.25	376	169.4	376.34
178.16	375.89	185.65	375.64	200.34	375.76	233.4	375.68	239.11	375.36
249.5	375.34	251.25	375.42	257.5	375.35	267.44	374.96	277.67	374.75
315.27	374.57	318.08	374.63	344.76	374	355.8	372	365.77	370
409.43	368	426.89	366.86	461.95	364.11	477.5	361.95	477.88	361.7
477.89	361.69	483.5	357.91	493.33	357.61	499.07	357.85	502.3	362.25
508.59	362.41	508.61	362.41	524.4	362.83	556.76	362.64	588.33	363.03
609.48	362.74	620.82	363.21	643.23	363.52	650.91	363.84	673.28	365.16
690.67	365.89	697.4	365.96	767.85	369.67	776.5	370	791.17	370.91
827.59	374	829.12	374.06	835.04	374	840.77	373.45	865.39	370
874.22	368	886.48	367.07	898.7	368	908.05	370	921.08	372
930.79	374	936.24	376	940.95	378	945.37	380	961.95	388
966.25	390	970.84	392	976.29	394	984.5	396		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	477.5	.04	502.3	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
477.5	502.3	90.09	85.72	81.01	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
829.12	930.96	374.06	T

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
12.5	47.6	385	159.7	233.5	385	289.2	333.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4550

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.61	5.72	380	14.44	379.53	24.98	379.26	49.94	378
51.11	377.81	52.48	377.77	57.27	377.13	65.46	377.09	83.13	376.44
115.32	376.53	129.27	376.2	134.89	375.7	161.6	375.1	180.09	374.38
184.24	374	192.05	373.05	194.36	373.3	203.06	373.7	213.23	373.33
227.71	372.43	230.87	372.39	241.61	372.73	250.77	372.75	269.45	372.53
285.09	372.56	296.76	372.27	299.73	372.12	301.56	372.12	324.23	373.13

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  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         487.5  517.99           205.67  206.54  206.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 4400

INPUT
Description: US 40
Distance from Upstream XS =      53
Deck/Roadway Width        =     104
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     5.8     380              83     378             165     376
     237     374             324     372             391 371.588
     429 371.157           463.7 370.927           490.9 370.876
   527.4 371.004           560.1 371.263           596.7  371.72
     644     372             732     374             786     376
     860     378             928     380             999     382

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         487.5  517.99             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

Downstream  Deck/Roadway Coordinates
    num=      11
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      13     378              97     376             158     374
   290.3 372.244             328  371.79           354.7 371.615
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   387.1 371.555           419.8  371.62           453.4 371.896
   491.3 372.287             600     374

Downstream Bridge Cross Section Data
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.39     3.9  379.26    7.14  379.08    8.79  379.03   11.22  378.89
   14.53  378.78   17.41  378.61   25.86  378.28    32.7   378.1   37.64  377.91
   47.11  377.39    52.1  377.51   58.99  377.54   77.62  377.45   88.21  377.23
   92.02  377.21   95.64  377.34  113.55  377.38  122.03     377  137.03  376.62
  138.43  376.63   139.9  376.54  142.13  376.29  145.36     376  158.31  375.76
  187.11  374.72  198.02   374.5  200.77  374.48  208.31  374.54   212.2  374.51
   224.1     374  231.63  372.98   244.2   372.1  267.66  371.03  274.63  370.67
  284.57     370  294.75  364.77  310.72  364.84   317.5  367.36  326.34  364.31
  347.85  362.45  366.55  361.42  369.78  361.24  371.99  357.69   373.8  356.67
  379.51  351.69   381.6     352  394.25  354.75  396.69  357.39  399.49  360.42
  420.27  362.04  443.45   362.5  460.82  363.19  487.61     366  491.52  366.47
  492.41  366.52  501.31  366.41  508.11  366.82  510.99  366.89  511.84  366.96
  518.45  367.09  530.63  367.88  531.82     368  543.84     370  556.98     372
  567.14  372.99  573.69  373.54  580.03     374  596.09  374.78  599.01  375.01
   603.8  375.23  612.54     376  624.11  376.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  369.78     .04  399.49    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        369.78  399.49             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     369   361.7       F
     400  624.11   361.7       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                32   136.5     .013     .013        0                  .3                1
Upstream   Elevation =  357.575
           Centerline Station =  502.25
Downstream Elevation =  357.07
           Centerline Station =  382

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        141.98    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          8.30
  Q Barrel (cfs)            141.98    Culv Vel DS (ft/s)          7.53
  E.G. US. (ft)             360.98    Culv Inv El Up (ft)       357.58
  W.S. US. (ft)             360.89    Culv Inv El Dn (ft)       357.07
  E.G. DS (ft)              359.44    Culv Frctn Ls (ft)          0.12
  W.S. DS (ft)              359.43    Culv Exit Loss (ft)         0.87
  Delta EG (ft)               1.54    Culv Entr Loss (ft)         0.20
  Delta WS (ft)               1.47    Q Weir (cfs)
  E.G. IC (ft)              360.98    Weir Sta Lft (ft)
  E.G. OC (ft)              361.10    Weir Sta Rgt (ft)
  Culvert Control            Inlet    Weir Submerg
  Culv WS Inlet (ft)        359.71    Weir Max Depth (ft)
  Culv WS Outlet (ft)       359.43    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.07    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.14    Min El Weir Flow (ft)     371.57


Note:    During supercritical analysis, the culvert direct step method went to normal depth.  The
program then assumed
         normal depth at the outlet.
Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.
```

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	211.52	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.48
Q Barrel (cfs)	211.52	Culv Vel DS (ft/s)	8.35
E.G. US. (ft)	362.06	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	361.97	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	360.26	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	360.23	Culv Exit Loss (ft)	1.06
Delta EG (ft)	1.80	Culv Entr Loss (ft)	0.30
Delta WS (ft)	1.73	Q Weir (cfs)	
E.G. IC (ft)	362.06	Weir Sta Lft (ft)	
E.G. OC (ft)	362.18	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	360.37	Weir Max Depth (ft)	
Culv WS Outlet (ft)	360.23	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.74	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.79	Min El Weir Flow (ft)	371.57

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	569.32	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	14.23
Q Barrel (cfs)	569.32	Culv Vel DS (ft/s)	14.23
E.G. US. (ft)	367.36	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	367.31	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	361.96	Culv Frctn Ls (ft)	1.19
W.S. DS (ft)	361.85	Culv Exit Loss (ft)	3.26
Delta EG (ft)	5.39	Culv Entr Loss (ft)	0.94
Delta WS (ft)	5.46	Q Weir (cfs)	
E.G. IC (ft)	368.90	Weir Sta Lft (ft)	
E.G. OC (ft)	367.36	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	735.90	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.40
Q Barrel (cfs)	735.90	Culv Vel DS (ft/s)	18.40
E.G. US. (ft)	371.98	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	371.98	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	363.45	Culv Frctn Ls (ft)	1.99
W.S. DS (ft)	363.15	Culv Exit Loss (ft)	4.96
Delta EG (ft)	8.53	Culv Entr Loss (ft)	1.58
Delta WS (ft)	8.83	Q Weir (cfs)	448.89
E.G. IC (ft)	372.06	Weir Sta Lft (ft)	344.41
E.G. OC (ft)	371.98	Weir Sta Rgt (ft)	644.19
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.13
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.64
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	192.88
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	726.49	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.16
Q Barrel (cfs)	726.49	Culv Vel DS (ft/s)	18.16
E.G. US. (ft)	372.33	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.32	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	364.11	Culv Frctn Ls (ft)	1.94
W.S. DS (ft)	363.72	Culv Exit Loss (ft)	4.74
Delta EG (ft)	8.22	Culv Entr Loss (ft)	1.54
Delta WS (ft)	8.60	Q Weir (cfs)	802.79
E.G. IC (ft)	372.37	Weir Sta Lft (ft)	338.28
E.G. OC (ft)	372.33	Weir Sta Rgt (ft)	659.24
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.47
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.93
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	299.03
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	710.98	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	17.77
Q Barrel (cfs)	710.98	Culv Vel DS (ft/s)	17.77
E.G. US. (ft)	372.57	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.56	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	364.73	Culv Frctn Ls (ft)	1.86
W.S. DS (ft)	364.33	Culv Exit Loss (ft)	4.50
Delta EG (ft)	7.84	Culv Entr Loss (ft)	1.47
Delta WS (ft)	8.23	Q Weir (cfs)	1085.63
E.G. IC (ft)	372.58	Weir Sta Lft (ft)	334.23
E.G. OC (ft)	372.57	Weir Sta Rgt (ft)	669.19
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.70
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	1.11
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	373.18
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4344

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91

47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01
603.8	375.23	612.54	376	624.11	376.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	369.78	.04	399.49	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
369.78	399.49	54.24	54.2	54.21	.3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	369	361.7	F
400	624.11	361.7	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4289

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.16	4.18	376.93	6.02	376.92	13.94	376.67	20.26	376.2
24.9	376.18	33.24	377.06	38.69	377.12	40.04	377.22	48.07	377.42
60.83	377.6	66.6	377.54	72.7	377.21	85.85	376	95.14	375.32
109.02	374.79	111.75	374.73	114.36	374.6	120.7	374.51	138.66	374
141.06	373.73	149.42	372.56	154.25	372	161.5	371.27	163.79	371.11
170.81	370	173.81	369.84	195.17	369.42	204.6	369.46	213.04	369.62
222.3	370	223.43	370.15	226.4	370.41	227.06	370.31	236.85	369.39
247.27	369.56	249.28	369.5	253.56	369.2	259.27	368.95	271.49	368
281.02	366	283.53	365.58	284.63	365.72	287.61	365.54	294.16	364
296.04	363.42	300.15	363.15	323.16	361.6	346.64	361.49	362.78	361.62
366.58	358.56	372.42	353.86	381.79	352.78	389.78	353.42	392.45	357.73
395.52	357.99	397.76	358.89	397.77	358.9	401.82	360.54	427.65	361.5
461.12	362.68	474.19	364	499.06	364.89	510.36	365.54	512.25	365.53
519.79	366	531.35	367.23	537.87	368	549.98	370	574.53	371.66
580.97	371.69	592.69	371.17	604.52	371.32				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	362.78	.04	401.82	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
362.78	401.82	104.83	104.42	103.52	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4185

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.48	9.2	369.89	11.88	369.82	17.34	369.84	34.57	369.3
53.84	368.42	59.13	368.23	62.34	368.17	68.09	368.17	70.92	368.38
76.7	368.52	81.21	368.71	88.53	369.21	100.23	369.08	113.03	368.39
118.84	368.28	119.85	368.31	124.69	368.28	130.99	368.32	143.69	368.07
174.23	367.24	184.05	366.87	189.65	366.83	193.83	366.87	199.74	366.51
200.31	366.52	202.71	366.37	206.47	366	222.83	365.23	229.16	365.1
237.63	364.59	245.34	364	270.04	362.83	279.56	362.32	284.22	362
317.36	360.81	352.39	360.17	380.43	360.08	403.96	360.43	405.79	359.32
407.94	358.02	410.35	357.61	417	355.97	420.8	354.77	430.79	360.87
435.8	361.06	435.83	361.06	448.07	361.52	480.45	361.7	518.27	363.36
531.33	364	532.88	364.19	543.89	364.64	551.51	365.01	553.39	365.05

```
  557.04   365.2  562.67  365.52  565.16  365.53  571.76  365.76  589.17  365.65
   601.4  365.75  611.19   365.7  613.71  365.74  619.92     366  625.24  366.72
   632.9  367.41  636.14  367.76  639.39     368  644.27  368.63  644.65  368.64
  646.39   368.9  647.36  368.89   650.3  369.29

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  403.96     .04  430.79    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        403.96  430.79           151.73  151.97  152.24             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4033

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  371.31    6.28  371.09    10.1  370.82   11.41  370.78   13.41  370.65
   16.07  370.59   24.34  370.14   26.91  370.09   30.53  370.19   38.94   370.2
   41.71  370.32   43.77  370.21   45.82     370   47.56  369.91   61.47  368.93
   64.73  368.91   74.46  369.43   84.71   369.4   87.19  369.59   93.43  369.89
   94.09  369.89    96.1     370   98.42   370.2  102.15  370.38  104.17   370.4
  106.65  370.37   110.1   370.2  112.15     370  115.71  369.82  128.08  369.81
  137.68   369.7  151.03  369.46  154.18  369.16  164.93  368.77  175.08  368.49
  185.11   368.1  190.59  367.77   192.4  367.74   209.8  366.53  222.55  365.72
  229.81  365.17  231.09  365.15  237.47  365.25  254.65  364.85  274.84     362
  281.46  361.45  311.04  360.26  324.61  359.69  324.63  359.69  327.57  359.56
  332.63  355.53   339.8  355.05  344.88  355.72  350.28  359.03  354.96  359.02
  354.99  359.02  368.82  358.97  388.87  359.13  402.39  358.88  463.03     360
  463.46  360.12   468.3  360.75  482.77     362  495.13  362.44  501.53  362.51
  509.75   362.5  519.32  362.16  523.42  362.13  524.98     362  532.66  361.82
  536.09  361.79  548.11  361.82  551.96     362   557.9  362.44  583.12   363.9
  596.37  364.95

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  327.57     .04  350.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        327.57  350.28           105.3  103.27  101.24             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3930

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  373.25    5.62  373.04   18.75  372.65   20.05  372.56   51.89  373.28
   67.22  372.62   75.52  372.21   81.21     372   82.89   371.8   83.35  371.81
  100.65  370.82  104.09  370.51  109.16     370   119.9  369.24   121.3  369.19
  125.83  369.28  143.55  369.25   145.3  369.37  145.92  369.31  149.12  369.58
  149.56  369.54  151.28  369.67  155.23  369.78  159.52  369.77  162.64  369.66
  165.16   369.5  170.48     369  173.88  368.53  174.87  368.43  177.64     368
  179.57  367.59  182.98  366.78  185.85     366  189.84  365.01  193.24     364
  205.26  362.99  232.35  361.15  264.16  359.45  274.41  358.31  274.42  358.31
  280.37  357.65  286.95  354.74  289.44  354.49  294.11  355.34  299.09  358.68
  305.18  358.74  305.19  358.74  321.51  358.88  353.18  358.92  436.87     360
  449.41     362  451.92  362.47  457.66  363.46  461.04     364  466.97  364.48
  469.66  364.48   474.3  364.61  476.21  364.58  476.86  364.61  477.78  364.59
  488.71  364.64  490.27  364.68  512.72  365.88  514.21     366  532.64     368
  542.86     370  544.26  370.23   546.1  370.43  549.88  370.48  552.59  370.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  280.37     .04  299.09    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.37  299.09           112.01  113.72  114.59             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
```

```
     176   200.4     375       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   163.1     176     375

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3816

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  374.86    10.9     374   35.12     372   42.05  371.48   47.58  371.12
   58.88  370.34   59.53  370.34   78.46   370.9   81.56  371.04   85.42  370.91
    91.5   370.8   96.65  370.74   108.4  370.09  110.41     370  112.14   369.8
  112.78  369.76   116.9  369.37  121.06     369  125.02   368.8  128.66  368.54
  132.43   368.4  135.47  368.11  138.27  368.07  140.86  368.14   143.7  368.03
  150.81   367.6   154.5  367.24  157.37  366.85  163.04     366  174.59  362.82
  217.65  358.92   236.4  357.65  236.42  357.65  237.46  357.58  243.76  354.29
   251.5   353.5  252.56  353.49   255.1  356.69   266.5  357.28  266.52  357.28
  271.38  357.54  301.23  358.52  327.76  358.95  350.57     360  371.84  361.19
  386.87     362  399.91  363.11  404.12  363.54  410.91  364.18  416.03  364.61
  421.73     365  428.74  365.37  429.75  365.39  438.84  365.39  440.51  365.38
  443.31   365.3  444.17  365.29  449.76  365.05  455.01  364.86  460.03   365.2
  465.28  365.49   469.1  365.73  472.03  365.86  472.64  365.86  474.82  366.04
  496.26   366.8  498.97  366.85  515.31  366.69  518.73   366.8  522.16  366.85
  525.33  367.02  526.96  367.04   534.8  367.32  549.03     368  554.32  368.52

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  237.46     .04   255.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        237.46   255.1            128.5  127.87  127.21             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   173.5   186.9     375       F
   373.3   445.4     375       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   142.2   173.5     375

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3688

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.19   12.07  367.61   20.74  367.88   33.44   368.3   35.81  368.34
   36.91  368.35   38.51   368.3    41.9  368.05   42.34     368   46.49  367.62
   57.82  366.07   58.06     366   58.98  365.89   59.73  365.86   61.35  365.74
   62.76  365.59   63.36  365.54   64.65  365.39   65.31  365.33   65.53   365.3
   68.14  364.99   69.06  364.94   77.78  365.17   78.29  365.12   78.87  365.13
   79.51  365.14   81.34  364.92   81.98  364.92   82.64  364.91   84.22  364.72
   85.27  364.68   87.32  364.44   87.96   364.4   91.82     364   92.71  363.94
   94.56   363.8  107.05  361.62  112.03  361.62  156.44  357.41  156.46  357.41
  166.74  356.43  170.56  353.16  171.46  352.86  179.43  353.24  182.46  356.86
  186.46     357  186.47  357.01  203.22  357.63   227.7   358.5  256.67     360
  261.88  360.34  264.57  360.54  271.14  360.98  283.16  361.89  284.48     362
  293.32  363.31  295.65   363.6  300.63  364.22  302.93  364.48  304.51  364.65
  310.25  365.25  317.77  366.05  320.57  366.39   321.8  366.52  324.49  366.86
  328.15  367.23  329.94  367.46  331.84  367.65  332.96  367.78  334.64     368
  343.14  368.38  353.94  368.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  166.74     .04  182.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        166.74  182.46           137.67  137.99   138.3             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
```

```
    72.5   108.3     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   309.8   338.6     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3550

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.59   21.83     366   22.15  365.93   22.36  365.91   22.65  365.88
   24.81  365.75   34.15  365.49   36.08  365.41   36.47  365.41   56.33  364.39
   62.74  364.35   64.54  364.35   78.24  364.86   78.82  364.87   80.11   364.9
   92.13  365.45   95.39  365.49   97.19  365.52   98.79  365.54  111.29  364.66
  113.06  364.51  113.63  364.52  115.75  364.34  116.17  364.34  118.14  364.18
  118.26  364.18  120.55     364  125.47  363.66  128.06  363.49  130.87  363.32
  133.62  363.17  137.86  362.93  141.25  362.78  142.84  362.67  144.42  362.54
  144.88  362.52  147.11   362.3   147.6  362.27  150.07     362  168.07  360.18
  202.08  358.28  222.67  356.22  222.69  356.22  229.29  355.55  231.57  353.11
  237.67  352.85  241.52  353.14  245.66  357.02   252.8  357.45  270.01   358.5
  299.86  361.08  320.94  363.87  322.12  363.98  326.43  364.47  335.31     366
  338.09  366.52  340.43  367.05  344.77     368  352.58  368.68  357.63  369.11
  363.94  369.54  366.26  369.71  370.89     370  376.06  370.55  378.66  370.84
  385.91   371.5  387.76   371.7  391.56     372  393.08  372.13  393.26  372.12
  394.51   372.2  396.42  372.27  400.73  372.39  401.46  372.38

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  222.67     .04  245.66    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        222.67  245.66           121.58  121.96  122.09             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     132   172.9     370       F
   358.4  401.46     375       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3428

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.25     .08  366.25     .21  366.24    2.49  366.31    5.55  366.33
     6.5  366.31    6.69   366.3    6.85  366.29    6.95  366.28    7.02  366.27
    7.07  366.26    7.09  366.26    7.37  366.14     7.5  366.11    7.73  366.11
    7.81     366   17.71  365.88   17.76  365.88   35.41  362.54   54.26  359.25
   71.12  356.77   71.14  356.77   72.75  356.53   82.67  355.38    85.4  352.15
   86.22  352.06   88.74  351.86   91.45  352.09   93.89  352.39   98.94  357.17
  101.38  357.43  121.79  359.59   156.9  362.39  164.18  363.89  164.43  364.14
  168.22  363.93  172.23  363.84   172.9  363.86     176  363.96   177.1     364
  178.13   364.1  190.23  365.12  198.83  365.85  199.59  365.91  200.67     366
   208.9  367.19  214.54     368  221.01  368.41  227.99  368.94  228.59  368.95
  229.18  368.96  244.28  369.43

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   82.67     .04   98.94    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         82.67   98.94           131.85  132.32  132.95             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    31.2    57.1     370       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     7.4    31.2     370   207.8   224.4     370

CROSS SECTION
```

RIVER: Plumtree
REACH: Plumtree RS: 3296

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.04	7.44	368.25	8.57	368.2	13.73	368	15.86	367.86
16.24	367.82	20.57	367.48	24.23	367.01	30.3	366.41	32.66	366
34.91	365.82	36.33	365.68	37.74	365.56	39.57	365.37	40.92	365.29
43.15	365.29	43.9	365.26	57.19	365.22	65.98	364.57	67.12	364.52
74.19	364	78.97	363.56	80.16	363.45	86.96	362.83	90.65	362.47
94.56	362.11	95.89	362	97.9	362.2	98.84	362.19	107.93	362.58
109.64	362.69	113.85	362.82	117.37	362.83	135.78	361.77	153.23	361.58
168.24	361.26	168.8	361.63	178.91	362.18	192.98	358.61	195.06	357.92
201.72	355.69	204.53	352.08	205.68	351.83	208.07	351.91	210.45	351.72
213.06	352.1	214.14	351.94	214.68	352.11	218.9	356.65	223.16	358.34
225.56	358.53	225.57	358.53	241.1	359.76	252.96	359.64	253.63	359.34
274.2	360.14	298.22	360.84	338.52	362	345.28	362.49	349.83	362.8
358.24	363.42	360.55	363.61	366.27	364	376.16	364.76	381.02	365.1
384.43	365.36	386.5	365.49	387.73	365.58	388.62	365.62	390.74	365.78
391.33	365.8	393.98	366	397.53	366.12	401.29	366.23		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	195.06	.04	223.16	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
195.06	223.16	117.57	116.94	115.99	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3179

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.99	2.92	366.32	4.49	366	7.03	365.74	10.65	365.61
11.25	365.55	16.84	365.58	20.65	365.55	33.69	365.26	37.05	365.27
37.83	365.19	39.74	365.22	40.57	365.13	41.71	365.14	42.29	365.07
42.83	365.07	44.3	364.91	44.81	364.89	52.54	364.19	59.05	363.73
59.96	363.72	64.43	364	81.81	364.24	90.25	364.43	92.01	364.4
99.97	364	104.37	363.32	108.33	362.78	110.63	362.49	114.3	362.12
115.81	362	120.17	361.84	122.87	361.79	123.54	361.75	128	361.77
128.34	361.74	133.43	361.84	133.74	361.82	143.14	361.87	149.1	361.65
164.07	359.25	179.76	356.13	194.67	355.75	202.4	355.27	206.08	354.62
206.1	354.62	214.08	353.21	222.22	351.72	224.4	350.87	225.57	350.64
226.07	350.5	226.87	350.39	227.28	351.49	228.52	356.98	237.22	357.51
237.24	357.52	245.5	358.02	261.13	358.56	278.43	358.68	287.56	359.19
290.34	359.37	293.7	359.56	297.36	359.67	300.98	359.87	307.03	360
313.84	360.92	321.07	362	329.79	363.01	342	364.37	355.84	366
363.77	366.33	385.35	367.64	391.11	368.04	397.46	368.33		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	179.76	.04	228.52	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
179.76	228.52	101.1	102.24	103.14	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	63.2	370	F
80.2	98	370	F
277.5	332.8	370	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
98	149	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3077

INPUT

Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.18	1.12	364.15	2.53	364.12	3.97	364.1	8.56	364.2
8.98	364.2	10.31	364.25	11.19	364.24	13.14	364.15	13.5	364.12
14.57	364	18.43	363.88	21.38	363.78	24.61	363.74	33.92	363.48
39.77	363.33	48.31	362.93	50.98	362.82	61.21	362.37	63.02	362.31
70.2	362	74.59	361.6	77.1	361.43	82.58	360.97	83.28	360.94
95.42	360.41	99.21	360.31	103.01	360.23	103.64	360.21	104.52	360.13
105.54	360	107.69	359.58	114.03	358	134.95	356.4	140.36	356
163.01	355.01	179.63	355.11	193.39	354.95	204.81	355.12	210.64	354.59
210.65	354.59	217	354.02	219.69	351.67	221.67	350.95	222.49	350.87
223.8	350.87	226.26	350.75	228.21	350.72	229.11	350.89	230.73	354.07
234.33	355.41	241.4	355.41	250.01	355.42	265.82	356.22	283.13	356.64
290.94	357.97	293.37	357.99	293.48	358	295.67	358.42	300.65	359.3
303.5	359.83	304.53	360	320.68	361.37	322.55	361.51	328.44	362
330.19	362.24	341.42	364	344.14	364.6	349.88	366	354.73	367.09

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	204.81	.04	234.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204.81	234.33	99.64	98.98	98.39	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2978

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	362.91	26.14	362.3	28.29	362.14	29.8	362.2	30.23	362.16
30.97	362	35.23	361.59	35.47	361.59	37.04	361.43	37.26	361.43
38.5	361.3	38.73	361.31	45.76	360.54	80.82	360.96	102.15	360.38
114.55	360.01	118.88	359.77	161.71	358.87	229.91	358	230.71	357.16
236.45	357.02	243.79	356.29	243.81	356.29	245.02	356.16	250.07	353.33
252.35	352.96	254.47	350.89	255.74	350.56	257.29	350.63	259.41	350.68
261.6	350.53	263.18	350.69	263.71	350.84	265.48	354.05	274.04	355.2
274.05	355.2	275.87	355.44	297.22	357.18	316.25	361.84	320.6	362.22
347.97	363.14	347.98	363.82	352.13	364	360.46	364.7	368.43	365.33
374.4	365.77	378.19	366	379.71	366.15	380.66	366.19	383.79	366.08
384.49	366.11	386.36	366	389.31	365.95	390.69	366	391.27	366.26
391.59	366.47	398.39	367.21	402.86	368	410.75	370	415.21	370.52
417.39	370.39	425.64	370.89	432.78	372	437.01	373.28	442.02	374.48
446.02	375.38	448.25	375.83	449.28	376	451.72	376.13	455.64	376.24
456.7	376.24	472.15	376.84	479.93	377.06	491.12	376.37		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	245.02	.04	274.04	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.02	274.04	61.85	60.74	60.21	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	141.71	359.42	F
333.74	436.4	359.42	F
436.4	487.3	370	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
23.3	86.1	370	160.1	223.6	370	343	389	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2917

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78

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      68  365.82    71.7  365.74   87.56  365.03  104.39     364  110.05  363.87
  115.72     364  121.31  364.39  126.33  364.38  131.94  364.63  136.94  363.92
  168.89     362   189.9  361.76   192.5     362  193.52  362.01  197.76   361.7
  204.56  361.38  249.88  360.38  263.45  359.81  270.42  359.65  306.63   359.2
  346.56  358.69  357.45  358.68  370.03  358.66  382.52  358.63  395.46  358.28
  408.81  358.21  431.48  357.13  440.02  355.31  440.05  355.31  441.62  354.97
   449.4  353.04  452.07  350.76  453.48  350.54  456.39  350.36  460.31  350.51
  460.82  350.59  463.55  354.74  471.92  355.74  471.94  355.74  475.59  356.18
  490.04  357.59  503.18  359.84  518.18  361.77  535.05  361.94   560.7  363.42
  591.03  363.84  596.29     364  615.98  366.75  623.66  366.17  626.79  366.33
  628.12  366.32  630.23  366.52  637.46     368  644.61     370  649.83  370.84
  653.46  371.06  662.64  371.32  668.42     372  676.66  372.58  679.51  372.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  440.02     .04  471.92    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        440.02  471.92            89.63   90.26   89.98             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 2900

INPUT
Description: Frederick Road
Distance from Upstream XS =      32
Deck/Roadway Width        =      33
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   368.5              23     368              86     366
     146     364             200     362             259     360
   337.5 359.415           380.1 359.626           407.4 359.923
   427.3 360.169           456.8 360.827           563.7 363.651
     590     364             641     366          679.51     367

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.13    2.63  368.04    6.35  367.71    9.99  367.48    11.7  367.47
   35.48  366.41    37.6   366.2   47.35     366    53.1  365.63   55.49  365.67
   59.74  365.47   61.17  365.78   62.32   365.9   63.72  365.91   67.25  365.78
      68  365.82    71.7  365.74   87.56  365.03  104.39     364  110.05  363.87
  115.72     364  121.31  364.39  126.33  364.38  131.94  364.63  136.94  363.92
  168.89     362   189.9  361.76   192.5     362  193.52  362.01  197.76   361.7
  204.56  361.38  249.88  360.38  263.45  359.81  270.42  359.65  306.63   359.2
  346.56  358.69  357.45  358.68  370.03  358.66  382.52  358.63  395.46  358.28
  408.81  358.21  431.48  357.13  440.02  355.31  440.05  355.31  441.62  354.97
   449.4  353.04  452.07  350.76  453.48  350.54  456.39  350.36  460.31  350.51
  460.82  350.59  463.55  354.74  471.92  355.74  471.94  355.74  475.59  356.18
  490.04  357.59  503.18  359.84  518.18  361.77  535.05  361.94   560.7  363.42
  591.03  363.84  596.29     364  615.98  366.75  623.66  366.17  626.79  366.33
  628.12  366.32  630.23  366.52  637.46     368  644.61     370  649.83  370.84
  653.46  371.06  662.64  371.32  668.42     372  676.66  372.58  679.51  372.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  440.02     .04  471.92    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        440.02  471.92             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

Downstream  Deck/Roadway Coordinates
    num=      13
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0     368              60     366             120     364
     174     362             234     360           312.1 359.415
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   354.5 359.626           382.1 359.923           401.6 360.169
   431.7 360.827           538.1 363.651             556     364
     615     366

Downstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   369.6    2.79  369.53    7.15  369.53   11.31  369.26   13.16  369.19
   29.03  369.08   30.88     369    36.7  368.66   39.93  368.57   49.72  368.38
   60.81     368    70.9  367.78   72.58  367.64    82.8  367.42   83.97  367.32
   85.38  367.24   87.77  367.18  103.95  366.38  107.73  366.28   112.2     366
   120.8  365.91  127.85  365.89  128.36  365.86  135.62  365.86  136.08  365.83
  142.61  365.76  143.72  365.66  148.33  365.55  150.36  365.39  156.37  365.12
  167.42  364.81  172.69  364.56  182.09  364.16  185.28     364  191.33   363.8
  196.54  363.59  198.83  363.62   204.7  363.42  205.45  363.36   212.4  363.01
  219.55  362.54  226.48     362  235.55  361.62  255.36     360  265.66  359.25
  278.67  358.18  280.71     358  313.84  356.42  337.03  355.63  363.87     355
  377.78   354.9  391.73  354.54   400.8  353.95  402.55  353.74  411.94  352.62
  421.34  350.08  422.54     352  426.28  353.73  432.62   354.3  432.64  354.31
  432.77  354.32  441.96   355.6  462.76  357.08  477.11  359.05  499.49  362.25
  513.76  363.04  527.63     362  539.48  362.57  551.98  362.82  561.27  363.13
  572.05  363.79   574.3     364  591.29  364.92   612.3  365.73  623.32  366.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   400.8     .04  432.64    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         400.8  432.64            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  395.05  356.75       F
   445.1  623.32  356.75       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch    8.25   12.78
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                20    56.5     .024     .024        0                  .5                1
Upstream   Elevation =  350.33
           Centerline Station =  456
Downstream Elevation =  350.16
           Centerline Station =  421

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        194.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          4.19
  Q Barrel (cfs)            194.00    Culv Vel DS (ft/s)          4.06
  E.G. US. (ft)             354.70    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             354.47    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              354.48    Culv Frctn Ls (ft)          0.12
  W.S. DS (ft)              354.23    Culv Exit Loss (ft)         0.00
  Delta EG (ft)               0.21    Culv Entr Loss (ft)         0.14
  Delta WS (ft)               0.24    Q Weir (cfs)
  E.G. IC (ft)              353.57    Weir Sta Lft (ft)
  E.G. OC (ft)              354.70    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        354.29    Weir Max Depth (ft)
  Culv WS Outlet (ft)       354.23    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         3.11    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.27    Min El Weir Flow (ft)     359.43


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        295.00    Culv Full Len (ft)
```

# Barrels	1	Culv Vel US (ft/s)	5.42
Q Barrel (cfs)	295.00	Culv Vel DS (ft/s)	5.35
E.G. US. (ft)	355.67	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	355.42	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	355.15	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	354.88	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.52	Culv Entr Loss (ft)	0.23
Delta WS (ft)	0.54	Q Weir (cfs)	
E.G. IC (ft)	354.58	Weir Sta Lft (ft)	
E.G. OC (ft)	355.67	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	354.98	Weir Max Depth (ft)	
Culv WS Outlet (ft)	354.88	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.06	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.84	Min El Weir Flow (ft)	359.43

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	741.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.42
Q Barrel (cfs)	741.00	Culv Vel DS (ft/s)	11.05
E.G. US. (ft)	359.18	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	359.01	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	356.68	Culv Frctn Ls (ft)	0.87
W.S. DS (ft)	356.04	Culv Exit Loss (ft)	1.26
Delta EG (ft)	2.50	Culv Entr Loss (ft)	0.84
Delta WS (ft)	2.97	Q Weir (cfs)	
E.G. IC (ft)	358.48	Weir Sta Lft (ft)	
E.G. OC (ft)	359.18	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	356.65	Weir Max Depth (ft)	
Culv WS Outlet (ft)	356.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	4.94	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	899.47	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.13
Q Barrel (cfs)	899.47	Culv Vel DS (ft/s)	11.59
E.G. US. (ft)	360.76	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.58	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	357.76	Culv Frctn Ls (ft)	0.69
W.S. DS (ft)	357.25	Culv Exit Loss (ft)	1.58
Delta EG (ft)	3.01	Culv Entr Loss (ft)	0.96
Delta WS (ft)	3.33	Q Weir (cfs)	495.53
E.G. IC (ft)	360.71	Weir Sta Lft (ft)	236.70
E.G. OC (ft)	360.76	Weir Sta Rgt (ft)	453.61
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	357.87	Weir Max Depth (ft)	1.34
Culv WS Outlet (ft)	357.25	Weir Avg Depth (ft)	0.88
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	191.44
Culv Crt Depth (ft)	5.51	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	913.11	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.07
Q Barrel (cfs)	913.11	Culv Vel DS (ft/s)	11.30
E.G. US. (ft)	361.14	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.91	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.27	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	357.71	Culv Exit Loss (ft)	1.43
Delta EG (ft)	2.88	Culv Entr Loss (ft)	0.95
Delta WS (ft)	3.19	Q Weir (cfs)	851.89
E.G. IC (ft)	361.09	Weir Sta Lft (ft)	224.76
E.G. OC (ft)	361.14	Weir Sta Rgt (ft)	469.43
Culvert Control	Outlet	Weir Submerg	0.00

Culv WS Inlet (ft)	358.28	Weir Max Depth (ft)	1.75
Culv WS Outlet (ft)	357.71	Weir Avg Depth (ft)	1.16
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	284.98
Culv Crt Depth (ft)	5.57	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	911.47	Culv Full Len (ft)	26.43
# Barrels	1	Culv Vel US (ft/s)	10.89
Q Barrel (cfs)	911.47	Culv Vel DS (ft/s)	11.02
E.G. US. (ft)	361.52	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	361.24	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.75	Culv Frctn Ls (ft)	0.25
W.S. DS (ft)	358.17	Culv Exit Loss (ft)	1.31
Delta EG (ft)	2.77	Culv Entr Loss (ft)	0.92
Delta WS (ft)	3.07	Q Weir (cfs)	1245.53
E.G. IC (ft)	361.44	Weir Sta Lft (ft)	214.07
E.G. OC (ft)	361.52	Weir Sta Rgt (ft)	483.14
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.58	Weir Max Depth (ft)	2.11
Culv WS Outlet (ft)	358.17	Weir Avg Depth (ft)	1.40
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	378.03
Culv Crt Depth (ft)	5.57	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2827

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
400.8	432.64	59.3	67.61	75.81	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	395.05	356.75	F
445.1	623.32	356.75	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2759

INPUT
Description:

Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	372.77	2.31	372.75	3.21	372.76	3.79	372.7	5.35	372.51
10.05	372	17.86	370.67	21.54	370	22.94	369.68	29.73	368
38.04	366	41.31	365.14	46.41	364	49.98	363.37	58.32	362
62.31	361.29	70.12	360	83.48	358.75	88.76	358.48	93.5	358.22
94.45	358.15	97.16	358	128.47	356.25	137.97	356	166.97	354.77
188.46	354.27	206.85	354.18	213.44	353.14	217.92	353.75	217.94	353.75
221.54	354.24	229.72	353.68	232.16	349.32	242.11	350.03	244.47	353.83
247.97	353.92	254.64	354.1	273.96	354.9	288.2	354.55	327.4	356
337.32	356.54	361.29	357.92	361.9	358	364.26	358.17	365.41	358.24
367	358.37	372.78	358.74	375.31	358.81	388.46	358.79	394.15	358.8
397.84	358.95	400.41	358.96	402.23	359.06	404.53	359.21	405.49	359.23
408.57	359.48	408.95	359.49	411.45	359.7	411.87	359.72	415.03	359.99
415.31	360	417.03	360.2	418.39	360.3	428.8	360.31	433.64	360.4
438.69	360.56	442.82	360.73	450.11	361.09	466.87	362	474.25	362.98
481.02	364	491.61	366	492.4	366.16	501.24	368		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	229.72	.04	244.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
229.72	244.47	166.79	169.71	170.1	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.5	6.39	370	8.12	369.55	9.88	369.06	13.59	368
15.68	366.43	16.18	366	16.5	365.69	18.44	364	19.42	363
20.51	362	21.74	361.02	22.67	360	27.21	358.55	28.42	358.17
28.89	358	48.8	356	56.94	355.65	62.31	355.06	97.9	354.08
104.04	353.91	106.64	349.71	112.07	349.9	114.29	352	118.86	352.08
128.02	352.48	129.83	352.56	142.4	352.11	158.46	352.06	163.77	353.31
176.98	353.81	195.26	354.09	212.76	355.32	219.91	355.94	220.06	355.97
220.33	356	220.34	356	220.77	356.04	224.36	356.3	227.8	356.43
228.59	356.43	235.01	356.02	235.26	356	235.49	356	244.56	356.04
247.2	356.04	248.45	356.03	254.75	356.02	257.6	356.01	259.1	356
259.88	356.04	262.22	356.13	262.67	356.15	272.42	356.42	274.41	356.5
275.87	356.57	277.84	356.65	283.08	356.9	287.67	357.1	289.83	357.2
291	357.25	295.04	357.45	305.68	358	327.61	359.52	335.25	360
342.18	360.46	349.91	360.96	357.47	361.46	361.02	361.68		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	104.04	.04	114.29	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.04	114.29	102.11	104.17	106.57	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2485

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.38	4.47	368.19	8.54	368.03	9.3	368	11.37	367.71
12.69	367.6	12.97	367.59	21.49	367.83	21.72	367.79	24.75	367.98
24.78	367.97	25.94	368.02	27.18	368.02	28.49	367.97	29.82	367.87
30.25	367.77	31.68	367.58	33.56	367.26	35	366.85	38.23	366
38.64	365.88	39.08	365.73	41.93	364.86	44.58	364	51.26	362.13
51.81	362	52.07	361.95	53.08	361.71	59.58	360.24	60.5	360
66.26	358.56	68.19	358	79.86	356.07	80.2	356	108.17	354.1
116.73	353.3	136.32	353.03	148.67	352.95	152.4	351.89	153.8	351.49
156.31	351.59	159.04	352.43	164.74	351.94	168.76	349.2	174.15	349.34
176.14	352.31	183.78	352.86	185.84	353.01	202.53	353.09	228.12	353.77
242.58	354	243.08	354.08	268.03	355.47	271.1	355.65	276.88	356
279.61	356.42	290.09	358	293.7	358.35	295.16	358.52	296.99	358.71

```
  299.04  359.06  299.15  359.06  301.56  358.95  310.74  358.55  311.53  358.57
  326.08     360  343.08     362  362.94  363.92  363.84     364  373.86  364.98
  379.95  365.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  164.74     .04  176.14    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        164.74  176.14           153.6  154.59  153.42             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2331

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.49    6.68  364.41    7.02   364.4   14.19  364.07   14.82  364.03
   15.07     364   20.81  363.68   24.25  363.45   29.07  363.13   39.92  362.46
   45.16  362.09   46.53     362   47.28  361.49   49.54     360   52.15   358.3
   52.62     358   55.48  356.39   56.22     356   57.41  355.85   63.81  354.98
   71.45  353.58   95.41  352.52  117.31   352.1  137.93  352.42  139.13  352.39
  143.89  352.26   149.2  348.51  154.15   348.1  159.57  348.42  163.74  351.17
  170.01  352.12  172.55   352.5   187.7  353.21  192.26  353.51  195.07     354
  218.88  355.98  218.91  355.98   219.4  355.99  219.65     356  241.82  357.49
  246.88  357.84  249.17     358  261.51  359.33   265.1  359.63  265.64  359.68
  269.31     360  281.07  361.43  286.16     362  288.44  362.36  288.85  362.43
  290.52  362.72  297.61     364  300.67  364.91  304.17     366  307.87  366.43
     309   366.5  310.22  366.57  314.29  366.95  316.04   367.1  316.75  367.15
  319.13  367.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  143.89     .04  163.74    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        143.89  163.74           179.37   177.6  175.87             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2153

INPUT
Description:
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.32    3.92  364.56    4.01  364.56     8.3   364.3   12.46  364.04
   12.76  364.02   13.08     364   13.25  363.87   13.45  363.73   16.05     362
   16.68  361.53   18.91     360   20.77  358.61    21.6     358   21.89  357.75
   24.09     356   30.84  354.47   33.11     354   52.92  352.32   74.07  351.81
  101.65  351.28  120.22  351.43   120.5  351.43  127.63  349.88  130.12  350.05
  131.34  346.86     142  346.39  144.29  352.45  150.56  352.61  153.23  352.68
  168.08  353.97  172.88   354.8  182.71     356  183.66  356.09  183.87  356.11
  184.85  356.22  185.07  356.24  187.04  356.46  193.55  357.16  200.75     358
  212.41  359.89  213.06     360  217.64  360.89  223.61     362  228.58  363.12
  232.74     364  234.97  364.51  241.92     366  244.79  366.58  251.21     368
   256.5  369.43   258.4     370   259.7  370.42  264.45     372  269.94  372.39
  273.44  372.63

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  130.12     .04  144.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.12  144.29           160.15  158.75  157.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1994

INPUT
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```
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.16    1.03  359.27    6.73  358.67   10.37  358.29   12.97     358
   17.14  356.63      19     356   24.53  354.42   26.07     354   48.12   352.4
   57.17  351.28   75.62  351.28   92.39  351.14  101.12   350.8  106.95  350.57
  106.96  350.57  116.46  350.19   118.2  346.45  127.95  346.81  131.85  351.13
  136.96  351.29  150.75  351.72  165.28  352.31  177.37  352.98  196.01     354
  199.93  354.72  201.85  354.82  202.83  354.87  204.78  354.98  212.96  355.47
  214.68   355.8  216.21  355.53  218.47   355.7  222.42     356  236.41  357.33
  243.08     358  253.87   359.4  258.55     360  260.61  360.31  272.91     362
  275.22  362.56  277.16  363.07  277.31  363.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  116.46     .04  131.85    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        116.46  131.85            108.1  106.05  103.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1888

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354    68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        129.91  142.97            61.13   58.24    54.2             .3       .5

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 1850

INPUT
Description: Private Bridge
Distance from Upstream XS =    18.5
Deck/Roadway Width        =      16
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       8
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    3.66  359.97            81.5  359.87  357.87   101.7 360.452 358.452
   126.6 360.865 358.865     153 360.835 358.835   175.1 360.491 358.491
     201 360.491 358.491  320.31   359.1

Upstream Bridge Cross Section Data
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354    68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        129.91  142.97             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  359.24            91.4 359.823 357.823   114.8 360.523 358.523
   139.8  360.92  358.92     165 360.892 358.892   189.6 360.465 358.465
   211.7 359.771 357.771

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.24    2.43  358.98    4.52  358.77    8.77  358.35   11.48  358.04
   11.83     358   17.63  357.39   27.59  356.34   30.83     356    31.3  355.95
   50.96     354   66.68  349.58   82.55  349.15    94.6  350.53  103.53  350.29
  110.77  348.95  112.07  348.71  119.64  348.74   131.1  348.28  134.38  346.61
  143.36  346.68  149.09  351.02  155.33  350.92  161.76  350.82  177.15  351.12
  196.32  351.55  209.07  352.05  209.56  359.76  230.29  360.75  314.46  356.32
     319  356.67  323.81  357.07  332.17  357.73  334.02  357.88  335.57     358
  340.94  358.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   131.1     .04  149.09    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         131.1  149.09             .3       .5

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)               350.59    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               350.34    E.G. Elev (ft)              350.52        350.40
  Q Total (cfs)               194.00    W.S. Elev (ft)              350.24        350.28
  Q Bridge (cfs)              194.00    Crit W.S. (ft)              348.85        348.91
  Q Weir (cfs)                          Max Chl Dpth (ft)             4.51          3.67
  Weir Sta Lft (ft)                     Vel Total (ft/s)              3.36          2.17
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            57.76         89.58
  Weir Submerg                          Froude # Chl                  0.43          0.25
  Weir Max Depth (ft)                   Specif Force (cu ft)        106.49        130.09
  Min El Weir Flow (ft)       359.11    Hydr Depth (ft)               1.26          1.94
  Min El Prs (ft)             358.87    W.P. Total (ft)              48.21         48.10
  Delta EG (ft)                 0.24    Conv. Total (cfs)           3211.9        4621.8
  Delta WS (ft)                 0.09    Top Width (ft)              45.71         46.13
  BR Open Area (sq ft)        994.03    Frctn Loss (ft)               0.04          0.04
  BR Open Vel (ft/s)            3.36    C & E Loss (ft)               0.08          0.01
  BR Sluice Coef                        Shear Total (lb/sq ft)        0.27          0.20
  BR Sel Method          Energy only    Power Total (lb/ft s)         0.92          0.44
```

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	351.29	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	351.00	E.G. Elev (ft)	351.21	351.09
Q Total (cfs)	295.00	W.S. Elev (ft)	350.89	350.93
Q Bridge (cfs)	295.00	Crit W.S. (ft)	349.70	349.40
Q Weir (cfs)		Max Chl Dpth (ft)	5.16	4.32
Weir Sta Lft (ft)		Vel Total (ft/s)	3.11	2.33
Weir Sta Rgt (ft)		Flow Area (sq ft)	94.94	126.41
Weir Submerg		Froude # Chl	0.44	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	169.88	210.88
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.38	1.77
Min El Prs (ft)	358.87	W.P. Total (ft)	71.41	74.18
Delta EG (ft)	0.27	Conv. Total (cfs)	4862.5	6624.2
Delta WS (ft)	0.09	Top Width (ft)	68.87	71.27
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.11	C & E Loss (ft)	0.09	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.31	0.21
BR Sel Method	Energy only	Power Total (lb/ft s)	0.95	0.49

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	352.85	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	352.55	E.G. Elev (ft)	352.79	352.69
Q Total (cfs)	741.00	W.S. Elev (ft)	352.45	352.46
Q Bridge (cfs)	741.00	Crit W.S. (ft)	351.71	350.92
Q Weir (cfs)		Max Chl Dpth (ft)	6.72	5.85
Weir Sta Lft (ft)		Vel Total (ft/s)	2.86	2.58
Weir Sta Rgt (ft)		Flow Area (sq ft)	258.85	287.00
Weir Submerg		Froude # Chl	0.32	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	491.20	571.01
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	2.15	2.43
Min El Prs (ft)	358.87	W.P. Total (ft)	124.09	123.03
Delta EG (ft)	0.26	Conv. Total (cfs)	12672.8	15746.4
Delta WS (ft)	0.08	Top Width (ft)	120.34	118.06
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.86	C & E Loss (ft)	0.06	0.05
BR Sluice Coef		Shear Total (lb/sq ft)	0.45	0.32
BR Sel Method	Energy only	Power Total (lb/ft s)	1.27	0.83

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	354.15	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	353.80	E.G. Elev (ft)	354.07	353.98
Q Total (cfs)	1395.00	W.S. Elev (ft)	353.67	353.65
Q Bridge (cfs)	1395.00	Crit W.S. (ft)	352.64	352.13
Q Weir (cfs)		Max Chl Dpth (ft)	7.94	7.04
Weir Sta Lft (ft)		Vel Total (ft/s)	3.44	3.26
Weir Sta Rgt (ft)		Flow Area (sq ft)	405.74	427.57
Weir Submerg		Froude # Chl	0.32	0.31
Weir Max Depth (ft)		Specif Force (cu ft)	997.13	1098.38
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.38	3.62
Min El Prs (ft)	358.87	W.P. Total (ft)	126.54	125.41
Delta EG (ft)	0.29	Conv. Total (cfs)	22970.5	26502.1
Delta WS (ft)	0.13	Top Width (ft)	120.16	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	3.44	C & E Loss (ft)	0.03	0.07
BR Sluice Coef		Shear Total (lb/sq ft)	0.74	0.59
BR Sel Method	Energy only	Power Total (lb/ft s)	2.54	1.92

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	354.74	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.38	E.G. Elev (ft)	354.65	354.57
Q Total (cfs)	1765.00	W.S. Elev (ft)	354.21	354.18
Q Bridge (cfs)	1765.00	Crit W.S. (ft)	353.00	352.54
Q Weir (cfs)		Max Chl Dpth (ft)	8.48	7.57
Weir Sta Lft (ft)		Vel Total (ft/s)	3.76	3.61
Weir Sta Rgt (ft)		Flow Area (sq ft)	469.96	489.39
Weir Submerg		Froude # Chl	0.32	0.32
Weir Max Depth (ft)		Specif Force (cu ft)	1298.22	1406.78

Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.91	4.15
Min El Prs (ft)	358.87	W.P. Total (ft)	127.61	126.46
Delta EG (ft)	0.32	Conv. Total (cfs)	28299.4	32018.7
Delta WS (ft)	0.18	Top Width (ft)	120.09	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.06
BR Open Vel (ft/s)	3.76	C & E Loss (ft)	0.03	0.09
BR Sluice Coef		Shear Total (lb/sq ft)	0.89	0.73
BR Sel Method	Energy only	Power Total (lb/ft s)	3.36	2.65

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	355.33	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.96	E.G. Elev (ft)	355.23	355.15
Q Total (cfs)	2157.00	W.S. Elev (ft)	354.74	354.70
Q Bridge (cfs)	2157.00	Crit W.S. (ft)	353.33	352.91
Q Weir (cfs)		Max Chl Dpth (ft)	9.01	8.09
Weir Sta Lft (ft)		Vel Total (ft/s)	4.04	3.91
Weir Sta Rgt (ft)		Flow Area (sq ft)	533.72	551.12
Weir Submerg		Froude # Chl	0.33	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	1639.89	1755.90
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	4.45	4.67
Min El Prs (ft)	358.87	W.P. Total (ft)	128.68	127.51
Delta EG (ft)	0.34	Conv. Total (cfs)	34036.2	37958.7
Delta WS (ft)	0.22	Top Width (ft)	120.01	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.06	0.06
BR Open Vel (ft/s)	4.04	C & E Loss (ft)	0.02	0.10
BR Sluice Coef		Shear Total (lb/sq ft)	1.04	0.87
BR Sel Method	Energy only	Power Total (lb/ft s)	4.20	3.41

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1830

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.1	149.09	183.1	189.46	194.94	.3	.5

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1641

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.1	4.25	358	4.42	357.95	4.44	357.94	5.13	357.91
5.87	357.89	19.69	357.39	35.1	356.79	40.55	356.56	48.51	356.22
50.1	356.16	53.65	356	83.2	353.06	108.43	350.69	126.88	349.28
127.65	348.68	128.6	347.92	138.1	348.36	140.07	345.19	146.51	345.53
151.14	349.6	158.59	349.89	158.6	349.89	162.23	350.02	178.14	350
203.35	350.65	232.7	352	242.28	353.59	244.74	354	245.26	354.15
247.65	354.81	250.51	355.6	252.04	356	253.98	356.59	258.69	358
258.77	358.02	262.44	359.03	266	360	266.2	360.05	268.14	360.44
269.28	360.66	271.48	361.07	272.68	361.28	273.3	361.39		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

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       0    .075   138.1     .04  151.14    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         138.1  151.14           176.17  177.29  178.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1463

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  356.46    5.61  356.33   11.71  356.19   16.33  356.06   18.18  356.02
   18.32  356.02   18.54     356    21.8  355.67   22.14  355.65   22.36  355.64
   22.69   355.6   22.89  355.58   27.15  355.19   29.24  355.09   30.76  355.02
    40.4  354.87   40.86  354.85   41.76   354.8   42.75  354.73   52.82     354
   69.61  352.87   75.51  352.42   79.43  352.14   79.72  352.12   81.65     352
   84.43  351.86   90.72  351.56   92.09  351.48   94.79  351.34   97.19  351.19
  107.32  350.52   111.7  350.26  115.41     350  138.29   349.1  159.11   349.1
  178.46  349.47  180.13  349.17   185.3  348.24  187.99  347.08  189.19  343.45
  196.87  343.35  197.98  346.06  206.54  348.53  210.52  348.75  210.53  348.75
  221.24  349.34  234.53  349.78  266.44  352.56  278.62     358  283.38  359.43
  285.38     360     287  360.55  290.28  361.58  291.64     362  294.58  362.89
  295.91  363.28  296.57  363.47  298.25     364   302.9  365.77  303.51     366
  309.02  367.06  310.22  367.29  310.97  367.42  314.74     368  315.87  368.18
  323.73  369.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  180.13     .04  206.54    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        180.13  206.54           172.51  172.28  171.74             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1291

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  363.49     2.9  363.09   10.68  362.14   11.86     362   19.26  360.55
   22.08     360   26.38  358.97   30.59     358    34.4  357.21   38.91     356
   43.26  354.82   46.23  354.17   47.03     354   49.14  353.62   58.14     352
   66.85  350.97    70.1  350.58   71.43  350.42   75.07     350  108.53  348.38
  120.68  348.74  128.48  348.81  133.87  347.09   136.5  346.81  137.71   345.2
  141.95  344.89  151.53  345.15  155.49  348.28  157.84   348.3  161.16  349.47
  178.09  349.55  199.34  350.93  214.63   351.7   228.4  351.81  242.53  351.32
  264.66  350.52  286.44  349.15  310.41  348.72  338.21     349  371.72  348.77
   400.9  348.48   416.8  348.59  427.74  348.67  430.58  344.68   431.8  344.26
  436.65  344.85  441.26  344.51  442.29  347.58  447.46  349.08  448.01  349.24
  458.85  350.67   471.3  352.75  481.29  354.33  491.23  357.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  427.74     .04  447.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        427.74  447.46           167.7  167.44  166.86             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1124

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  365.04    4.51  364.72    9.16  364.27    9.25  364.27   12.12     364
    15.5  363.29   21.22     362   23.39  361.54   30.93     360   35.95  358.97
   39.85  358.17   50.58     356   54.08   355.4   62.03     354   62.65  353.83
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   63.34  353.65   73.01   352.9   74.16  352.78   80.64     352   83.69  351.62
   99.16     350   114.6  348.69  124.02  348.63   131.1  347.62  149.71  348.01
  162.72  347.51  168.53  347.49  170.35  344.49  173.71  344.74  179.87  343.88
  182.52  344.16  184.05  346.89  186.24     347  189.68  348.23  195.55  348.19
     207   347.6  214.71  347.82  233.96  347.66  252.64   348.2  276.32   348.2
  304.29  347.84  332.45  347.91  346.81  348.51  347.97   348.3     348   348.3
  350.12  347.92  353.36   347.9  355.26  348.34   360.2  343.58   367.1  344.05
  375.37  349.26  378.03   349.7  378.05   349.7  380.33  350.08  392.73  351.02
  398.58  351.56  403.03  351.81  420.09     354  435.53     356  439.63  356.61
  442.77  357.02  450.32     358  455.33  358.77   457.5  359.06  460.77  359.47
  461.87  359.63  462.18  359.68   465.1     360  473.65  361.11  476.71  361.53
  479.97     362  480.72  362.12  480.94  362.16  483.56  362.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  355.26     .04  375.37    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        355.26  375.37           134.05  129.91   125.5             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     8.7    60.7     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 994

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   359.1    9.62     358   14.71  356.95    19.8     356   30.42  354.45
   33.38     354   36.49   353.7    54.6     352   57.99  351.76   59.66  351.64
   70.88  350.84   72.94   350.7   82.85     350  114.72  348.11  135.81   347.8
  150.43  347.49  170.48  346.43  171.74  343.41  176.87  342.99  186.86  344.33
  188.91  347.54  212.62   347.3  226.74     347  231.31  347.32  247.53  347.69
  256.13   347.8  270.71  347.72  281.14  348.11   284.5   347.5  286.04  347.21
  292.04  347.03  296.33  343.73  302.06  343.28  306.33  342.85  309.85  346.99
  314.78  348.42  315.81  348.64  315.83  348.64  320.17  349.59  333.26  350.57
     351  352.36  364.37     354     373   355.3  375.39  355.67  377.77     356
  383.23  356.87  390.35     358  393.92  358.56   397.2  359.05  403.45     360
  407.85  360.84  413.86     362  417.04  362.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  281.14     .04  315.83    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        281.14  315.83            82.93   82.66    81.8             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 911

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     359    2.24  358.56    3.51  358.32    5.22     358   12.31  356.66
   15.03  356.09   15.46     356   22.75  354.09   23.08     354   23.55  353.96
   24.83  353.84   24.92  353.83   25.43  353.83   29.76  353.58      30  353.57
   30.58   353.5   31.25  353.48   33.98  353.69    35.3   353.7   36.97  353.98
   37.02  353.98   37.13     354    37.9  354.04   38.06  354.05   38.27  354.04
   38.32  354.04   38.42  354.03   38.82     354   38.99  353.95    39.2  353.82
   44.56  353.53   50.12  353.05   56.89  352.42   59.95  352.14   61.41     352
   82.47  350.57   91.08     350  100.51   349.7  117.56  348.31  130.96  347.87
  157.71  347.03  178.22  347.23  181.99  344.27  189.47  343.55  196.66  344.12
  201.78   347.5  223.44  347.06  243.05  346.93  252.46  346.76   252.6  346.85
  292.54  347.06  306.34  347.38  312.43  347.51  317.18  343.33  321.46  342.92
   325.5  343.21  332.27  348.29  337.05     349  337.06     349  351.26  351.11
  381.21  355.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  312.43     .04  332.27    .075
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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        312.43  332.27           138.48  148.66  157.22             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 762

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  357.13    2.35  357.03    6.48  356.67    7.69  356.61    9.39  356.51
   14.41     356   19.83  355.44      21  355.32   22.74  355.12   32.28     354
   34.37   353.8   35.36  353.71   51.57  352.14   52.81  352.02   53.01     352
   61.67  351.41   65.26  351.17   67.97  350.99   73.71  350.62   76.99  350.42
   81.35  350.17   81.78  350.14   84.01  350.03   84.52     350   108.7  348.46
  145.52  346.99  169.46  347.05  186.24  347.42  197.19  345.22  199.28  343.68
  205.18   343.3  208.29  343.86  210.89  346.07  228.95  347.18  235.77   347.3
  240.55  347.28  244.65  347.26  244.66  347.26   252.8  347.23   257.6  343.09
  259.66  342.54  263.98  342.94   271.9  344.77  276.21  346.65  276.24  346.66
  276.97  346.98  298.22  347.67  328.56  347.99  360.33  351.01  370.76  351.97
  371.89     352   373.6  352.14  375.07  352.27  376.35   352.4  384.34  353.82
  384.65  353.87  384.83   353.9  384.94  353.92   385.3     354     392  355.62
  393.35     356  395.32   356.4  403.54     358  408.28  358.51  410.83  358.82
  411.55  358.82  412.84   358.8  416.14  358.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   252.8     .04  276.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        252.8  276.97           101.69  104.14  104.96             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   366.8   407.4     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 658

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  358.95    2.26  358.79     5.3  358.55    9.28   358.2   11.48     358
   14.26  357.65   16.66  357.36   20.41  356.87   26.22  356.16   35.44  355.02
   41.74  354.15   42.79     354   59.31   352.1    59.6  352.07   59.76  352.05
    60.3     352   70.49  351.39    76.4  351.02   86.06  350.44   92.55     350
  118.81     348  200.75  346.51  222.09  346.42  240.59  346.42   245.1  346.43
  248.95  343.16  255.63  340.34   262.8   340.2  267.31  342.59  270.68  343.91
  277.89  346.74  301.79  346.57  332.03  346.36  388.47  347.88  391.63  347.92
  394.29  347.92  394.49  347.91  400.05     348  401.61  348.21  402.93   348.4
  404.42  348.65   405.7  348.87  406.58  349.04  407.19  349.17  412.03     350
  415.92  350.98  417.72  351.13  418.47  351.21  420.03  351.39  422.64  351.75
  422.86  351.79  424.26     352  426.31  352.71  429.22  353.83  429.43  353.91
  429.85  354.09  434.45     356  442.51  357.75  442.83  357.83  443.54     358
  450.24  358.39  464.98  359.29  465.18  359.32  466.53  359.48  470.64     360
  471.72  360.06  477.88   360.4  481.52  360.61  490.37  361.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   245.1     .04  277.89    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        245.1  277.89           129.48  132.55  137.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 526

INPUT
Description:
```

Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.29	9.33	356.07	9.88	356	15.36	355.41	18.93	355.03
21	354.81	28.17	354	30.46	353.79	34.1	353.48	42.62	352.81
46.05	352.53	47.8	352.4	49.22	352.29	53.02	352	59.04	351.42
61.87	351.16	67.63	350.62	73.95	350	93.12	348.67	121.73	346.39
157.75	346.18	186.76	345.79	188.34	345.18	188.36	345.17	195.28	342.48
203.56	341.63	212.23	342.05	213.87	346.6	218.56	346.44	218.57	346.44
237.47	345.8	275.28	345.64	307.64	346.39	309.73	346.39	311.5	346.41
313.11	346.41	314.75	346.4	329.39	346.38	337.83	346.31	340.98	346.28
350.53	346.19	372.03	346	378.64	346.57	382.54	346.9	390.22	347.56
395.28	348	402.02	349.12	407.12	350	408.46	350.19	409.19	350.29
409.96	350.41	415.16	351.21	417.91	351.63	420.21	352	425.22	352.92
430.26	354	432.81	354.65	434.33	355	437.88	355.74	438.42	355.87
439.17	356	441.01	356.24	446.9	356.96	448.95	357.26	452.86	357.84
453.18	357.89	453.89	358	458.07	358.55	459.62	358.79	462.41	359.19
467.23	360	483.54	360.76						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.76	.04	213.87	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.76	213.87	143.66	145.78	147.57	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
443	476.3	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 380

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.67	.48	366.64	10.41	366	17.37	364.74	21.25	364
25.91	363.14	31.6	362	37.28	360.91	41.95	360	46.91	359.56
63.27	358	71.54	357.11	76.74	356.56	81.96	356	84.51	355.63
95.36	354	101.45	352.61	104.07	352	106.08	351.38	110.9	350
116.69	348.33	117.74	348	119.59	347.7	121.4	347.41	126.04	346.65
130	346	133.26	346.1	135.45	346.16	138.15	346.24	146.78	346.47
149.42	346.45	150.34	346.44	151.1	346.43	151.57	346.42	155.44	346.29
164.04	345.66	193.28	345.53	212.79	346.39	212.81	346.39	215.37	346.51
219.06	341.92	227.8	342.05	238.17	343.21	243.49	346.6	243.7	346.6
243.72	346.59	260.79	346.48	291.92	346.27	304.59	346	319.84	347.43
322.97	347.65	328.49	348	330.64	348.16	332.41	348.38	334.7	348.61
337.77	348.94	346.14	350	350.1	350.95	354.1	352	360.75	353.66
362.11	354	365.83	354.84	369.98	355.77	370.39	355.85	371.06	356
372.08	356.17	382.09	358	386.28	358.59	390.61	359.14		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.37	.04	243.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.37	243.7	235.8	234.15	232.25	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10	44.6	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 146

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	6.37	358.83	15.88	358.07	16.47	358.02	16.84	358
21.14	357.01	25.77	356	28.06	355.5	30.16	355.06	34.73	354.18
35.2	354.08	35.66	354	37.68	353.72	38.1	353.66	41.6	353.18
44.05	352.85	45.88	352.61	50.58	352.01	50.71	352	52.8	351.88
60.34	351.5	61.05	351.44	66.3	351.17	67.3	351.09	70.18	350.94
72.76	350.72	76.24	350.54	81.27	350	100.43	348.85	105.06	348.54

115.51	348	138.29	346.9	181.73	345.23	210.07	344.41	210.09	344.41
215.13	344.26	220.35	341.19	225.41	340.73	231.22	340.96	236.01	344.28
240.33	344.79	253.16	346.33	258.95	349.49	260.11	349.59	263.96	350.56
267.35	352	269.7	353.13	271.51	354	273.55	355.07	275.21	356
277.09	356.89	279.29	358	283.62	359.32	285.5	359.78	286.47	360
291.06	360.4	294.96	360.73	299.25	361.08	301.38	361.31	304.13	361.54
306.53	361.84	306.74	361.86	307.86	362	314.98	363.37	318.1	364
325.64	365.64	327.27	366	335.18	367.64	336.93	368	339.58	368.18
343.85	368.49	346.34	368.31						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.13	.04	236.01	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.13	236.01	88.09	82.88	77.62	.1 .3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
15.2	56.5	365	296.2	338	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 63

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	354	7.34	353.26	12.41	352.73	16.79	352.29	19.4	352
27.1	350.79	31.84	350	38.59	349.24	50.74	348	57.78	347.37
58.67	347.29	60.21	347.18	62.82	346.94	66.66	346.68	68.29	346.54
76.91	346	79.38	345.88	79.63	345.86	80	345.83	80.68	345.78
83.85	345.58	87.55	345.35	103.02	344	108.36	342.62	114.01	342
118.01	340	138.02	340	142.02	342	147.2	343.25	150.03	344
151.66	344.32	153.16	344.61	153.93	344.74	155.1	344.92	156.66	345.2
158.34	345.42	159.11	345.56	160.97	345.74	161.25	345.79	163.2	345.94
163.62	346	170.72	346	174.59	346.47	175.77	346.56	176.48	346.66
177.66	346.84	178.56	346.94	180.57	347.23	181.89	347.4	182.5	347.49
185.96	348	187.92	348.58	193.03	350	195.4	350.82	198.31	352
201.23	353.21	203.77	354	207.9	355.67	208.87	356	212.01	357.21
214.25	358	216.21	358.46	223.24	360	225.85	360.29	227.5	360.52
231.62	361.04	238.04	362	248.29	363.79	249.46	364	253.46	364.5
253.68	364.53								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	103.02	.04	150.03	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
103.02	150.03	0	0	0 .1	.3

SUMMARY OF MANNING'S N VALUES

River:Plumtree

Reach	River Sta.	n1	n2	n3
Plumtree	10286	.085	.04	.085
Plumtree	10044	.085	.04	.085
Plumtree	9814	.085	.04	.085
Plumtree	9762	.085	.04	.085
Plumtree	9732	.075	.04	.075
Plumtree	9650	Culvert		
Plumtree	9589	.075	.04	.075
Plumtree	9499	.075	.04	.075
Plumtree	9398	.085	.04	.085
Plumtree	9301	.085	.04	.085
Plumtree	9196	.085	.04	.085
Plumtree	8987	.085	.04	.085
Plumtree	8753	.065	.04	.085
Plumtree	8579	.075	.04	.085
Plumtree	8374	.075	.04	.085
Plumtree	8229	.075	.04	.085
Plumtree	8094	.075	.04	.085
Plumtree	7954	.075	.04	.085

Plumtree	7800	.075	.04	.085
Plumtree	7548	.075	.04	.085
Plumtree	7367	.075	.04	.075
Plumtree	7216	.075	.04	.075
Plumtree	7030	.075	.04	.075
Plumtree	6893	.075	.04	.075
Plumtree	6766	.075	.04	.075
Plumtree	6663	.075	.04	.075
Plumtree	6568	.075	.04	.075
Plumtree	6454	.075	.04	.075
Plumtree	6375	Lat Struct		
Plumtree	6350	.075	.04	.075
Plumtree	6296	.075	.04	.075
Plumtree	6250	Culvert		
Plumtree	6197	.075	.04	.075
Plumtree	6122	.075	.04	.075
Plumtree	6028	.075	.04	.075
Plumtree	5926	.075	.04	.075
Plumtree	5824	.075	.04	.075
Plumtree	5745	.075	.04	.075
Plumtree	5711	.075	.04	.075
Plumtree	5650	Culvert		
Plumtree	5614	.075	.04	.075
Plumtree	5560	.075	.04	.075
Plumtree	5510	.075	.04	.075
Plumtree	5500	Bridge		
Plumtree	5474	.075	.04	.075
Plumtree	5419	.075	.04	.075
Plumtree	5323	.075	.04	.075
Plumtree	5209	.075	.04	.075
Plumtree	5107	.075	.04	.075
Plumtree	5040	.075	.04	.075
Plumtree	5000	Culvert		
Plumtree	4932	.075	.04	.075
Plumtree	4845	.075	.04	.075
Plumtree	4745	.075	.04	.075
Plumtree	4636	.075	.04	.075
Plumtree	4550	.075	.04	.075
Plumtree	4400	Culvert		
Plumtree	4344	.075	.04	.075
Plumtree	4289	.075	.04	.075
Plumtree	4185	.075	.04	.075
Plumtree	4033	.075	.04	.075
Plumtree	3930	.075	.04	.075
Plumtree	3816	.075	.04	.075
Plumtree	3688	.075	.04	.075
Plumtree	3550	.075	.04	.075
Plumtree	3428	.075	.04	.075
Plumtree	3296	.075	.04	.075
Plumtree	3179	.075	.04	.075
Plumtree	3077	.075	.04	.075
Plumtree	2978	.075	.04	.075
Plumtree	2917	.075	.04	.075
Plumtree	2900	Culvert		
Plumtree	2827	.075	.04	.075
Plumtree	2759	.075	.04	.075
Plumtree	2589	.075	.04	.075
Plumtree	2485	.075	.04	.075
Plumtree	2331	.075	.04	.075
Plumtree	2153	.075	.04	.075
Plumtree	1994	.075	.04	.075
Plumtree	1888	.075	.04	.075
Plumtree	1850	Bridge		
Plumtree	1830	.075	.04	.075
Plumtree	1641	.075	.04	.075
Plumtree	1463	.075	.04	.075
Plumtree	1291	.075	.04	.075
Plumtree	1124	.075	.04	.075
Plumtree	994	.075	.04	.075
Plumtree	911	.075	.04	.075
Plumtree	762	.075	.04	.075
Plumtree	658	.075	.04	.075
Plumtree	526	.075	.04	.075
Plumtree	380	.075	.04	.075
Plumtree	146	.075	.04	.075
Plumtree	63	.075	.04	.075

SUMMARY OF REACH LENGTHS

River: Plumtree

Reach	River Sta.	Left	Channel	Right
Plumtree	10286	240.46	241.25	237.2
Plumtree	10044	233.9	230.57	222.97
Plumtree	9814	52.19	51.52	50.85
Plumtree	9762	32.64	30.09	27.57
Plumtree	9732	145.71	143.47	141.55
Plumtree	9650	Culvert		
Plumtree	9589	74.95	89.37	103.36
Plumtree	9499	98.65	101.8	104.92
Plumtree	9398	97.24	96.47	94.54
Plumtree	9301	109.84	105	100.42
Plumtree	9196	197.07	208.89	195.59
Plumtree	8987	233.38	233.77	226.61
Plumtree	8753	178.41	174.76	168.62
Plumtree	8579	198.29	204.23	206.04
Plumtree	8374	144.9	145.45	146.03
Plumtree	8229	135.27	135.16	134.66
Plumtree	8094	138.21	139.81	140.01
Plumtree	7954	155.28	153.64	152.99
Plumtree	7800	252.37	252.82	252.55
Plumtree	7548	174.12	180.41	186.79
Plumtree	7367	143.37	150.84	157.8
Plumtree	7216	190.28	186.42	181.46
Plumtree	7030	140.13	137.19	133.92
Plumtree	6893	124.46	126.53	128.02
Plumtree	6766	103.31	103.53	104.46
Plumtree	6663	90.58	94.53	97.72
Plumtree	6568	112.95	114.27	115.74
Plumtree	6454	102.69	103.78	104.74
Plumtree	6375	Lat Struct		
Plumtree	6350	52.33	53.78	55.24
Plumtree	6296	98.47	99.02	99.58
Plumtree	6250	Culvert		
Plumtree	6197	75.78	74.81	73.83
Plumtree	6122	98.18	94.21	91.92
Plumtree	6028	100.93	101.91	101.19
Plumtree	5926	102.11	102.54	102.93
Plumtree	5824	75.62	79.21	82.75
Plumtree	5745	34.07	34.02	34.04
Plumtree	5711	96.24	96.18	98.71
Plumtree	5650	Culvert		
Plumtree	5614	60.47	54.67	45.26
Plumtree	5560	56.62	49.74	41.3
Plumtree	5510	36.56	36.42	38.18
Plumtree	5500	Bridge		
Plumtree	5474	54.4	54.86	54.94
Plumtree	5419	93.04	95.36	97.65
Plumtree	5323	116.69	114.31	111.9
Plumtree	5209	111.42	101.59	91.47
Plumtree	5107	67.29	67.07	66.86
Plumtree	5040	104.82	108.2	107.53
Plumtree	5000	Culvert		
Plumtree	4932	86.54	87.15	87.5
Plumtree	4845	89.54	100.49	110.66
Plumtree	4745	111.08	108.67	106.25
Plumtree	4636	90.09	85.72	81.01
Plumtree	4550	205.67	206.54	206.28
Plumtree	4400	Culvert		
Plumtree	4344	54.24	54.2	54.21
Plumtree	4289	104.83	104.42	103.52
Plumtree	4185	151.73	151.97	152.24
Plumtree	4033	105.3	103.27	101.24
Plumtree	3930	112.01	113.72	114.59
Plumtree	3816	128.5	127.87	127.21
Plumtree	3688	137.67	137.99	138.3
Plumtree	3550	121.58	121.96	122.09
Plumtree	3428	131.85	132.32	132.95
Plumtree	3296	117.57	116.94	115.99
Plumtree	3179	101.1	102.24	103.14
Plumtree	3077	99.64	98.98	98.39
Plumtree	2978	61.85	60.74	60.21
Plumtree	2917	89.63	90.26	89.98
Plumtree	2900	Culvert		

Plumtree	2827	59.3	67.61	75.81
Plumtree	2759	166.79	169.71	170.1
Plumtree	2589	102.11	104.17	106.57
Plumtree	2485	153.6	154.59	153.42
Plumtree	2331	179.37	177.6	175.87
Plumtree	2153	160.15	158.75	157.04
Plumtree	1994	108.1	106.05	103.75
Plumtree	1888	61.13	58.24	54.2
Plumtree	1850	Bridge		
Plumtree	1830	183.1	189.46	194.94
Plumtree	1641	176.17	177.29	178.52
Plumtree	1463	172.51	172.28	171.74
Plumtree	1291	167.7	167.44	166.86
Plumtree	1124	134.05	129.91	125.5
Plumtree	994	82.93	82.66	81.8
Plumtree	911	138.48	148.66	157.22
Plumtree	762	101.69	104.14	104.96
Plumtree	658	129.48	132.55	137.52
Plumtree	526	143.66	145.78	147.57
Plumtree	380	235.8	234.15	232.25
Plumtree	146	88.09	82.88	77.62
Plumtree	63	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Plumtree

Reach	River Sta.	Contr.	Expan.
Plumtree	10286	.1	.3
Plumtree	10044	.1	.3
Plumtree	9814	.1	.3
Plumtree	9762	.1	.3
Plumtree	9732	.3	.5
Plumtree	9650	Culvert	
Plumtree	9589	.3	.5
Plumtree	9499	.1	.3
Plumtree	9398	.1	.3
Plumtree	9301	.1	.3
Plumtree	9196	.1	.3
Plumtree	8987	.1	.3
Plumtree	8753	.1	.3
Plumtree	8579	.1	.3
Plumtree	8374	.1	.3
Plumtree	8229	.1	.3
Plumtree	8094	.1	.3
Plumtree	7954	.1	.3
Plumtree	7800	.1	.3
Plumtree	7548	.1	.3
Plumtree	7367	.1	.3
Plumtree	7216	.1	.3
Plumtree	7030	.1	.3
Plumtree	6893	.1	.3
Plumtree	6766	.1	.3
Plumtree	6663	.1	.3
Plumtree	6568	.1	.3
Plumtree	6454	.1	.3
Plumtree	6375	Lat Struct	
Plumtree	6350	.1	.3
Plumtree	6296	.3	.5
Plumtree	6250	Culvert	
Plumtree	6197	.3	.5
Plumtree	6122	.1	.3
Plumtree	6028	.1	.3
Plumtree	5926	.1	.3
Plumtree	5824	.1	.3
Plumtree	5745	.1	.3
Plumtree	5711	.3	.5
Plumtree	5650	Culvert	
Plumtree	5614	.3	.5
Plumtree	5560	.1	.3
Plumtree	5510	.3	.5
Plumtree	5500	Bridge	
Plumtree	5474	.3	.5
Plumtree	5419	.1	.3
Plumtree	5323	.1	.3

Plumtree	5209		.1	.3
Plumtree	5107		.1	.3
Plumtree	5040		.3	.5
Plumtree	5000	Culvert		
Plumtree	4932		.3	.5
Plumtree	4845		.1	.3
Plumtree	4745		.1	.3
Plumtree	4636		.1	.3
Plumtree	4550		.3	.5
Plumtree	4400	Culvert		
Plumtree	4344		.3	.5
Plumtree	4289		.1	.3
Plumtree	4185		.1	.3
Plumtree	4033		.1	.3
Plumtree	3930		.1	.3
Plumtree	3816		.1	.3
Plumtree	3688		.1	.3
Plumtree	3550		.1	.3
Plumtree	3428		.1	.3
Plumtree	3296		.1	.3
Plumtree	3179		.1	.3
Plumtree	3077		.1	.3
Plumtree	2978		.1	.3
Plumtree	2917		.3	.5
Plumtree	2900	Culvert		
Plumtree	2827		.3	.5
Plumtree	2759		.1	.3
Plumtree	2589		.1	.3
Plumtree	2485		.1	.3
Plumtree	2331		.1	.3
Plumtree	2153		.1	.3
Plumtree	1994		.1	.3
Plumtree	1888		.3	.5
Plumtree	1850	Bridge		
Plumtree	1830		.3	.5
Plumtree	1641		.1	.3
Plumtree	1463		.1	.3
Plumtree	1291		.1	.3
Plumtree	1124		.1	.3
Plumtree	994		.1	.3
Plumtree	911		.1	.3
Plumtree	762		.1	.3
Plumtree	658		.1	.3
Plumtree	526		.1	.3
Plumtree	380		.1	.3
Plumtree	146		.1	.3
Plumtree	63		.1	.3

HEC-RAS Plan: C River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	10286	1-YR	223.00	395.09	396.81	396.59	396.90	0.008138	3.23	121.42	150.01	0.58
Plumtree	10286	2-YR	307.00	395.09	396.98	396.60	397.10	0.008539	3.69	147.05	154.15	0.62
Plumtree	10286	10-YR	596.00	395.09	397.61	396.95	397.76	0.006496	4.33	248.53	169.55	0.58
Plumtree	10286	50-YR	995.00	395.09	398.01	397.34	398.27	0.008537	5.71	319.43	179.33	0.69
Plumtree	10286	100-YR	1200.00	395.09	398.12	397.51	398.46	0.010360	6.50	338.95	180.10	0.76
Plumtree	10286	7-30-2016	1333.00	395.09	398.20	397.62	398.58	0.011255	6.93	353.34	180.66	0.80
Plumtree	10044	1-YR	223.00	392.49	394.38	394.17	394.55	0.012033	4.01	95.57	160.05	0.71
Plumtree	10044	2-YR	307.00	392.49	394.57	394.26	394.76	0.011181	4.31	128.56	181.74	0.71
Plumtree	10044	10-YR	596.00	392.49	394.81	394.81	395.21	0.019905	6.42	174.65	200.40	0.97
Plumtree	10044	50-YR	995.00	392.49	395.39		395.77	0.013024	6.57	298.64	234.35	0.83
Plumtree	10044	100-YR	1200.00	392.49	395.74		396.07	0.009632	6.31	384.48	255.67	0.74
Plumtree	10044	7-30-2016	1333.00	392.49	395.95		396.26	0.008317	6.22	439.55	268.46	0.69
Plumtree	9814	1-YR	223.00	388.76	391.65	391.32	391.94	0.010722	4.30	51.91	43.53	0.69
Plumtree	9814	2-YR	307.00	388.76	392.01	391.61	392.32	0.010099	4.47	68.69	52.13	0.69
Plumtree	9814	10-YR	596.00	388.76	393.97	392.33	394.04	0.000995	2.52	424.51	272.22	0.25
Plumtree	9814	50-YR	995.00	388.76	395.24	393.16	395.30	0.000598	2.45	789.28	304.39	0.20
Plumtree	9814	100-YR	1200.00	388.76	395.55	393.38	395.62	0.000647	2.66	886.00	315.10	0.21
Plumtree	9814	7-30-2016	1333.00	388.76	395.75	393.50	395.82	0.000664	2.77	948.65	317.79	0.22
Plumtree	9762	1-YR	223.00	388.00	390.84		391.29	0.014434	5.36	41.63	30.27	0.81
Plumtree	9762	2-YR	307.00	388.00	391.35	390.95	391.76	0.011216	5.15	64.37	69.10	0.73
Plumtree	9762	10-YR	596.00	388.00	393.94		394.00	0.000648	2.21	479.19	228.01	0.20
Plumtree	9762	50-YR	995.00	388.00	395.21		395.27	0.000538	2.45	796.82	286.89	0.19
Plumtree	9762	100-YR	1200.00	388.00	395.52		395.59	0.000598	2.69	890.44	322.86	0.21
Plumtree	9762	7-30-2016	1333.00	388.00	395.71		395.79	0.000658	2.89	954.17	331.68	0.22
Plumtree	9732	1-YR	223.00	387.00	390.89	389.66	391.03	0.002737	3.09	72.07	34.50	0.38
Plumtree	9732	2-YR	307.00	387.00	391.35	390.00	391.54	0.002876	3.45	88.95	37.47	0.39
Plumtree	9732	10-YR	596.00	387.00	393.80	390.90	393.96	0.000990	3.21	193.76	166.87	0.26
Plumtree	9732	50-YR	995.00	387.00	395.11	391.81	395.24	0.000766	3.32	527.07	223.95	0.24
Plumtree	9732	100-YR	1200.00	387.00	395.40	392.17	395.56	0.000880	3.68	593.43	235.24	0.26
Plumtree	9732	7-30-2016	1333.00	387.00	395.59	392.41	395.76	0.000934	3.86	638.78	241.96	0.27
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	223.00	386.27	389.31	388.43	389.52	0.004152	3.67	61.60	35.83	0.46
Plumtree	9589	2-YR	307.00	386.27	389.99	388.79	390.20	0.002856	3.72	85.70	43.20	0.40
Plumtree	9589	10-YR	596.00	386.27	391.04	389.65	391.43	0.003384	5.07	123.56	63.32	0.47
Plumtree	9589	50-YR	995.00	386.27	392.07	390.53	392.59	0.003515	6.09	227.25	135.97	0.50
Plumtree	9589	100-YR	1200.00	386.27	392.60	390.93	393.12	0.003223	6.26	327.48	245.13	0.48
Plumtree	9589	7-30-2016	1333.00	386.27	392.89	391.32	393.38	0.002996	6.26	402.44	267.37	0.47
Plumtree	9499	1-YR	204.00	385.35	388.97		389.15	0.003898	3.51	70.65	50.97	0.44
Plumtree	9499	2-YR	321.00	385.35	389.75		389.92	0.002934	3.58	125.38	124.78	0.40
Plumtree	9499	10-YR	719.00	385.35	390.88		391.08	0.002582	4.32	294.26	158.77	0.40
Plumtree	9499	50-YR	1263.00	385.35	391.97		392.20	0.002314	4.88	474.75	171.09	0.40
Plumtree	9499	100-YR	1578.00	385.35	392.51		392.74	0.002216	5.13	567.74	175.97	0.40
Plumtree	9499	7-30-2016	1757.00	385.35	392.79		393.03	0.002177	5.27	617.40	178.49	0.40
Plumtree	9398	1-YR	204.00	384.42	388.37		388.70	0.004701	4.54	44.89	15.87	0.48
Plumtree	9398	2-YR	321.00	384.42	388.92	387.78	389.45	0.006779	5.86	65.41	97.70	0.58
Plumtree	9398	10-YR	719.00	384.42	390.45		390.76	0.003626	5.57	289.42	167.13	0.45
Plumtree	9398	50-YR	1263.00	384.42	391.67		391.93	0.002885	5.79	503.70	182.79	0.42
Plumtree	9398	100-YR	1578.00	384.42	392.22		392.49	0.002794	6.05	606.79	192.69	0.42
Plumtree	9398	7-30-2016	1757.00	384.42	392.51		392.78	0.002729	6.16	664.04	196.97	0.42
Plumtree	9301	1-YR	204.00	383.31	388.11		388.33	0.002680	3.80	62.04	32.60	0.37
Plumtree	9301	2-YR	321.00	383.31	388.50		388.89	0.004323	5.16	81.35	69.83	0.48
Plumtree	9301	10-YR	719.00	383.31	389.23	389.18	390.17	0.009143	8.49	142.78	91.28	0.72
Plumtree	9301	50-YR	1263.00	383.31	390.17	390.17	391.36	0.010478	10.35	232.10	100.36	0.80
Plumtree	9301	100-YR	1578.00	383.31	390.59	390.59	391.91	0.011035	11.19	275.72	104.50	0.83
Plumtree	9301	7-30-2016	1757.00	383.31	390.79	390.79	392.19	0.011514	11.69	296.68	106.44	0.85
Plumtree	9196	1-YR	204.00	383.81	387.40	387.40	387.81	0.010238	5.48	61.09	107.80	0.69
Plumtree	9196	2-YR	321.00	383.81	387.74	387.73	388.20	0.010946	6.21	99.99	121.59	0.73
Plumtree	9196	10-YR	719.00	383.81	388.82		389.17	0.006723	6.33	246.23	143.82	0.61
Plumtree	9196	50-YR	1263.00	383.81	389.79	389.01	390.16	0.005917	7.03	390.74	154.81	0.60
Plumtree	9196	100-YR	1578.00	383.81	390.24	389.28	390.64	0.005766	7.42	461.97	159.38	0.60
Plumtree	9196	7-30-2016	1757.00	383.81	390.48	389.44	390.89	0.005701	7.62	500.52	161.92	0.60
Plumtree	8987	1-YR	204.00	382.77	386.54	385.23	386.67	0.002345	3.34	119.75	115.30	0.34
Plumtree	8987	2-YR	321.00	382.77	387.00		387.15	0.002549	3.84	174.45	121.03	0.37
Plumtree	8987	10-YR	719.00	382.77	387.95		388.19	0.003433	5.25	295.29	132.81	0.44
Plumtree	8987	50-YR	1263.00	382.77	388.79		389.13	0.004364	6.66	410.83	141.71	0.52
Plumtree	8987	100-YR	1578.00	382.77	389.19		389.58	0.004762	7.31	467.81	145.45	0.54
Plumtree	8987	7-30-2016	1757.00	382.77	389.40		389.82	0.004958	7.64	498.21	147.40	0.56

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	8753	1-YR	204.00	381.99	385.24	385.24	385.66	0.009692	5.85	60.16	79.52	0.66
Plumtree	8753	2-YR	321.00	381.99	385.62	385.55	386.06	0.010043	6.55	91.63	87.32	0.69
Plumtree	8753	10-YR	719.00	381.99	386.73		387.08	0.006968	6.81	225.01	174.86	0.61
Plumtree	8753	50-YR	1263.00	381.99	387.83		388.07	0.004512	6.46	448.27	231.04	0.51
Plumtree	8753	100-YR	1578.00	381.99	388.33		388.55	0.003768	6.29	569.25	245.93	0.47
Plumtree	8753	7-30-2016	1757.00	381.99	388.59		388.80	0.003460	6.22	634.06	251.24	0.46
Plumtree	8579	1-YR	204.00	381.13	384.21	383.48	384.40	0.004728	4.12	88.21	90.48	0.48
Plumtree	8579	2-YR	321.00	381.13	384.75		384.94	0.003945	4.34	141.08	101.78	0.46
Plumtree	8579	10-YR	719.00	381.13	385.97		386.19	0.003546	5.22	276.06	121.09	0.46
Plumtree	8579	50-YR	1263.00	381.13	387.05		387.34	0.003765	6.30	417.89	143.41	0.49
Plumtree	8579	100-YR	1578.00	381.13	387.55		387.87	0.003821	6.76	491.56	151.07	0.50
Plumtree	8579	7-30-2016	1757.00	381.13	387.81		388.15	0.003835	6.98	531.31	154.43	0.51
Plumtree	8374	1-YR	204.00	380.31	383.79		383.88	0.001467	2.73	125.40	87.23	0.28
Plumtree	8374	2-YR	321.00	380.31	384.29		384.40	0.001770	3.25	170.67	94.20	0.32
Plumtree	8374	10-YR	719.00	380.31	385.42		385.60	0.002339	4.48	286.79	111.54	0.38
Plumtree	8374	50-YR	1263.00	380.31	386.39		386.67	0.002922	5.73	401.35	123.87	0.44
Plumtree	8374	100-YR	1578.00	380.31	386.83		387.17	0.003216	6.33	456.77	130.00	0.47
Plumtree	8374	7-30-2016	1757.00	380.31	387.05		387.42	0.003372	6.65	486.33	133.64	0.48
Plumtree	8229	1-YR	204.00	379.79	382.85	382.85	383.38	0.010607	6.43	55.07	65.24	0.72
Plumtree	8229	2-YR	321.00	379.79	383.45	383.29	383.89	0.008132	6.50	101.18	86.73	0.65
Plumtree	8229	10-YR	719.00	379.79	384.50		385.00	0.008159	7.90	207.07	116.52	0.68
Plumtree	8229	50-YR	1263.00	379.79	385.40		385.97	0.008374	9.13	323.88	136.34	0.72
Plumtree	8229	100-YR	1578.00	379.79	385.82		386.43	0.008442	9.66	381.90	142.15	0.73
Plumtree	8229	7-30-2016	1757.00	379.79	386.02		386.65	0.008655	10.01	410.04	144.93	0.74
Plumtree	8094	1-YR	204.00	378.24	381.72	380.86	382.12	0.007250	5.29	52.91	63.21	0.57
Plumtree	8094	2-YR	321.00	378.24	382.06	381.98	382.66	0.010033	6.70	79.41	93.32	0.68
Plumtree	8094	10-YR	719.00	378.24	382.97	382.97	383.69	0.011307	8.47	178.49	125.63	0.75
Plumtree	8094	50-YR	1263.00	378.24	383.69	383.69	384.56	0.012929	10.14	277.14	145.63	0.83
Plumtree	8094	100-YR	1578.00	378.24	384.01	384.01	384.96	0.013794	10.94	324.44	153.05	0.87
Plumtree	8094	7-30-2016	1757.00	378.24	384.19	384.19	385.16	0.013852	11.24	353.17	157.07	0.87
Plumtree	7954	1-YR	204.00	377.79	381.03	380.76	381.13	0.005744	3.86	126.50	155.83	0.50
Plumtree	7954	2-YR	321.00	377.79	381.31	380.96	381.43	0.006207	4.41	171.27	160.64	0.53
Plumtree	7954	10-YR	719.00	377.79	382.00	381.39	382.18	0.007347	5.77	285.90	176.81	0.60
Plumtree	7954	50-YR	1263.00	377.79	382.67	381.85	382.91	0.007889	6.89	408.30	187.44	0.65
Plumtree	7954	100-YR	1578.00	377.79	383.00	382.11	383.28	0.008071	7.39	470.73	192.59	0.66
Plumtree	7954	7-30-2016	1757.00	377.79	383.18	382.22	383.47	0.008143	7.65	504.52	195.27	0.67
Plumtree	7800	1-YR	204.00	378.73	379.84		379.92	0.011082	3.70	118.96	173.24	0.67
Plumtree	7800	2-YR	321.00	378.73	380.07		380.17	0.011140	4.28	159.11	178.65	0.70
Plumtree	7800	10-YR	719.00	378.73	380.70		380.86	0.010055	5.41	274.93	188.79	0.71
Plumtree	7800	50-YR	1263.00	378.73	381.37		381.59	0.009309	6.43	404.96	199.56	0.72
Plumtree	7800	100-YR	1578.00	378.73	381.71		381.96	0.008999	6.88	473.12	204.98	0.72
Plumtree	7800	7-30-2016	1757.00	378.73	381.90		382.16	0.008777	7.09	511.60	207.97	0.72
Plumtree	7548	1-YR	204.00	375.57	378.60		378.65	0.002822	3.01	196.75	273.00	0.37
Plumtree	7548	2-YR	321.00	375.57	378.91		378.95	0.002633	3.18	281.31	279.96	0.36
Plumtree	7548	10-YR	719.00	375.57	379.66		379.71	0.002476	3.69	498.14	298.31	0.37
Plumtree	7548	50-YR	1263.00	375.57	380.46		380.53	0.002237	4.08	744.83	312.92	0.36
Plumtree	7548	100-YR	1578.00	375.57	380.83		380.90	0.002230	4.32	860.52	317.86	0.37
Plumtree	7548	7-30-2016	1757.00	375.57	381.05		381.13	0.002158	4.40	931.91	320.79	0.36
Plumtree	7367	1-YR	204.00	378.30	377.68		377.74	0.010709		102.04	116.77	0.00
Plumtree	7367	2-YR	321.00	378.30	378.00		378.08	0.010875		144.59	149.00	0.00
Plumtree	7367	10-YR	719.00	378.30	378.88		378.97	0.007680	1.48	310.70	228.16	0.47
Plumtree	7367	50-YR	1263.00	378.30	379.87		379.94	0.005048	2.57	625.95	396.98	0.45
Plumtree	7367	100-YR	1578.00	378.30	380.33		380.39	0.003578	2.78	809.79	407.38	0.41
Plumtree	7367	7-30-2016	1757.00	378.30	380.61		380.67	0.002933	2.83	924.51	412.40	0.38
Plumtree	7216	1-YR	204.00	375.26	377.08	376.50	377.12	0.002049	1.88	169.34	193.43	0.30
Plumtree	7216	2-YR	321.00	375.26	377.38	376.67	377.43	0.002166	2.25	229.61	210.45	0.33
Plumtree	7216	10-YR	719.00	375.26	378.53	377.10	378.59	0.001192	2.44	504.64	261.16	0.27
Plumtree	7216	50-YR	1263.00	375.26	379.58	377.53	379.65	0.001002	2.80	796.86	294.34	0.26
Plumtree	7216	100-YR	1578.00	375.26	380.06	377.75	380.14	0.000976	3.00	940.74	308.31	0.26
Plumtree	7216	7-30-2016	1757.00	375.26	380.36	377.86	380.44	0.000917	3.05	1034.59	314.72	0.25
Plumtree	7030	1-YR	204.00	373.43	376.00	376.00	376.26	0.015907	6.07	87.90	152.85	0.83
Plumtree	7030	2-YR	321.00	373.43	376.17	376.17	376.50	0.019508	7.18	114.64	158.76	0.94
Plumtree	7030	10-YR	719.00	373.43	378.32		378.36	0.001230	3.02	532.60	219.21	0.27
Plumtree	7030	50-YR	1263.00	373.43	379.39		379.44	0.001221	3.53	774.72	233.34	0.28
Plumtree	7030	100-YR	1578.00	373.43	379.86		379.92	0.001292	3.86	887.05	243.88	0.29
Plumtree	7030	7-30-2016	1757.00	373.43	380.17		380.23	0.001285	3.99	963.79	254.82	0.29

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	6893	1-YR	204.00	370.68	374.15	373.50	374.35	0.005072	4.00	89.39	107.65	0.50
Plumtree	6893	2-YR	321.00	370.68	374.62	373.69	374.81	0.004360	4.26	143.77	126.53	0.48
Plumtree	6893	10-YR	719.00	370.68	378.26		378.28	0.000266	1.93	802.06	224.85	0.14
Plumtree	6893	50-YR	1263.00	370.68	379.31		379.35	0.000392	2.60	1048.17	244.77	0.17
Plumtree	6893	100-YR	1578.00	370.68	379.77		379.82	0.000459	2.94	1163.20	253.44	0.19
Plumtree	6893	7-30-2016	1757.00	370.68	380.07		380.13	0.000476	3.07	1241.30	258.98	0.19
Plumtree	6766	1-YR	204.00	369.76	373.53		373.71	0.004967	3.71	83.20	96.80	0.49
Plumtree	6766	2-YR	321.00	369.76	374.23		374.36	0.002730	3.43	158.15	115.09	0.38
Plumtree	6766	10-YR	719.00	369.76	378.24		378.25	0.000172	1.63	950.84	269.27	0.11
Plumtree	6766	50-YR	1263.00	369.76	379.27		379.30	0.000275	2.27	1254.06	318.24	0.15
Plumtree	6766	100-YR	1578.00	369.76	379.73		379.77	0.000328	2.58	1404.35	342.59	0.16
Plumtree	6766	7-30-2016	1757.00	369.76	380.03		380.07	0.000339	2.69	1510.20	353.55	0.16
Plumtree	6663	1-YR	204.00	369.26	373.18		373.35	0.002480	3.38	79.63	80.21	0.36
Plumtree	6663	2-YR	321.00	369.26	373.97		374.12	0.001894	3.47	155.01	112.14	0.32
Plumtree	6663	10-YR	719.00	369.26	378.22		378.24	0.000136	1.57	1095.62	319.86	0.10
Plumtree	6663	50-YR	1263.00	369.26	379.25		379.28	0.000203	2.09	1437.11	341.64	0.12
Plumtree	6663	100-YR	1578.00	369.26	379.70		379.74	0.000240	2.34	1593.70	350.49	0.14
Plumtree	6663	7-30-2016	1757.00	369.26	380.01		380.04	0.000249	2.44	1701.03	356.89	0.14
Plumtree	6568	1-YR	209.00	368.65	372.77	371.39	373.05	0.003958	4.39	65.26	55.29	0.43
Plumtree	6568	2-YR	334.00	368.65	373.65		373.89	0.003041	4.52	135.79	103.01	0.39
Plumtree	6568	10-YR	772.00	368.65	378.20		378.22	0.000180	1.81	1029.46	272.85	0.11
Plumtree	6568	50-YR	1391.00	368.65	379.22		379.25	0.000300	2.51	1318.50	296.30	0.14
Plumtree	6568	100-YR	1736.00	368.65	379.67		379.71	0.000362	2.85	1453.04	308.62	0.16
Plumtree	6568	7-30-2016	2002.00	368.65	379.96		380.01	0.000412	3.10	1545.83	318.46	0.17
Plumtree	6454	1-YR	209.00	368.30	371.71		372.24	0.014407	5.88	35.55	21.53	0.81
Plumtree	6454	2-YR	334.00	368.30	373.21		373.51	0.003654	4.48	94.01	61.27	0.45
Plumtree	6454	10-YR	772.00	368.30	378.18		378.20	0.000152	1.74	928.61	221.85	0.11
Plumtree	6454	50-YR	1391.00	368.30	379.17		379.22	0.000277	2.53	1167.29	258.34	0.15
Plumtree	6454	100-YR	1736.00	368.30	379.61		379.67	0.000343	2.91	1282.46	273.89	0.17
Plumtree	6454	7-30-2016	2002.00	368.30	379.89		379.96	0.000395	3.19	1362.47	285.96	0.18
Plumtree	6375 Culvert Diversio		Lat Struct									
Plumtree	6350	1-YR	141.98	366.97	371.55	369.40	371.65	0.001617	2.51	56.55	22.58	0.28
Plumtree	6350	2-YR	211.52	366.97	373.19	370.08	373.26	0.000767	2.15	99.07	30.41	0.20
Plumtree	6350	10-YR	569.32	366.97	378.14	371.77	378.18	0.000170	1.82	533.58	206.52	0.11
Plumtree	6350	50-YR	1184.79	366.97	379.07	373.54	379.18	0.000436	3.12	718.08	247.27	0.18
Plumtree	6350	100-YR	1529.28	366.97	379.46	374.41	379.61	0.000583	3.71	807.96	264.03	0.21
Plumtree	6350	7-30-2016	1796.61	366.97	379.72	374.99	379.90	0.000696	4.13	869.79	272.93	0.23
Plumtree	6296	1-YR	141.98	367.41	371.34	369.99	371.52	0.003231	3.61	46.69	23.01	0.38
Plumtree	6296	2-YR	211.52	367.41	373.10	370.58	373.21	0.001165	2.94	95.71	33.45	0.25
Plumtree	6296	10-YR	569.32	367.41	378.11	372.29	378.17	0.000341	2.63	472.97	145.25	0.15
Plumtree	6296	50-YR	1184.79	367.41	378.96	374.19	379.14	0.000929	4.59	611.09	190.92	0.25
Plumtree	6296	100-YR	1529.28	367.41	379.30	374.93	379.56	0.001279	5.50	688.04	232.70	0.30
Plumtree	6296	7-30-2016	1796.61	367.41	379.53	375.94	379.83	0.001533	6.11	742.30	247.44	0.33
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	141.98	366.39	370.28	367.72	370.32	0.000461	1.63	87.45	28.57	0.16
Plumtree	6197	2-YR	211.52	366.39	371.08	368.08	371.14	0.000478	1.93	111.36	30.85	0.17
Plumtree	6197	10-YR	569.32	366.39	373.07	369.42	373.25	0.000866	3.40	178.31	36.49	0.25
Plumtree	6197	50-YR	1184.79	366.39	374.89	370.99	375.32	0.001497	5.34	251.93	50.87	0.34
Plumtree	6197	100-YR	1529.28	366.39	375.55	371.72	376.14	0.001862	6.29	291.52	68.37	0.38
Plumtree	6197	7-30-2016	1796.61	366.39	376.01	372.26	376.72	0.002099	6.92	325.85	80.53	0.41
Plumtree	6122	1-YR	141.98	366.62	369.47	369.06	370.06	0.013382	6.12	23.20	11.07	0.75
Plumtree	6122	2-YR	211.52	366.62	369.72	369.72	370.74	0.023667	8.09	26.14	12.79	1.00
Plumtree	6122	10-YR	569.32	366.62	371.96	371.64	372.87	0.010479	7.96	89.18	42.62	0.75
Plumtree	6122	50-YR	1184.79	366.62	373.35	373.35	374.78	0.011834	10.54	163.42	73.92	0.84
Plumtree	6122	100-YR	1529.28	366.62	373.94	373.94	375.55	0.012037	11.46	200.00	79.13	0.86
Plumtree	6122	7-30-2016	1796.61	366.62	374.35	374.35	376.09	0.012211	12.11	225.78	87.05	0.88
Plumtree	6028	1-YR	141.98	365.53	369.26	368.20	369.39	0.003064	3.15	61.34	60.32	0.39
Plumtree	6028	2-YR	211.52	365.53	369.81	368.91	369.95	0.002433	3.29	98.13	72.84	0.36
Plumtree	6028	10-YR	569.32	365.53	372.34	369.98	372.43	0.000859	3.08	366.30	143.78	0.24
Plumtree	6028	50-YR	1184.79	365.53	373.59	371.04	373.74	0.001248	4.29	566.30	203.71	0.30
Plumtree	6028	100-YR	1529.28	365.53	374.13	371.53	374.31	0.001377	4.76	659.97	215.61	0.32
Plumtree	6028	7-30-2016	1796.61	365.53	374.51	371.86	374.70	0.001464	5.08	726.95	224.53	0.33
Plumtree	5926	1-YR	141.98	365.38	368.72	368.07	368.97	0.005506	4.40	43.43	27.22	0.50
Plumtree	5926	2-YR	211.52	365.38	369.22	368.50	369.56	0.005966	5.20	59.06	37.35	0.54
Plumtree	5926	10-YR	569.32	365.38	372.15	370.10	372.31	0.001587	4.28	258.77	153.09	0.31
Plumtree	5926	50-YR	1184.79	365.38	373.20	371.56	373.54	0.002941	6.51	362.83	163.82	0.44

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5926	100-YR	1529.28	365.38	373.64	372.01	374.07	0.003591	7.50	409.56	168.30	0.49
Plumtree	5926	7-30-2016	1796.61	365.38	373.94	372.33	374.44	0.004071	8.20	441.98	171.23	0.52
Plumtree	5824	1-YR	141.98	365.08	367.23	367.23	367.92	0.022698	6.65	21.34	15.69	1.01
Plumtree	5824	2-YR	211.52	365.08	368.75		368.98	0.004742	3.89	54.33	27.74	0.49
Plumtree	5824	10-YR	569.32	365.08	372.06		372.18	0.000822	3.06	304.05	156.17	0.24
Plumtree	5824	50-YR	1184.79	365.08	373.07		373.30	0.001432	4.56	467.79	167.48	0.33
Plumtree	5824	100-YR	1529.28	365.08	373.49		373.79	0.001701	5.20	540.12	171.92	0.36
Plumtree	5824	7-30-2016	1796.61	365.08	373.78		374.12	0.001897	5.65	589.77	174.93	0.38
Plumtree	5745	1-YR	141.98	363.03	366.80	365.64	366.99	0.003731	3.50	40.59	19.35	0.43
Plumtree	5745	2-YR	211.52	363.03	368.69	366.12	368.78	0.001084	2.51	85.71	31.56	0.25
Plumtree	5745	10-YR	569.32	363.03	372.01	367.79	372.12	0.000561	2.81	269.01	99.49	0.20
Plumtree	5745	50-YR	1184.79	363.03	372.86	369.64	373.18	0.001445	4.91	339.10	116.87	0.32
Plumtree	5745	100-YR	1529.28	363.03	373.15	370.40	373.62	0.002039	5.99	364.86	133.11	0.39
Plumtree	5745	7-30-2016	1796.61	363.03	373.31	370.98	373.92	0.002579	6.83	379.14	142.56	0.44
Plumtree	5711	1-YR	141.98	362.51	366.77	364.78	366.88	0.001669	2.66	53.38	20.74	0.29
Plumtree	5711	2-YR	211.52	362.51	368.68	365.33	368.75	0.000630	2.12	105.16	37.64	0.19
Plumtree	5711	10-YR	569.32	362.51	372.01	367.10	372.10	0.000415	2.58	323.51	101.94	0.17
Plumtree	5711	50-YR	1184.79	362.51	372.86	369.05	373.12	0.001116	4.57	444.01	167.84	0.29
Plumtree	5711	100-YR	1529.28	362.51	373.15	369.91	373.53	0.001564	5.54	495.73	179.12	0.34
Plumtree	5711	7-30-2016	1796.61	362.51	373.33	370.43	373.80	0.001922	6.23	527.24	182.79	0.38
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	141.98	361.81	365.96	363.76	366.02	0.000805	1.94	73.28	27.40	0.21
Plumtree	5614	2-YR	211.52	361.81	366.76	364.15	366.83	0.000833	2.20	96.28	30.44	0.22
Plumtree	5614	10-YR	569.32	361.81	371.07	365.62	371.12	0.000220	1.93	478.50	172.69	0.13
Plumtree	5614	50-YR	1184.79	361.81	372.52	367.34	372.61	0.000391	2.91	757.71	216.44	0.18
Plumtree	5614	100-YR	1529.28	361.81	372.98	368.12	373.11	0.000505	3.43	862.76	234.41	0.20
Plumtree	5614	7-30-2016	1796.61	361.81	373.30	368.60	373.45	0.000577	3.75	938.58	239.05	0.22
Plumtree	5560	1-YR	141.98	362.08	365.87		365.96	0.001326	2.37	59.97	23.01	0.26
Plumtree	5560	2-YR	211.52	362.08	366.65		366.76	0.001391	2.67	79.28	26.25	0.27
Plumtree	5560	10-YR	569.32	362.08	371.06		371.10	0.000219	1.89	612.28	256.89	0.12
Plumtree	5560	50-YR	1184.79	362.08	372.52		372.58	0.000317	2.57	1036.98	312.13	0.15
Plumtree	5560	100-YR	1529.28	362.08	372.98		373.06	0.000390	2.95	1187.91	331.76	0.17
Plumtree	5560	7-30-2016	1796.61	362.08	373.30		373.39	0.000438	3.20	1296.42	342.89	0.18
Plumtree	5510	1-YR	141.98	362.16	365.50	364.64	365.81	0.006295	4.43	32.04	15.34	0.54
Plumtree	5510	2-YR	211.52	362.16	366.27	365.18	366.62	0.005673	4.74	44.61	17.68	0.53
Plumtree	5510	10-YR	569.32	362.16	370.98	367.01	371.08	0.000585	2.86	374.72	216.56	0.20
Plumtree	5510	50-YR	1184.79	362.16	372.40	369.24	372.54	0.000838	3.90	630.10	249.24	0.24
Plumtree	5510	100-YR	1529.28	362.16	372.83	369.90	373.01	0.001027	4.48	717.39	255.43	0.27
Plumtree	5510	7-30-2016	1796.61	362.16	373.13	370.76	373.34	0.001163	4.88	778.57	259.68	0.29
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	141.98	361.52	365.42	363.69	365.57	0.002276	3.07	46.27	17.79	0.34
Plumtree	5474	2-YR	211.52	361.52	366.18	364.22	366.37	0.002419	3.48	60.73	20.06	0.35
Plumtree	5474	10-YR	569.32	361.52	370.93	366.07	371.01	0.000406	2.51	410.25	168.22	0.17
Plumtree	5474	50-YR	1184.79	361.52	372.30	368.34	372.44	0.000672	3.63	663.98	202.53	0.22
Plumtree	5474	100-YR	1529.28	361.52	372.71	369.25	372.88	0.000858	4.23	747.38	207.42	0.25
Plumtree	5474	7-30-2016	1796.61	361.52	372.98	369.92	373.19	0.000997	4.65	804.98	210.73	0.27
Plumtree	5419	1-YR	141.98	361.46	365.24	363.74	365.42	0.002906	3.40	41.70	16.30	0.38
Plumtree	5419	2-YR	211.52	361.46	365.97	364.26	366.21	0.003107	3.89	54.38	18.03	0.39
Plumtree	5419	10-YR	569.32	361.46	370.91	366.12	370.98	0.000390	2.50	430.57	187.11	0.16
Plumtree	5419	50-YR	1184.79	361.46	372.27	368.60	372.40	0.000692	3.71	652.19	220.59	0.22
Plumtree	5419	100-YR	1529.28	361.46	372.66	369.60	372.83	0.000897	4.35	724.14	225.26	0.25
Plumtree	5419	7-30-2016	1796.61	361.46	372.93	369.98	373.13	0.001054	4.81	773.45	228.24	0.28
Plumtree	5323	1-YR	141.98	361.32	364.89		365.10	0.003788	3.64	39.01	16.69	0.42
Plumtree	5323	2-YR	211.52	361.32	365.62		365.88	0.003801	4.07	52.70	28.21	0.43
Plumtree	5323	10-YR	569.32	361.32	370.91		370.95	0.000209	1.90	579.00	147.64	0.12
Plumtree	5323	50-YR	1184.79	361.32	372.26		372.33	0.000420	2.98	789.16	166.38	0.17
Plumtree	5323	100-YR	1529.28	361.32	372.64		372.75	0.000574	3.59	854.72	172.98	0.20
Plumtree	5323	7-30-2016	1796.61	361.32	372.90		373.03	0.000697	4.02	899.80	177.12	0.23
Plumtree	5209	1-YR	141.98	361.10	364.13	363.33	364.49	0.007408	4.86	29.23	13.38	0.58
Plumtree	5209	2-YR	211.52	361.10	364.80	363.89	365.27	0.007540	5.44	38.85	14.97	0.60
Plumtree	5209	10-YR	569.32	361.10	370.90	366.21	370.92	0.000171	1.82	666.16	164.06	0.11
Plumtree	5209	50-YR	1184.79	361.10	372.22	367.57	372.28	0.000343	2.83	899.95	195.28	0.16
Plumtree	5209	100-YR	1529.28	361.10	372.60	368.09	372.68	0.000480	3.44	973.69	205.72	0.19
Plumtree	5209	7-30-2016	1796.61	361.10	372.84	368.43	372.95	0.000593	3.88	1024.75	213.37	0.21
Plumtree	5107	1-YR	141.98	359.92	363.10	362.50	363.58	0.010821	5.56	25.54	12.58	0.69

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5107	2-YR	211.52	359.92	363.90	363.16	364.40	0.009572	5.70	37.14	16.30	0.67
Plumtree	5107	10-YR	569.32	359.92	370.84	365.12	370.90	0.000265	2.19	393.76	215.70	0.14
Plumtree	5107	50-YR	1184.79	359.92	372.09	367.09	372.23	0.000557	3.50	600.93	275.25	0.20
Plumtree	5107	100-YR	1529.28	359.92	372.41	367.81	372.61	0.000780	4.24	666.59	298.93	0.24
Plumtree	5107	7-30-2016	1796.61	359.92	372.61	368.26	372.86	0.000963	4.77	711.75	310.48	0.27
Plumtree	5040	1-YR	141.98	359.23	362.28	361.95	362.78	0.013088	5.70	24.90	14.47	0.77
Plumtree	5040	2-YR	211.52	359.23	363.55	362.46	363.88	0.005393	4.58	46.23	19.05	0.52
Plumtree	5040	10-YR	569.32	359.23	370.82	364.24	370.88	0.000211	2.08	466.73	219.91	0.13
Plumtree	5040	50-YR	1184.79	359.23	372.07	366.10	372.19	0.000406	3.16	783.54	283.76	0.18
Plumtree	5040	100-YR	1529.28	359.23	372.39	366.85	372.55	0.000550	3.76	876.00	294.19	0.21
Plumtree	5040	7-30-2016	1796.61	359.23	372.59	367.39	372.79	0.000679	4.23	937.76	312.55	0.23
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	141.98	359.04	361.62	361.01	361.91	0.007141	4.39	32.35	18.29	0.58
Plumtree	4932	2-YR	211.52	359.04	362.51	361.43	362.79	0.004573	4.22	50.11	21.21	0.48
Plumtree	4932	10-YR	569.32	359.04	367.34	363.02	367.50	0.000709	3.29	181.85	47.33	0.22
Plumtree	4932	50-YR	1184.79	359.04	371.94	364.74	372.06	0.000323	3.15	743.00	224.54	0.17
Plumtree	4932	100-YR	1529.28	359.04	372.27	365.50	372.44	0.000456	3.82	821.13	238.72	0.20
Plumtree	4932	7-30-2016	1796.61	359.04	372.50	366.06	372.71	0.000557	4.28	875.74	242.62	0.22
Plumtree	4845	1-YR	141.98	357.81	361.38	359.79	361.52	0.002167	2.99	47.42	18.64	0.33
Plumtree	4845	2-YR	211.52	357.81	362.33	360.26	362.49	0.001897	3.19	66.22	21.01	0.32
Plumtree	4845	10-YR	569.32	357.81	367.34	361.96	367.41	0.000350	2.33	349.85	113.47	0.15
Plumtree	4845	50-YR	1184.79	357.81	371.95	364.05	372.01	0.000177	2.31	835.85	174.56	0.12
Plumtree	4845	100-YR	1529.28	357.81	372.29	365.21	372.37	0.000261	2.85	886.34	182.66	0.14
Plumtree	4845	7-30-2016	1796.61	357.81	372.51	365.64	372.62	0.000331	3.25	922.15	188.28	0.16
Plumtree	4745	1-YR	141.98	357.45	361.15		361.28	0.002562	2.89	49.10	23.31	0.35
Plumtree	4745	2-YR	211.52	357.45	362.17		362.29	0.001763	2.80	75.52	28.47	0.30
Plumtree	4745	10-YR	569.32	357.45	367.36		367.38	0.000100	1.32	860.11	246.26	0.09
Plumtree	4745	50-YR	1184.79	357.45	371.98		371.99	0.000039	1.14	2182.82	325.12	0.06
Plumtree	4745	100-YR	1529.28	357.45	372.32		372.34	0.000057	1.40	2296.88	332.20	0.07
Plumtree	4745	7-30-2016	1796.61	357.45	372.56		372.58	0.000072	1.60	2376.54	338.20	0.08
Plumtree	4636	1-YR	141.98	357.61	361.00		361.09	0.001170	2.31	61.41	22.47	0.25
Plumtree	4636	2-YR	211.52	357.61	362.05		362.15	0.000976	2.45	86.23	25.39	0.23
Plumtree	4636	10-YR	569.32	357.61	367.36		367.37	0.000062	1.14	1137.49	312.24	0.07
Plumtree	4636	50-YR	1184.79	357.61	371.98		371.98	0.000025	0.96	2926.44	517.47	0.05
Plumtree	4636	100-YR	1529.28	357.61	372.32		372.33	0.000036	1.17	3083.07	527.68	0.06
Plumtree	4636	7-30-2016	1796.61	357.61	372.56		372.57	0.000045	1.33	3191.48	534.65	0.06
Plumtree	4550	1-YR	141.98	357.24	360.89	359.02	360.98	0.001321	2.36	60.07	24.35	0.27
Plumtree	4550	2-YR	211.52	357.24	361.97	359.45	362.06	0.001038	2.38	88.82	30.40	0.24
Plumtree	4550	10-YR	569.32	357.24	367.31	361.02	367.36	0.000177	1.93	396.51	348.23	0.12
Plumtree	4550	50-YR	1184.79	357.24	371.98	362.77	371.98	0.000020	0.87	3212.05	497.16	0.04
Plumtree	4550	100-YR	1529.28	357.24	372.32	363.46	372.33	0.000029	1.07	3386.28	518.87	0.05
Plumtree	4550	7-30-2016	1796.61	357.24	372.56	363.93	372.57	0.000036	1.21	3507.50	569.11	0.06
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	141.98	351.69	359.43	354.31	359.44	0.000116	1.03	137.44	27.66	0.08
Plumtree	4344	2-YR	211.52	351.69	360.23	354.78	360.26	0.000167	1.32	160.33	28.91	0.10
Plumtree	4344	10-YR	569.32	351.69	361.85	356.32	361.96	0.000526	2.71	224.42	59.07	0.18
Plumtree	4344	50-YR	1184.79	351.69	363.15	358.17	363.45	0.001167	4.53	343.55	120.02	0.28
Plumtree	4344	100-YR	1529.28	351.69	363.72	358.97	364.11	0.001430	5.24	416.20	132.76	0.31
Plumtree	4344	7-30-2016	1796.61	351.69	364.33	359.55	364.73	0.001439	5.49	500.03	145.35	0.31
Plumtree	4289	1-YR	141.98	352.78	359.42		359.44	0.000119	0.98	144.45	33.54	0.08
Plumtree	4289	2-YR	211.52	352.78	360.23		360.25	0.000163	1.22	172.75	36.54	0.10
Plumtree	4289	10-YR	569.32	352.78	361.84		361.92	0.000456	2.39	268.63	117.51	0.17
Plumtree	4289	50-YR	1184.79	352.78	363.15		363.34	0.000848	3.72	458.17	165.60	0.24
Plumtree	4289	100-YR	1529.28	352.78	363.73		363.97	0.000980	4.21	558.85	176.54	0.26
Plumtree	4289	7-30-2016	1796.61	352.78	364.35		364.59	0.000948	4.35	670.29	191.15	0.26
Plumtree	4185	1-YR	194.00	354.77	359.13		359.37	0.004168	3.91	49.58	21.83	0.46
Plumtree	4185	2-YR	295.00	354.77	359.85		360.16	0.004244	4.45	66.28	24.22	0.47
Plumtree	4185	10-YR	741.00	354.77	361.23	360.72	361.75	0.005360	6.20	186.39	134.81	0.56
Plumtree	4185	50-YR	1395.00	354.77	362.85		363.17	0.002844	5.73	503.98	237.18	0.43
Plumtree	4185	100-YR	1765.00	354.77	363.53		363.81	0.002386	5.67	673.35	266.30	0.40
Plumtree	4185	7-30-2016	2157.00	354.77	364.19		364.44	0.002000	5.56	859.48	290.08	0.38
Plumtree	4033	1-YR	194.00	355.05	358.59		358.80	0.003219	3.69	52.60	20.78	0.41
Plumtree	4033	2-YR	295.00	355.05	359.34		359.59	0.003173	4.14	90.76	99.22	0.42
Plumtree	4033	10-YR	741.00	355.05	360.95		361.16	0.002173	4.51	323.97	176.80	0.37
Plumtree	4033	50-YR	1395.00	355.05	362.63		362.82	0.001606	4.76	696.38	290.81	0.33
Plumtree	4033	100-YR	1765.00	355.05	363.35		363.51	0.001302	4.61	913.17	308.43	0.31

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	4033	7-30-2016	2157.00	355.05	364.05		364.19	0.001106	4.52	1133.44	324.67	0.29
Plumtree	3930	1-YR	194.00	354.49	357.91	357.18	358.31	0.007228	5.04	38.76	19.95	0.60
Plumtree	3930	2-YR	295.00	354.49	358.60	357.79	359.10	0.006973	5.72	54.90	27.15	0.61
Plumtree	3930	10-YR	741.00	354.49	360.72	359.88	360.93	0.002285	4.79	348.14	200.88	0.38
Plumtree	3930	50-YR	1395.00	354.49	362.53	360.71	362.66	0.001189	4.27	749.79	240.24	0.29
Plumtree	3930	100-YR	1765.00	354.49	363.26	361.01	363.38	0.001071	4.34	929.34	254.37	0.28
Plumtree	3930	7-30-2016	2157.00	354.49	363.96	361.30	364.07	0.000969	4.39	1110.03	267.00	0.27
Plumtree	3816	1-YR	194.00	353.49	357.44	356.09	357.69	0.003718	4.05	52.55	31.80	0.43
Plumtree	3816	2-YR	295.00	353.49	358.23	356.72	358.51	0.003242	4.44	89.59	64.56	0.42
Plumtree	3816	10-YR	741.00	353.49	360.54	358.81	360.71	0.001501	4.25	366.80	160.40	0.31
Plumtree	3816	50-YR	1395.00	353.49	362.39	360.02	362.53	0.001056	4.29	699.73	212.12	0.27
Plumtree	3816	100-YR	1765.00	353.49	363.12	360.43	363.26	0.001010	4.46	835.16	226.46	0.27
Plumtree	3816	7-30-2016	2157.00	353.49	363.81	360.80	363.96	0.000979	4.63	965.21	233.53	0.27
Plumtree	3688	1-YR	194.00	352.86	357.03	355.33	357.27	0.002913	3.86	52.30	26.75	0.38
Plumtree	3688	2-YR	295.00	352.86	357.83	355.99	358.12	0.002868	4.45	85.57	56.92	0.39
Plumtree	3688	10-YR	741.00	352.86	360.30	358.41	360.51	0.001602	4.59	328.72	135.19	0.32
Plumtree	3688	50-YR	1395.00	352.86	362.18	359.76	362.37	0.001310	4.92	627.32	181.85	0.30
Plumtree	3688	100-YR	1765.00	352.86	362.92	360.27	363.11	0.001260	5.11	759.68	191.03	0.30
Plumtree	3688	7-30-2016	2157.00	352.86	363.62	360.71	363.82	0.001224	5.29	889.88	200.22	0.30
Plumtree	3550	1-YR	194.00	352.85	356.59	355.13	356.81	0.003779	3.72	52.73	26.24	0.43
Plumtree	3550	2-YR	295.00	352.85	357.47	355.87	357.71	0.002925	4.00	81.45	42.83	0.40
Plumtree	3550	10-YR	741.00	352.85	360.06	357.67	360.29	0.001523	4.32	288.27	117.95	0.32
Plumtree	3550	50-YR	1395.00	352.85	361.95	359.30	362.19	0.001318	4.86	524.35	155.83	0.31
Plumtree	3550	100-YR	1765.00	352.85	362.65	360.04	362.92	0.001369	5.25	620.56	168.72	0.32
Plumtree	3550	7-30-2016	2157.00	352.85	363.33	360.47	363.62	0.001417	5.63	716.34	186.19	0.33
Plumtree	3428	1-YR	194.00	351.86	356.15	354.43	356.39	0.003057	3.95	51.24	21.82	0.39
Plumtree	3428	2-YR	295.00	351.86	357.02	355.11	357.33	0.003184	4.55	73.72	29.36	0.41
Plumtree	3428	10-YR	741.00	351.86	359.66	357.34	360.04	0.002392	5.55	202.10	70.72	0.38
Plumtree	3428	50-YR	1395.00	351.86	361.38	359.36	361.93	0.002813	7.04	333.45	102.15	0.43
Plumtree	3428	100-YR	1765.00	351.86	361.97	360.02	362.64	0.003221	7.90	387.22	112.97	0.47
Plumtree	3428	7-30-2016	2157.00	351.86	362.57	360.65	363.32	0.003486	8.58	445.59	122.48	0.49
Plumtree	3296	1-YR	194.00	351.72	355.75		355.98	0.003120	3.85	50.42	16.51	0.39
Plumtree	3296	2-YR	295.00	351.72	356.54		356.86	0.003903	4.55	64.77	19.62	0.44
Plumtree	3296	10-YR	741.00	351.72	359.17		359.66	0.003511	5.58	138.74	42.94	0.45
Plumtree	3296	50-YR	1395.00	351.72	360.61		361.44	0.004479	7.54	246.54	105.36	0.54
Plumtree	3296	100-YR	1765.00	351.72	360.92	359.75	362.03	0.005803	8.86	280.44	117.06	0.62
Plumtree	3296	7-30-2016	2157.00	351.72	361.20	360.77	362.62	0.007125	10.11	315.47	128.11	0.69
Plumtree	3179	1-YR	194.00	350.39	355.46	353.81	355.60	0.002853	3.05	63.53	28.81	0.36
Plumtree	3179	2-YR	295.00	350.39	356.22	354.39	356.38	0.003535	3.18	92.78	49.06	0.41
Plumtree	3179	10-YR	741.00	350.39	359.25	356.25	359.37	0.000821	2.86	320.16	124.48	0.23
Plumtree	3179	50-YR	1395.00	350.39	360.86	357.30	361.04	0.000939	3.70	509.99	159.31	0.25
Plumtree	3179	100-YR	1765.00	350.39	361.26	357.85	361.51	0.001177	4.31	560.69	164.61	0.29
Plumtree	3179	7-30-2016	2157.00	350.39	361.66	358.38	361.97	0.001402	4.88	611.69	169.81	0.32
Plumtree	3077	1-YR	194.00	350.72	355.09		355.27	0.003712	3.37	59.60	65.72	0.42
Plumtree	3077	2-YR	295.00	350.72	355.99		356.11	0.001865	3.00	146.99	120.83	0.31
Plumtree	3077	10-YR	741.00	350.72	359.26		359.30	0.000301	2.01	691.71	191.49	0.14
Plumtree	3077	50-YR	1395.00	350.72	360.88		360.94	0.000393	2.68	1024.49	230.37	0.17
Plumtree	3077	100-YR	1765.00	350.72	361.30		361.38	0.000499	3.13	1123.79	241.30	0.19
Plumtree	3077	7-30-2016	2157.00	350.72	361.72		361.82	0.000597	3.54	1226.76	251.83	0.21
Plumtree	2978	1-YR	194.00	350.53	354.72	352.93	354.91	0.003428	3.56	54.56	22.85	0.41
Plumtree	2978	2-YR	295.00	350.53	355.66	353.66	355.88	0.002916	3.71	80.45	32.70	0.39
Plumtree	2978	10-YR	741.00	350.53	359.07	355.64	359.24	0.000935	3.52	292.37	89.36	0.25
Plumtree	2978	50-YR	1395.00	350.53	360.58	357.37	360.86	0.001268	4.75	479.28	152.96	0.30
Plumtree	2978	100-YR	1765.00	350.53	360.90	357.99	361.27	0.001683	5.62	529.08	162.80	0.35
Plumtree	2978	7-30-2016	2157.00	350.53	361.21	358.59	361.68	0.002088	6.42	579.74	164.06	0.39
Plumtree	2917	1-YR	194.00	350.36	354.47	352.82	354.70	0.003637	3.82	50.85	19.74	0.42
Plumtree	2917	2-YR	295.00	350.36	355.42	353.56	355.67	0.003963	4.02	73.47	29.70	0.45
Plumtree	2917	10-YR	741.00	350.36	359.01	355.69	359.18	0.000949	3.48	276.73	176.96	0.25
Plumtree	2917	50-YR	1395.00	350.36	360.58	357.13	360.76	0.000952	4.08	685.37	268.01	0.26
Plumtree	2917	100-YR	1765.00	350.36	360.91	357.92	361.14	0.001198	4.71	776.16	285.43	0.30
Plumtree	2917	7-30-2016	2157.00	350.36	361.24	358.60	361.52	0.001413	5.26	873.48	302.99	0.33
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	194.00	350.08	354.23	353.52	354.48	0.007196	4.05	48.48	35.30	0.57
Plumtree	2827	2-YR	295.00	350.08	354.88	354.06	355.15	0.005011	4.22	74.03	58.20	0.51
Plumtree	2827	10-YR	741.00	350.08	356.04	355.31	356.68	0.006890	6.60	127.69	123.18	0.64
Plumtree	2827	50-YR	1395.00	350.08	357.25	356.57	357.76	0.004757	6.74	366.06	167.47	0.56

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	2827	100-YR	1765.00	350.08	357.71	356.93	358.27	0.004799	7.23	447.05	180.62	0.57
Plumtree	2827	7-30-2016	2157.00	350.08	358.17	357.31	358.75	0.004711	7.59	532.77	191.93	0.57
Plumtree	2759	1-YR	194.00	349.32	354.01		354.20	0.002303	3.53	60.63	38.10	0.32
Plumtree	2759	2-YR	295.00	349.32	354.65		354.90	0.002644	4.21	105.51	102.66	0.36
Plumtree	2759	10-YR	741.00	349.32	355.89		356.20	0.003356	5.61	292.40	183.88	0.42
Plumtree	2759	50-YR	1395.00	349.32	357.12		357.39	0.002978	6.04	552.04	234.40	0.41
Plumtree	2759	100-YR	1765.00	349.32	357.60		357.88	0.002992	6.34	669.71	251.48	0.41
Plumtree	2759	7-30-2016	2157.00	349.32	358.08		358.35	0.002928	6.54	793.97	267.31	0.41
Plumtree	2589	1-YR	194.00	349.71	353.61		353.74	0.002925	3.59	99.38	67.53	0.36
Plumtree	2589	2-YR	295.00	349.71	354.29		354.42	0.002643	3.83	157.33	107.81	0.35
Plumtree	2589	10-YR	741.00	349.71	355.38		355.57	0.003679	5.37	303.05	153.99	0.43
Plumtree	2589	50-YR	1395.00	349.71	356.49		356.77	0.004617	6.91	508.37	230.38	0.50
Plumtree	2589	100-YR	1765.00	349.71	357.03		357.28	0.004134	6.92	635.35	247.37	0.48
Plumtree	2589	7-30-2016	2157.00	349.71	357.55		357.79	0.003720	6.92	769.08	263.57	0.46
Plumtree	2485	1-YR	194.00	349.20	352.27	352.17	353.06	0.016590	7.27	30.07	22.59	0.85
Plumtree	2485	2-YR	295.00	349.20	352.96	352.80	353.81	0.013429	7.80	51.13	38.34	0.80
Plumtree	2485	10-YR	741.00	349.20	354.61		355.05	0.006343	7.21	240.23	152.00	0.59
Plumtree	2485	50-YR	1395.00	349.20	355.97		356.29	0.004374	7.11	476.91	195.79	0.51
Plumtree	2485	100-YR	1765.00	349.20	356.57		356.86	0.003799	7.06	596.21	203.74	0.49
Plumtree	2485	7-30-2016	2157.00	349.20	357.13		357.41	0.003453	7.11	712.00	210.83	0.47
Plumtree	2331	1-YR	194.00	348.10	351.56		351.81	0.003863	4.04	48.42	21.42	0.45
Plumtree	2331	2-YR	295.00	348.10	352.38		352.69	0.003579	4.54	73.39	64.53	0.45
Plumtree	2331	10-YR	741.00	348.10	353.98		354.35	0.003255	5.66	239.48	125.68	0.45
Plumtree	2331	50-YR	1395.00	348.10	355.28		355.71	0.003258	6.65	418.02	148.91	0.47
Plumtree	2331	100-YR	1765.00	348.10	355.84		356.30	0.003329	7.12	504.14	159.72	0.49
Plumtree	2331	7-30-2016	2157.00	348.10	356.39		356.87	0.003306	7.48	594.77	169.96	0.49
Plumtree	2153	1-YR	194.00	346.39	351.13		351.30	0.002037	3.41	61.97	21.90	0.30
Plumtree	2153	2-YR	295.00	346.39	351.90		352.15	0.002475	4.11	100.30	73.87	0.33
Plumtree	2153	10-YR	741.00	346.39	353.46		353.77	0.003077	5.44	257.98	122.71	0.38
Plumtree	2153	50-YR	1395.00	346.39	354.74		355.09	0.003391	6.47	429.96	142.84	0.42
Plumtree	2153	100-YR	1765.00	346.39	355.28		355.67	0.003548	6.93	509.05	149.50	0.43
Plumtree	2153	7-30-2016	2157.00	346.39	355.83		356.23	0.003575	7.27	593.34	156.45	0.44
Plumtree	1994	1-YR	194.00	346.45	350.69		350.92	0.002877	3.81	53.72	27.63	0.37
Plumtree	1994	2-YR	295.00	346.45	351.33		351.66	0.003627	4.72	79.90	81.53	0.42
Plumtree	1994	10-YR	741.00	346.45	352.86		353.23	0.003655	5.90	246.07	133.39	0.45
Plumtree	1994	50-YR	1395.00	346.45	354.14		354.53	0.003654	6.79	442.60	171.19	0.46
Plumtree	1994	100-YR	1765.00	346.45	354.72		355.11	0.003450	6.97	544.64	176.56	0.45
Plumtree	1994	7-30-2016	2157.00	346.45	355.30		355.68	0.003318	7.19	649.26	188.61	0.45
Plumtree	1888	1-YR	194.00	345.73	350.34	348.84	350.59	0.003215	4.17	62.39	49.34	0.40
Plumtree	1888	2-YR	295.00	345.73	351.00	349.69	351.29	0.003216	4.71	102.75	73.28	0.42
Plumtree	1888	10-YR	741.00	345.73	352.55	351.73	352.85	0.003116	5.77	278.83	135.25	0.43
Plumtree	1888	50-YR	1395.00	345.73	353.80	352.63	354.15	0.003278	6.79	464.37	160.47	0.46
Plumtree	1888	100-YR	1765.00	345.73	354.38	353.02	354.74	0.003247	7.14	560.70	170.01	0.46
Plumtree	1888	7-30-2016	2157.00	345.73	354.96	353.34	355.33	0.003190	7.44	661.28	180.95	0.47
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	194.00	346.61	350.25		350.35	0.001595	2.87	108.32	72.27	0.29
Plumtree	1830	2-YR	295.00	346.61	350.92		351.02	0.001553	3.13	163.67	98.15	0.30
Plumtree	1830	10-YR	741.00	346.61	352.47		352.60	0.001499	3.92	375.28	152.68	0.31
Plumtree	1830	50-YR	1395.00	346.61	353.67		353.86	0.001791	4.96	562.31	157.05	0.35
Plumtree	1830	100-YR	1765.00	346.61	354.21		354.42	0.001949	5.47	646.65	160.33	0.37
Plumtree	1830	7-30-2016	2157.00	346.61	354.74		354.99	0.002076	5.94	733.31	165.72	0.39
Plumtree	1641	1-YR	194.00	345.19	349.67		349.90	0.003214	4.03	60.67	31.21	0.39
Plumtree	1641	2-YR	295.00	345.19	350.10		350.47	0.004626	5.24	79.12	65.80	0.48
Plumtree	1641	10-YR	741.00	345.19	351.34		351.94	0.006536	7.53	195.70	116.71	0.60
Plumtree	1641	50-YR	1395.00	345.19	352.60		353.18	0.005962	8.36	365.80	148.16	0.59
Plumtree	1641	100-YR	1765.00	345.19	353.18		353.74	0.005567	8.58	455.21	157.83	0.58
Plumtree	1641	7-30-2016	2157.00	345.19	353.80		354.33	0.004984	8.60	556.44	167.82	0.56
Plumtree	1463	1-YR	194.00	343.35	349.50		349.57	0.000925	2.19	108.95	98.09	0.22
Plumtree	1463	2-YR	295.00	343.35	349.89		350.00	0.001284	2.79	151.37	117.70	0.26
Plumtree	1463	10-YR	741.00	343.35	350.98		351.20	0.002198	4.35	296.10	147.91	0.35
Plumtree	1463	50-YR	1395.00	343.35	352.13		352.42	0.002596	5.46	484.84	181.84	0.40
Plumtree	1463	100-YR	1765.00	343.35	352.72		353.03	0.002525	5.74	596.80	195.20	0.40
Plumtree	1463	7-30-2016	2157.00	343.35	353.39		353.69	0.002250	5.80	732.26	206.47	0.38
Plumtree	1291	1-YR	408.00	344.26	349.04		349.21	0.003520	4.08	193.90	220.05	0.41
Plumtree	1291	2-YR	581.00	344.26	349.38		349.56	0.003912	4.59	270.83	239.14	0.44
Plumtree	1291	10-YR	1316.00	344.26	350.50		350.68	0.003558	5.29	588.35	314.30	0.44

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	1291	50-YR	2351.00	344.26	351.76		351.92	0.002747	5.47	1032.24	396.89	0.40
Plumtree	1291	100-YR	2995.00	344.26	352.42		352.57	0.002276	5.35	1304.94	413.55	0.37
Plumtree	1291	7-30-2016	3782.00	344.26	353.15		353.29	0.001931	5.29	1608.39	422.07	0.35
Plumtree	1124	1-YR	408.00	343.58	348.35		348.57	0.004100	4.55	207.91	243.41	0.46
Plumtree	1124	2-YR	581.00	343.58	348.81		348.96	0.003188	4.30	323.04	261.49	0.41
Plumtree	1124	10-YR	1316.00	343.58	350.07		350.19	0.002297	4.40	663.42	281.73	0.36
Plumtree	1124	50-YR	2351.00	343.58	351.41		351.53	0.001865	4.71	1061.23	311.21	0.34
Plumtree	1124	100-YR	2995.00	343.58	352.10		352.23	0.001742	4.91	1282.29	325.49	0.34
Plumtree	1124	7-30-2016	3782.00	343.58	352.85		352.99	0.001658	5.14	1529.32	337.57	0.33
Plumtree	994	1-YR	408.00	342.85	347.96		348.08	0.003020	3.47	217.30	183.00	0.39
Plumtree	994	2-YR	581.00	342.85	348.47		348.58	0.002459	3.40	320.58	206.46	0.36
Plumtree	994	10-YR	1316.00	342.85	349.75		349.89	0.002182	4.09	602.67	235.38	0.36
Plumtree	994	50-YR	2351.00	342.85	351.11		351.28	0.001954	4.70	947.57	271.54	0.36
Plumtree	994	100-YR	2995.00	342.85	351.81		351.99	0.001883	5.01	1142.33	288.19	0.36
Plumtree	994	7-30-2016	3782.00	342.85	352.55		352.75	0.001825	5.33	1363.37	303.86	0.36
Plumtree	911	1-YR	408.00	342.92	347.65		347.82	0.003134	4.12	214.38	193.54	0.40
Plumtree	911	2-YR	581.00	342.92	348.27		348.39	0.002179	3.76	340.95	213.59	0.34
Plumtree	911	10-YR	1316.00	342.92	349.59		349.71	0.002009	4.41	638.16	239.09	0.35
Plumtree	911	50-YR	2351.00	342.92	350.96		351.11	0.001899	5.04	992.45	273.53	0.35
Plumtree	911	100-YR	2995.00	342.92	351.66		351.83	0.001852	5.33	1190.22	288.71	0.35
Plumtree	911	7-30-2016	3782.00	342.92	352.42		352.60	0.001816	5.65	1413.08	303.31	0.36
Plumtree	762	1-YR	408.00	342.54	347.00		347.27	0.004547	4.67	123.45	66.72	0.49
Plumtree	762	2-YR	581.00	342.54	347.52		347.89	0.005296	5.60	187.98	161.19	0.55
Plumtree	762	10-YR	1316.00	342.54	349.12		349.36	0.002899	5.41	528.88	242.04	0.43
Plumtree	762	50-YR	2351.00	342.54	350.58		350.81	0.002265	5.70	912.56	281.55	0.40
Plumtree	762	100-YR	2995.00	342.54	351.31		351.54	0.002109	5.91	1124.41	300.48	0.39
Plumtree	762	7-30-2016	3782.00	342.54	352.09		352.32	0.001979	6.14	1363.28	314.67	0.39
Plumtree	658	1-YR	408.00	340.20	346.92		347.04	0.000944	2.81	191.04	174.69	0.24
Plumtree	658	2-YR	581.00	340.20	347.48		347.62	0.001039	3.21	302.33	225.88	0.26
Plumtree	658	10-YR	1316.00	340.20	349.02		349.16	0.001028	3.84	730.33	301.02	0.27
Plumtree	658	50-YR	2351.00	340.20	350.49		350.64	0.000974	4.29	1193.92	328.76	0.27
Plumtree	658	100-YR	2995.00	340.20	351.22		351.38	0.000975	4.56	1438.89	345.31	0.27
Plumtree	658	7-30-2016	3782.00	340.20	351.99		352.16	0.000985	4.86	1712.84	363.75	0.28
Plumtree	526	1-YR	408.00	341.63	346.78		346.90	0.001213	2.99	267.08	264.39	0.26
Plumtree	526	2-YR	581.00	341.63	347.38		347.47	0.000981	2.94	428.28	278.77	0.24
Plumtree	526	10-YR	1316.00	341.63	348.94		349.02	0.000822	3.28	891.18	311.73	0.23
Plumtree	526	50-YR	2351.00	341.63	350.41		350.50	0.000804	3.74	1371.74	340.24	0.24
Plumtree	526	100-YR	2995.00	341.63	351.14		351.24	0.000812	3.99	1623.66	352.63	0.24
Plumtree	526	7-30-2016	3782.00	341.63	351.91		352.02	0.000828	4.27	1900.65	365.72	0.25
Plumtree	380	1-YR	408.00	341.92	346.39		346.63	0.002737	4.07	136.63	138.10	0.39
Plumtree	380	2-YR	581.00	341.92	347.04	345.26	347.25	0.002220	4.07	255.23	192.08	0.36
Plumtree	380	10-YR	1316.00	341.92	348.66		348.84	0.001693	4.47	590.20	219.66	0.33
Plumtree	380	50-YR	2351.00	341.92	350.13		350.33	0.001622	5.11	923.92	236.20	0.34
Plumtree	380	100-YR	2995.00	341.92	350.84		351.06	0.001632	5.46	1094.45	241.67	0.35
Plumtree	380	7-30-2016	3782.00	341.92	351.59		351.84	0.001669	5.88	1277.89	247.14	0.36
Plumtree	146	1-YR	408.00	340.73	343.98	343.98	345.17	0.019904	8.74	46.70	19.97	1.01
Plumtree	146	2-YR	581.00	340.73	344.79	344.79	346.05	0.015184	9.06	69.34	43.36	0.92
Plumtree	146	10-YR	1316.00	340.73	346.75	346.75	347.96	0.009277	9.88	226.83	111.86	0.78
Plumtree	146	50-YR	2351.00	340.73	348.05	348.05	349.45	0.009370	11.57	391.46	141.74	0.81
Plumtree	146	100-YR	2995.00	340.73	348.63	348.63	350.16	0.009716	12.50	477.06	153.62	0.84
Plumtree	146	7-30-2016	3782.00	340.73	349.23	349.23	350.91	0.010101	13.47	572.07	164.30	0.87
Plumtree	63	1-YR	408.00	340.00	343.55	342.21	343.79	0.003500	3.88	105.20	43.59	0.44
Plumtree	63	2-YR	581.00	340.00	344.18	342.75	344.47	0.003507	4.34	134.25	50.01	0.45
Plumtree	63	10-YR	1316.00	340.00	345.91	344.22	346.45	0.003506	5.95	247.64	84.16	0.49
Plumtree	63	50-YR	2351.00	340.00	347.54	345.72	348.29	0.003501	7.28	427.06	127.03	0.52
Plumtree	63	100-YR	2995.00	340.00	348.33	346.61	349.17	0.003500	7.89	532.16	139.56	0.53
Plumtree	63	7-30-2016	3782.00	340.00	349.16	347.39	350.11	0.003503	8.50	652.88	150.66	0.54

HEC-RAS Plan: C River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	10286	1-YR	396.90	396.81	0.09	2.35	0.01	2.21	100.81	119.97	150.01	0.48
Plumtree	10286	2-YR	397.10	396.98	0.12	2.33	0.01	4.42	135.53	167.05	154.15	0.59
Plumtree	10286	10-YR	397.76	397.61	0.15	2.52	0.03	19.19	248.06	328.76	169.55	0.71
Plumtree	10286	50-YR	398.27	398.01	0.26	2.49	0.01	43.78	402.92	548.31	179.33	1.14
Plumtree	10286	100-YR	398.46	398.12	0.34	2.39	0.00	57.95	481.79	660.25	180.10	1.46
Plumtree	10286	7-30-2016	398.58	398.20	0.38	2.30	0.02	68.34	532.05	732.61	180.66	1.64
Plumtree	10044	1-YR	394.55	394.38	0.18	2.60	0.01		152.30	70.70	160.05	0.73
Plumtree	10044	2-YR	394.76	394.57	0.19	2.43	0.01		195.94	111.06	181.74	0.80
Plumtree	10044	10-YR	395.21	394.81	0.41	0.61	0.10	0.00	352.99	243.01	200.40	1.68
Plumtree	10044	50-YR	395.77	395.39	0.38	0.37	0.10	0.61	514.78	479.61	234.35	1.57
Plumtree	10044	100-YR	396.07	395.74	0.34	0.37	0.08	1.81	583.55	614.64	255.67	1.37
Plumtree	10044	7-30-2016	396.26	395.95	0.32	0.37	0.07	2.89	627.52	702.59	268.46	1.29
Plumtree	9814	1-YR	391.94	391.65	0.29	0.64	0.02		223.00		43.53	0.79
Plumtree	9814	2-YR	392.32	392.01	0.31	0.55	0.01	0.00	307.00		52.13	0.83
Plumtree	9814	10-YR	394.04	393.97	0.08	0.04	0.01	25.02	446.62	124.36	272.22	0.20
Plumtree	9814	50-YR	395.30	395.24	0.06	0.03	0.00	75.79	606.58	312.63	304.39	0.16
Plumtree	9814	100-YR	395.62	395.55	0.07	0.03	0.00	98.45	706.39	395.16	315.10	0.19
Plumtree	9814	7-30-2016	395.82	395.75	0.07	0.03	0.00	113.34	765.72	453.95	317.79	0.20
Plumtree	9762	1-YR	391.29	390.84	0.45	0.16	0.09		223.00		30.27	1.18
Plumtree	9762	2-YR	391.76	391.35	0.41	0.15	0.07		303.99	3.01	69.10	1.05
Plumtree	9762	10-YR	394.00	393.94	0.05	0.02	0.01	13.36	401.79	180.85	228.01	0.14
Plumtree	9762	50-YR	395.27	395.21	0.06	0.02	0.01	47.85	598.78	348.37	286.89	0.16
Plumtree	9762	100-YR	395.59	395.52	0.07	0.02	0.01	63.60	697.60	438.80	322.86	0.19
Plumtree	9762	7-30-2016	395.79	395.71	0.08	0.02	0.01	76.36	777.04	479.60	331.68	0.22
Plumtree	9732	1-YR	391.03	390.89	0.15				223.00		34.50	0.34
Plumtree	9732	2-YR	391.54	391.35	0.19				307.00		37.47	0.41
Plumtree	9732	10-YR	393.96	393.80	0.16			3.48	589.52	2.99	166.87	0.28
Plumtree	9732	50-YR	395.24	395.11	0.14			35.62	777.35	182.03	223.95	0.28
Plumtree	9732	100-YR	395.56	395.40	0.16			49.77	900.87	249.35	235.24	0.33
Plumtree	9732	7-30-2016	395.76	395.59	0.17			60.62	974.97	297.41	241.96	0.37
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	389.52	389.31	0.21	0.36	0.02	0.20	222.44	0.37	35.83	0.49
Plumtree	9589	2-YR	390.20	389.99	0.21	0.26	0.02	1.69	303.05	2.26	43.20	0.46
Plumtree	9589	10-YR	391.43	391.04	0.39	0.26	0.09	6.73	579.96	9.31	63.32	0.76
Plumtree	9589	50-YR	392.59	392.07	0.52	0.25	0.15	71.72	891.33	31.95	135.97	1.01
Plumtree	9589	100-YR	393.12	392.60	0.52	0.23	0.14	109.22	1018.77	72.02	245.13	1.03
Plumtree	9589	7-30-2016	393.38	392.89	0.49	0.22	0.12	135.67	1074.75	122.59	267.37	1.01
Plumtree	9499	1-YR	389.15	388.97	0.18	0.44	0.01		186.11	17.89	50.97	0.45
Plumtree	9499	2-YR	389.92	389.75	0.17	0.44	0.04	0.93	271.86	48.21	124.78	0.44
Plumtree	9499	10-YR	391.08	390.88	0.20	0.31	0.01	83.22	476.71	159.07	158.77	0.56
Plumtree	9499	50-YR	392.20	391.97	0.23	0.26	0.00	241.62	702.09	319.29	171.09	0.65
Plumtree	9499	100-YR	392.74	392.51	0.24	0.25	0.00	342.65	822.44	412.91	175.97	0.70
Plumtree	9499	7-30-2016	393.03	392.79	0.25	0.25	0.00	401.05	889.30	466.65	178.49	0.72
Plumtree	9398	1-YR	388.70	388.37	0.32	0.34	0.03		204.00		15.87	0.70
Plumtree	9398	2-YR	389.45	388.92	0.53	0.52	0.04	3.60	316.02	1.38	97.70	1.12
Plumtree	9398	10-YR	390.76	390.45	0.31	0.53	0.06	157.50	444.27	117.23	167.13	0.89
Plumtree	9398	50-YR	391.93	391.67	0.26	0.48	0.09	396.08	581.21	285.71	182.79	0.89
Plumtree	9398	100-YR	392.49	392.22	0.27	0.48	0.10	541.61	663.78	372.61	192.69	0.94
Plumtree	9398	7-30-2016	392.78	392.51	0.27	0.48	0.11	624.90	706.22	425.88	196.97	0.96
Plumtree	9301	1-YR	388.33	388.11	0.22	0.49	0.02	6.54	197.46		32.60	0.46
Plumtree	9301	2-YR	388.89	388.50	0.39	0.69	0.01	18.16	300.68	2.16	69.83	0.83
Plumtree	9301	10-YR	390.17	389.23	0.94	0.82	0.18	67.49	595.00	56.51	91.28	2.11
Plumtree	9301	50-YR	391.36	390.17	1.19	0.82	0.25	159.72	881.60	221.69	100.36	2.94
Plumtree	9301	100-YR	391.91	390.59	1.32	0.82	0.28	218.07	1030.05	329.88	104.50	3.34
Plumtree	9301	7-30-2016	392.19	390.79	1.40	0.83	0.30	251.64	1114.14	391.22	106.44	3.61
Plumtree	9196	1-YR	387.81	387.40	0.42	0.89	0.09	21.05	181.15	1.80	107.80	1.13
Plumtree	9196	2-YR	388.20	387.74	0.46	0.95	0.09	70.58	241.26	9.16	121.59	1.38
Plumtree	9196	10-YR	389.17	388.82	0.34	0.95	0.03	283.70	363.76	71.53	143.82	1.26
Plumtree	9196	50-YR	390.16	389.79	0.37	1.02	0.01	567.90	521.03	174.06	154.81	1.43
Plumtree	9196	100-YR	390.64	390.24	0.39	1.05	0.00	735.39	607.63	234.98	159.38	1.54
Plumtree	9196	7-30-2016	390.89	390.48	0.41	1.07	0.00	831.04	655.76	270.20	161.92	1.59
Plumtree	8987	1-YR	386.67	386.54	0.13	0.98	0.03	16.01	152.73	35.26	115.30	0.37
Plumtree	8987	2-YR	387.15	387.00	0.15	1.05	0.03	36.74	203.26	81.00	121.03	0.47
Plumtree	8987	10-YR	388.19	387.95	0.23	1.10	0.01	116.82	356.06	246.12	132.81	0.80
Plumtree	8987	50-YR	389.13	388.79	0.34	1.03	0.03	243.69	538.75	480.56	141.71	1.22
Plumtree	8987	100-YR	389.58	389.19	0.39	0.98	0.05	323.10	636.32	618.58	145.45	1.43
Plumtree	8987	7-30-2016	389.82	389.40	0.42	0.95	0.06	369.48	689.99	697.53	147.40	1.54
Plumtree	8753	1-YR	385.66	385.24	0.42	1.15	0.07	44.58	157.65	1.76	79.52	1.22

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	8753	2-YR	386.06	385.62	0.45	1.05	0.08	109.65	203.90	7.45	87.32	1.46
Plumtree	8753	10-YR	387.08	386.73	0.35	0.85	0.04	388.16	295.62	35.22	174.86	1.42
Plumtree	8753	50-YR	388.07	387.83	0.24	0.72	0.00	838.10	358.54	66.36	231.04	1.17
Plumtree	8753	100-YR	388.55	388.33	0.22	0.67	0.01	1114.25	384.34	79.40	245.93	1.08
Plumtree	8753	7-30-2016	388.80	388.59	0.21	0.64	0.01	1259.31	397.65	100.04	251.24	1.04
Plumtree	8579	1-YR	384.40	384.21	0.19	0.49	0.03	52.18	145.55	6.26	90.48	0.60
Plumtree	8579	2-YR	384.94	384.75	0.19	0.51	0.02	108.00	190.09	22.91	101.78	0.62
Plumtree	8579	10-YR	386.19	385.97	0.22	0.57	0.01	294.81	326.95	97.24	121.09	0.80
Plumtree	8579	50-YR	387.34	387.05	0.29	0.67	0.00	554.02	500.11	208.87	143.41	1.08
Plumtree	8579	100-YR	387.87	387.55	0.33	0.71	0.00	703.84	588.35	285.81	151.07	1.20
Plumtree	8579	7-30-2016	388.15	387.81	0.34	0.72	0.00	791.63	635.54	329.83	154.43	1.26
Plumtree	8374	1-YR	383.88	383.79	0.09	0.45	0.04	54.74	149.26		87.23	0.24
Plumtree	8374	2-YR	384.40	384.29	0.11	0.48	0.03	112.10	208.90		94.20	0.33
Plumtree	8374	10-YR	385.60	385.42	0.19	0.58	0.03	329.51	388.54	0.96	111.54	0.57
Plumtree	8374	50-YR	386.67	386.39	0.29	0.67	0.03	646.21	607.80	9.00	123.87	0.88
Plumtree	8374	100-YR	387.17	386.83	0.34	0.71	0.03	834.08	727.45	16.47	130.00	1.05
Plumtree	8374	7-30-2016	387.42	387.05	0.37	0.74	0.03	941.50	793.82	21.68	133.64	1.14
Plumtree	8229	1-YR	383.38	382.85	0.53	1.17	0.04	31.07	165.38	7.55	65.24	1.44
Plumtree	8229	2-YR	383.89	383.45	0.44	1.22	0.02	87.03	206.90	27.07	86.73	1.37
Plumtree	8229	10-YR	385.00	384.50	0.50	1.29	0.02	267.02	335.99	115.98	116.52	1.84
Plumtree	8229	50-YR	385.97	385.40	0.57	1.39	0.03	519.16	473.34	270.50	136.34	2.30
Plumtree	8229	100-YR	386.43	385.82	0.61	1.44	0.03	668.78	542.25	366.97	142.15	2.51
Plumtree	8229	7-30-2016	386.65	386.02	0.64	1.46	0.03	753.29	582.19	421.52	144.93	2.67
Plumtree	8094	1-YR	382.12	381.72	0.40	0.90	0.09	12.66	189.37	1.97	63.21	0.98
Plumtree	8094	2-YR	382.66	382.06	0.59	1.08	0.14	38.77	271.27	10.95	93.32	1.51
Plumtree	8094	10-YR	383.69	382.97	0.72	1.26	0.16	165.12	445.07	108.81	125.63	2.22
Plumtree	8094	50-YR	384.56	383.69	0.87	1.39	0.19	351.85	630.88	280.28	145.63	3.00
Plumtree	8094	100-YR	384.96	384.01	0.95	1.44	0.20	461.02	727.35	389.63	153.05	3.42
Plumtree	8094	7-30-2016	385.16	384.19	0.97	1.45	0.20	527.26	774.79	454.95	157.07	3.56
Plumtree	7954	1-YR	381.13	381.03	0.10	1.20	0.01	84.35	76.38	43.27	155.83	0.58
Plumtree	7954	2-YR	381.43	381.31	0.12	1.25	0.01	135.00	100.37	85.63	160.64	0.72
Plumtree	7954	10-YR	382.18	382.00	0.18	1.31	0.01	301.72	173.20	244.08	176.81	1.12
Plumtree	7954	50-YR	382.91	382.67	0.24	1.32	0.01	547.71	255.57	459.72	187.44	1.49
Plumtree	7954	100-YR	383.28	383.00	0.27	1.31	0.01	692.79	299.98	585.23	192.59	1.66
Plumtree	7954	7-30-2016	383.47	383.18	0.29	1.30	0.01	776.04	324.42	656.54	195.27	1.75
Plumtree	7800	1-YR	379.92	379.84	0.08	1.26	0.01	47.75	51.02	105.23	173.24	0.64
Plumtree	7800	2-YR	380.17	380.07	0.10	1.20	0.02	79.11	73.26	168.63	178.65	0.79
Plumtree	7800	10-YR	380.86	380.70	0.16	1.12	0.03	194.61	142.33	382.06	188.79	1.10
Plumtree	7800	50-YR	381.59	381.37	0.22	1.02	0.05	361.07	231.63	670.29	199.56	1.39
Plumtree	7800	100-YR	381.96	381.71	0.25	1.00	0.05	460.88	281.70	835.42	204.98	1.53
Plumtree	7800	7-30-2016	382.16	381.90	0.26	0.97	0.06	518.74	309.61	928.65	207.97	1.59
Plumtree	7548	1-YR	378.65	378.60	0.05	0.91	0.00	45.78	61.92	96.30	273.00	0.33
Plumtree	7548	2-YR	378.95	378.91	0.05	0.87	0.00	103.55	74.97	142.48	279.96	0.35
Plumtree	7548	10-YR	379.71	379.66	0.06	0.74	0.00	317.31	114.22	287.47	298.31	0.44
Plumtree	7548	50-YR	380.53	380.46	0.07	0.59	0.00	625.55	158.37	479.08	312.92	0.49
Plumtree	7548	100-YR	380.90	380.83	0.07	0.51	0.00	805.00	183.23	589.77	317.86	0.54
Plumtree	7548	7-30-2016	381.13	381.05	0.08	0.45	0.01	909.20	196.00	651.80	320.79	0.55
Plumtree	7367	1-YR	377.74	377.68	0.06	0.61	0.01	0.59		203.41	116.77	
Plumtree	7367	2-YR	378.08	378.00	0.08	0.64	0.01	8.21		312.79	149.00	
Plumtree	7367	10-YR	378.97	378.88	0.09	0.38	0.01	88.48	2.79	627.73	228.16	0.15
Plumtree	7367	50-YR	379.94	379.87	0.07	0.29	0.00	280.68	27.47	954.85	396.98	0.30
Plumtree	7367	100-YR	380.39	380.33	0.06	0.26	0.00	420.67	43.31	1114.02	407.38	0.31
Plumtree	7367	7-30-2016	380.67	380.61	0.06	0.23	0.00	502.91	52.59	1201.50	412.40	0.31
Plumtree	7216	1-YR	377.12	377.08	0.04	0.83	0.02	57.16	127.66	19.18	193.43	0.15
Plumtree	7216	2-YR	377.43	377.38	0.05	0.92	0.03	92.39	190.89	37.72	210.45	0.20
Plumtree	7216	10-YR	378.59	378.53	0.06	0.23	0.00	221.92	368.53	128.55	261.16	0.20
Plumtree	7216	50-YR	379.65	379.58	0.07	0.21	0.00	406.90	591.47	264.63	294.34	0.23
Plumtree	7216	100-YR	380.14	380.06	0.08	0.21	0.00	519.00	715.06	343.94	308.31	0.25
Plumtree	7216	7-30-2016	380.44	380.36	0.08	0.20	0.00	589.40	779.03	388.57	314.72	0.26
Plumtree	7030	1-YR	376.26	376.00	0.26	1.15	0.02	112.49	83.91	7.60	152.85	1.47
Plumtree	7030	2-YR	376.50	376.17	0.32	1.11	0.04	195.29	109.54	16.17	158.76	1.98
Plumtree	7030	10-YR	378.36	378.32	0.04	0.07	0.01	506.60	100.05	112.35	219.21	0.27
Plumtree	7030	50-YR	379.44	379.39	0.05	0.09	0.00	889.35	148.44	225.20	233.34	0.34
Plumtree	7030	100-YR	379.92	379.86	0.06	0.10	0.00	1120.13	177.28	280.59	243.88	0.40
Plumtree	7030	7-30-2016	380.23	380.17	0.07	0.10	0.00	1253.43	193.52	310.05	254.82	0.42
Plumtree	6893	1-YR	374.35	374.15	0.19	0.63	0.00	46.76	154.79	2.45	107.65	0.59
Plumtree	6893	2-YR	374.81	374.62	0.19	0.43	0.02	109.96	203.32	7.71	126.53	0.62
Plumtree	6893	10-YR	378.28	378.26	0.02	0.03	0.00	404.23	227.70	87.06	224.85	0.09
Plumtree	6893	50-YR	379.35	379.31	0.04	0.04	0.00	735.51	360.16	167.33	244.77	0.16

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	6893	100-YR	379.82	379.77	0.05	0.05	0.00	929.43	432.65	215.92	253.44	0.20
Plumtree	6893	7-30-2016	380.13	380.07	0.06	0.05	0.00	1041.91	470.09	245.00	258.98	0.22
Plumtree	6766	1-YR	373.71	373.53	0.18	0.35	0.00	34.27	169.28	0.45	96.80	0.52
Plumtree	6766	2-YR	374.36	374.23	0.13	0.23	0.00	99.06	217.31	4.63	115.09	0.40
Plumtree	6766	10-YR	378.25	378.24	0.02	0.02	0.00	355.28	268.50	95.22	269.27	0.07
Plumtree	6766	50-YR	379.30	379.27	0.03	0.02	0.00	631.13	434.25	197.63	318.24	0.12
Plumtree	6766	100-YR	379.77	379.73	0.04	0.03	0.00	801.92	522.93	253.15	342.59	0.15
Plumtree	6766	7-30-2016	380.07	380.03	0.05	0.03	0.00	893.65	565.56	297.79	353.55	0.16
Plumtree	6663	1-YR	373.35	373.18	0.17	0.29	0.01	11.78	192.22		80.21	0.38
Plumtree	6663	2-YR	374.12	373.97	0.15	0.22	0.01	66.07	253.96	0.98	112.14	0.37
Plumtree	6663	10-YR	378.24	378.22	0.02	0.01	0.00	352.48	252.88	113.65	319.86	0.06
Plumtree	6663	50-YR	379.28	379.25	0.03	0.02	0.00	639.15	380.76	243.10	341.64	0.10
Plumtree	6663	100-YR	379.74	379.70	0.03	0.03	0.00	804.33	449.56	324.11	350.49	0.12
Plumtree	6663	7-30-2016	380.04	380.01	0.03	0.03	0.00	899.29	483.61	374.11	356.89	0.13
Plumtree	6568	1-YR	373.05	372.77	0.27	0.78	0.03	18.46	190.52	0.02	55.29	0.64
Plumtree	6568	2-YR	373.89	373.65	0.24	0.38	0.01	73.54	249.30	11.16	103.01	0.62
Plumtree	6568	10-YR	378.22	378.20	0.02	0.02	0.00	389.99	210.51	171.49	272.85	0.08
Plumtree	6568	50-YR	379.25	379.22	0.03	0.03	0.00	737.57	327.27	326.15	296.30	0.14
Plumtree	6568	100-YR	379.71	379.67	0.04	0.04	0.00	930.89	387.67	417.44	308.62	0.18
Plumtree	6568	7-30-2016	380.01	379.96	0.05	0.05	0.00	1077.92	433.80	490.28	318.46	0.21
Plumtree	6454	1-YR	372.24	371.71	0.54	0.46	0.13		209.00		21.53	1.36
Plumtree	6454	2-YR	373.51	373.21	0.29	0.18	0.07	9.99	312.65	11.36	61.27	0.64
Plumtree	6454	10-YR	378.20	378.18	0.02	0.02	0.00	142.83	317.86	311.31	221.85	0.07
Plumtree	6454	50-YR	379.22	379.17	0.05	0.03	0.01	272.35	521.45	597.21	258.34	0.14
Plumtree	6454	100-YR	379.67	379.61	0.06	0.04	0.01	349.43	627.58	758.99	273.89	0.19
Plumtree	6454	7-30-2016	379.96	379.89	0.07	0.05	0.01	409.62	707.91	884.46	285.96	0.22
Plumtree	6375 Culvert Diversio		Lat Struct									
Plumtree	6350	1-YR	371.65	371.55	0.10	0.12	0.01		141.98		22.58	0.22
Plumtree	6350	2-YR	373.26	373.19	0.07	0.05	0.00		211.40	0.12	30.41	0.14
Plumtree	6350	10-YR	378.18	378.14	0.04	0.01	0.00	97.09	440.96	31.28	206.52	0.08
Plumtree	6350	50-YR	379.18	379.07	0.11	0.03	0.01	249.21	841.22	94.37	247.27	0.22
Plumtree	6350	100-YR	379.61	379.46	0.15	0.04	0.01	348.93	1042.75	137.59	264.03	0.31
Plumtree	6350	7-30-2016	379.90	379.72	0.18	0.05	0.01	433.48	1190.35	172.78	272.93	0.38
Plumtree	6296	1-YR	371.52	371.34	0.19			12.56	129.41		23.01	0.45
Plumtree	6296	2-YR	373.21	373.10	0.11			37.48	172.94	1.10	33.45	0.26
Plumtree	6296	10-YR	378.17	378.11	0.06			200.96	327.97	40.39	145.25	0.16
Plumtree	6296	50-YR	379.14	378.96	0.18			482.90	624.40	77.49	190.92	0.47
Plumtree	6296	100-YR	379.56	379.30	0.25			657.14	773.99	98.15	232.70	0.67
Plumtree	6296	7-30-2016	379.83	379.53	0.30			788.81	877.53	130.27	247.44	0.82
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	370.32	370.28	0.04	0.10	0.16	0.01	141.96	0.00	28.57	0.08
Plumtree	6197	2-YR	371.14	371.08	0.06	0.11	0.29	0.32	211.07	0.14	30.85	0.11
Plumtree	6197	10-YR	373.25	373.07	0.18	0.16	0.22	6.26	560.02	3.04	36.49	0.30
Plumtree	6197	50-YR	375.32	374.89	0.43	0.24	0.30	23.22	1148.93	12.64	50.87	0.67
Plumtree	6197	100-YR	376.14	375.55	0.59	0.29	0.31	35.96	1469.30	24.03	68.37	0.90
Plumtree	6197	7-30-2016	376.72	376.01	0.71	0.31	0.31	54.83	1705.03	36.75	80.53	1.08
Plumtree	6122	1-YR	370.06	369.47	0.58	0.53	0.13		141.98		11.07	1.42
Plumtree	6122	2-YR	370.74	369.72	1.02				211.52		12.79	2.49
Plumtree	6122	10-YR	372.87	371.96	0.91	0.20	0.25	13.67	521.51	34.15	42.62	1.98
Plumtree	6122	50-YR	374.78	373.35	1.43	0.27	0.38	94.61	960.65	129.53	73.92	3.11
Plumtree	6122	100-YR	375.55	373.94	1.61	0.29	0.43	169.49	1170.57	189.22	79.13	3.54
Plumtree	6122	7-30-2016	376.09	374.35	1.75	0.31	0.47	231.38	1327.23	237.99	87.05	3.86
Plumtree	6028	1-YR	369.39	369.26	0.14	0.41	0.01	14.86	126.82	0.30	60.32	0.36
Plumtree	6028	2-YR	369.95	369.81	0.14	0.37	0.02	40.69	168.50	2.34	72.84	0.37
Plumtree	6028	10-YR	372.43	372.34	0.09	0.12	0.01	211.98	311.67	45.68	143.78	0.26
Plumtree	6028	50-YR	373.74	373.59	0.15	0.19	0.02	516.59	540.46	127.74	203.71	0.46
Plumtree	6028	100-YR	374.31	374.13	0.18	0.21	0.03	699.47	650.74	179.08	215.61	0.55
Plumtree	6028	7-30-2016	374.70	374.51	0.20	0.23	0.03	841.48	732.24	222.89	224.53	0.62
Plumtree	5926	1-YR	368.97	368.72	0.25	1.01	0.04	28.09	113.87	0.01	27.22	0.69
Plumtree	5926	2-YR	369.56	369.22	0.33	0.54	0.03	47.42	162.45	1.66	37.35	0.91
Plumtree	5926	10-YR	372.31	372.15	0.16	0.11	0.01	181.44	269.41	118.47	153.09	0.49
Plumtree	5926	50-YR	373.54	373.20	0.33	0.20	0.03	364.90	484.46	335.43	163.82	1.07
Plumtree	5926	100-YR	374.07	373.64	0.43	0.24	0.04	463.44	593.84	472.00	168.30	1.39
Plumtree	5926	7-30-2016	374.44	373.94	0.50	0.27	0.05	538.35	675.41	582.84	171.23	1.63
Plumtree	5824	1-YR	367.92	367.23	0.69	0.60	0.15		141.98		15.69	1.84
Plumtree	5824	2-YR	368.98	368.75	0.24	0.16	0.04		211.52		27.74	0.56
Plumtree	5824	10-YR	372.18	372.06	0.12	0.05	0.00	45.37	471.09	52.86	156.17	0.25

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5824	50-YR	373.30	373.07	0.24	0.11	0.01	148.81	840.88	195.11	167.48	0.52
Plumtree	5824	100-YR	373.79	373.49	0.29	0.15	0.02	214.16	1025.76	289.36	171.92	0.66
Plumtree	5824	7-30-2016	374.12	373.78	0.34	0.17	0.03	266.88	1163.86	365.87	174.93	0.77
Plumtree	5745	1-YR	366.99	366.80	0.19	0.08	0.02		141.98		19.35	0.45
Plumtree	5745	2-YR	368.78	368.69	0.10	0.03	0.01		211.13	0.39	31.56	0.20
Plumtree	5745	10-YR	372.12	372.01	0.11	0.02	0.01	32.84	498.73	37.76	99.49	0.20
Plumtree	5745	50-YR	373.18	372.86	0.32	0.04	0.02	107.74	988.55	88.50	116.87	0.59
Plumtree	5745	100-YR	373.62	373.15	0.47	0.06	0.03	156.37	1255.28	117.64	133.11	0.86
Plumtree	5745	7-30-2016	373.92	373.31	0.60	0.08	0.04	194.59	1461.87	140.15	142.56	1.11
Plumtree	5711	1-YR	366.88	366.77	0.11				141.98		20.74	0.24
Plumtree	5711	2-YR	368.75	368.68	0.07				209.29	2.23	37.64	0.14
Plumtree	5711	10-YR	372.10	372.01	0.09			22.29	482.72	64.31	101.94	0.16
Plumtree	5711	50-YR	373.12	372.86	0.26			71.41	956.19	157.19	167.84	0.49
Plumtree	5711	100-YR	373.53	373.15	0.38			107.97	1203.85	217.46	179.12	0.72
Plumtree	5711	7-30-2016	373.80	373.33	0.47			137.27	1382.22	277.12	182.79	0.90
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	366.02	365.96	0.06	0.06	0.01		141.98		27.40	0.13
Plumtree	5614	2-YR	366.83	366.76	0.08	0.06	0.01		211.52		30.44	0.15
Plumtree	5614	10-YR	371.12	371.07	0.05	0.01	0.00	80.92	459.67	28.73	172.69	0.09
Plumtree	5614	50-YR	372.61	372.52	0.10	0.02	0.02	206.72	833.48	144.59	216.44	0.19
Plumtree	5614	100-YR	373.11	372.98	0.13	0.02	0.03	272.46	1033.69	223.14	234.41	0.26
Plumtree	5614	7-30-2016	373.45	373.30	0.15	0.03	0.03	339.10	1170.92	286.58	239.05	0.31
Plumtree	5560	1-YR	365.96	365.87	0.09	0.12	0.02		141.98		23.01	0.19
Plumtree	5560	2-YR	366.76	366.65	0.11	0.12	0.02		211.52		26.25	0.23
Plumtree	5560	10-YR	371.10	371.06	0.04	0.02	0.01	128.24	385.52	55.57	256.89	0.09
Plumtree	5560	50-YR	372.58	372.52	0.06	0.02	0.01	371.87	630.95	181.97	312.13	0.15
Plumtree	5560	100-YR	373.06	372.98	0.07	0.03	0.01	506.82	763.10	259.36	331.76	0.20
Plumtree	5560	7-30-2016	373.39	373.30	0.08	0.03	0.01	618.48	857.23	320.91	342.89	0.23
Plumtree	5510	1-YR	365.81	365.50	0.31	0.06	0.01		141.98		15.34	0.72
Plumtree	5510	2-YR	366.62	366.27	0.35	0.05	0.01		211.52		17.68	0.78
Plumtree	5510	10-YR	371.08	370.98	0.10	0.01	0.02	75.35	418.80	75.18	216.56	0.21
Plumtree	5510	50-YR	372.54	372.40	0.15	0.01	0.04	236.52	693.98	254.29	249.24	0.36
Plumtree	5510	100-YR	373.01	372.83	0.18	0.01	0.05	324.03	839.48	365.78	255.43	0.47
Plumtree	5510	7-30-2016	373.34	373.13	0.21	0.01	0.05	393.92	946.51	456.18	259.68	0.55
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	365.57	365.42	0.15	0.14	0.01		141.98		17.79	0.32
Plumtree	5474	2-YR	366.37	366.18	0.19	0.15	0.01		211.52		20.06	0.40
Plumtree	5474	10-YR	371.01	370.93	0.08	0.02	0.00	94.23	432.47	42.63	168.22	0.16
Plumtree	5474	50-YR	372.44	372.30	0.13	0.04	0.00	278.26	745.00	161.54	202.53	0.31
Plumtree	5474	100-YR	372.88	372.71	0.17	0.05	0.00	378.81	909.73	240.75	207.42	0.41
Plumtree	5474	7-30-2016	373.19	372.98	0.20	0.06	0.00	458.58	1031.71	306.32	210.73	0.49
Plumtree	5419	1-YR	365.42	365.24	0.18	0.32	0.00		141.98		16.30	0.40
Plumtree	5419	2-YR	366.21	365.97	0.24	0.33	0.00		211.52		18.03	0.50
Plumtree	5419	10-YR	370.98	370.91	0.07	0.03	0.01	96.70	387.48	85.14	187.11	0.15
Plumtree	5419	50-YR	372.40	372.27	0.13	0.05	0.02	286.20	680.30	218.30	220.59	0.32
Plumtree	5419	100-YR	372.83	372.66	0.17	0.07	0.02	389.57	833.05	306.65	225.26	0.43
Plumtree	5419	7-30-2016	373.13	372.93	0.21	0.08	0.02	471.61	946.52	378.48	228.24	0.52
Plumtree	5323	1-YR	365.10	364.89	0.21	0.59	0.02		141.98		16.69	0.47
Plumtree	5323	2-YR	365.88	365.62	0.26	0.59	0.02	0.20	211.33		28.21	0.56
Plumtree	5323	10-YR	370.95	370.91	0.03	0.02	0.00	213.07	298.02	58.23	147.64	0.09
Plumtree	5323	50-YR	372.33	372.26	0.07	0.04	0.01	480.43	548.55	155.81	166.38	0.20
Plumtree	5323	100-YR	372.75	372.64	0.10	0.06	0.01	633.28	687.08	208.92	172.98	0.29
Plumtree	5323	7-30-2016	373.03	372.90	0.13	0.07	0.01	753.96	791.07	251.58	177.12	0.36
Plumtree	5209	1-YR	364.49	364.13	0.37	0.90	0.01		141.98		13.38	0.87
Plumtree	5209	2-YR	365.27	364.80	0.46	0.86	0.00		211.52		14.97	1.03
Plumtree	5209	10-YR	370.92	370.90	0.03	0.02	0.00	209.87	242.61	116.85	164.06	0.08
Plumtree	5209	50-YR	372.28	372.22	0.06	0.04	0.01	482.34	436.80	265.65	195.28	0.18
Plumtree	5209	100-YR	372.68	372.60	0.08	0.06	0.01	624.82	549.88	354.58	205.72	0.26
Plumtree	5209	7-30-2016	372.95	372.84	0.10	0.08	0.01	735.32	635.90	425.39	213.37	0.33
Plumtree	5107	1-YR	363.58	363.10	0.48	0.80	0.00		141.98		12.58	1.17
Plumtree	5107	2-YR	364.40	363.90	0.50	0.47	0.05		211.52		16.30	1.17
Plumtree	5107	10-YR	370.90	370.84	0.06	0.02	0.00	28.06	434.14	107.12	215.70	0.11
Plumtree	5107	50-YR	372.23	372.09	0.14	0.03	0.01	153.99	801.67	229.14	275.25	0.28
Plumtree	5107	100-YR	372.61	372.41	0.19	0.04	0.01	227.65	1003.87	297.76	298.93	0.40
Plumtree	5107	7-30-2016	372.86	372.61	0.24	0.05	0.01	291.05	1154.60	350.96	310.48	0.51
Plumtree	5040	1-YR	362.78	362.28	0.51				141.98		14.47	1.27
Plumtree	5040	2-YR	363.88	363.55	0.33				211.52		19.05	0.73

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5040	10-YR	370.88	370.82	0.06			52.83	495.33	21.16	219.91	0.10
Plumtree	5040	50-YR	372.19	372.07	0.11			241.88	862.60	80.31	283.76	0.22
Plumtree	5040	100-YR	372.55	372.39	0.16			355.24	1059.11	114.93	294.19	0.31
Plumtree	5040	7-30-2016	372.79	372.59	0.19			436.65	1215.77	144.19	312.55	0.39
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	361.91	361.62	0.30	0.31	0.08		141.98		18.29	0.74
Plumtree	4932	2-YR	362.79	362.51	0.28	0.24	0.06		211.52		21.21	0.62
Plumtree	4932	10-YR	367.50	367.34	0.17	0.04	0.05	4.26	559.32	5.74	47.33	0.27
Plumtree	4932	50-YR	372.06	371.94	0.12	0.02	0.03	207.46	904.54	72.79	224.54	0.21
Plumtree	4932	100-YR	372.44	372.27	0.17	0.03	0.04	293.00	1127.14	109.14	238.72	0.30
Plumtree	4932	7-30-2016	372.71	372.50	0.21	0.04	0.05	370.09	1287.12	139.39	242.62	0.37
Plumtree	4845	1-YR	361.52	361.38	0.14	0.24	0.00		141.98		18.64	0.31
Plumtree	4845	2-YR	362.49	362.33	0.16	0.18	0.01		211.52		21.01	0.33
Plumtree	4845	10-YR	367.41	367.34	0.07	0.02	0.02	117.32	446.79	5.21	113.47	0.13
Plumtree	4845	50-YR	372.01	371.95	0.06	0.01	0.01	362.44	729.32	93.03	174.56	0.11
Plumtree	4845	100-YR	372.37	372.29	0.08	0.01	0.02	473.86	927.09	128.33	182.66	0.17
Plumtree	4845	7-30-2016	372.62	372.51	0.11	0.01	0.03	560.99	1077.38	158.24	188.28	0.22
Plumtree	4745	1-YR	361.28	361.15	0.13	0.18	0.01		141.98		23.31	0.31
Plumtree	4745	2-YR	362.29	362.17	0.12	0.14	0.01		211.52		28.47	0.26
Plumtree	4745	10-YR	367.38	367.36	0.02	0.01	0.00	96.04	321.98	151.31	246.26	0.04
Plumtree	4745	50-YR	371.99	371.98	0.01	0.00	0.00	269.19	448.82	466.77	325.12	0.03
Plumtree	4745	100-YR	372.34	372.32	0.01	0.00	0.00	352.03	568.62	608.64	332.20	0.04
Plumtree	4745	7-30-2016	372.58	372.56	0.02	0.01	0.00	417.81	660.79	718.02	338.20	0.05
Plumtree	4636	1-YR	361.09	361.00	0.08	0.11	0.00		141.98		22.47	0.18
Plumtree	4636	2-YR	362.15	362.05	0.09	0.09	0.00	0.00	211.52		25.39	0.19
Plumtree	4636	10-YR	367.37	367.36	0.01	0.01	0.00	36.69	248.36	284.28	312.24	0.03
Plumtree	4636	50-YR	371.98	371.98	0.01	0.00	0.00	164.60	318.21	701.99	517.47	0.02
Plumtree	4636	100-YR	372.33	372.32	0.01	0.00	0.00	219.98	399.00	910.31	527.68	0.03
Plumtree	4636	7-30-2016	372.57	372.56	0.01	0.00	0.00	264.13	459.93	1072.55	534.65	0.03
Plumtree	4550	1-YR	360.98	360.89	0.09				141.98		24.35	0.19
Plumtree	4550	2-YR	362.06	361.97	0.09				211.52	0.00	30.40	0.18
Plumtree	4550	10-YR	367.36	367.31	0.05			38.26	484.38	46.69	348.23	0.09
Plumtree	4550	50-YR	371.98	371.98	0.00			143.66	342.85	698.28	497.16	0.01
Plumtree	4550	100-YR	372.33	372.32	0.01			191.73	431.36	906.19	518.87	0.02
Plumtree	4550	7-30-2016	372.57	372.56	0.01			230.25	498.19	1068.18	569.11	0.03
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	359.44	359.43	0.02	0.01	0.00		141.98		27.66	0.03
Plumtree	4344	2-YR	360.26	360.23	0.03	0.01	0.00		211.52		28.91	0.05
Plumtree	4344	10-YR	361.96	361.85	0.11	0.03	0.01	0.69	563.89	4.75	59.07	0.19
Plumtree	4344	50-YR	363.45	363.15	0.30	0.05	0.05	21.88	1116.04	46.88	120.02	0.49
Plumtree	4344	100-YR	364.11	363.72	0.39	0.06	0.08	46.80	1380.76	101.72	132.76	0.64
Plumtree	4344	7-30-2016	364.73	364.33	0.41	0.06	0.08	80.38	1545.30	170.93	145.35	0.69
Plumtree	4289	1-YR	359.44	359.42	0.02	0.05	0.02		141.98		33.54	0.03
Plumtree	4289	2-YR	360.25	360.23	0.02	0.06	0.03		211.52		36.54	0.04
Plumtree	4289	10-YR	361.92	361.84	0.09	0.13	0.04	2.09	560.10	7.13	117.51	0.15
Plumtree	4289	50-YR	363.34	363.15	0.19	0.16	0.01	55.68	1062.09	67.03	165.60	0.34
Plumtree	4289	100-YR	363.97	363.73	0.24	0.16	0.00	108.61	1297.65	123.02	176.54	0.42
Plumtree	4289	7-30-2016	364.59	364.35	0.24	0.14	0.00	172.34	1445.49	178.78	191.15	0.44
Plumtree	4185	1-YR	359.37	359.13	0.24	0.55	0.01		194.00		21.83	0.54
Plumtree	4185	2-YR	360.16	359.85	0.31	0.55	0.02		295.00		24.22	0.66
Plumtree	4185	10-YR	361.75	361.23	0.52	0.49	0.09	106.46	633.73	0.81	134.81	1.15
Plumtree	4185	50-YR	363.17	362.85	0.32	0.32	0.04	466.16	833.83	95.00	237.18	0.87
Plumtree	4185	100-YR	363.81	363.53	0.28	0.26	0.04	655.96	927.87	181.18	266.30	0.82
Plumtree	4185	7-30-2016	364.44	364.19	0.25	0.22	0.03	858.61	1009.48	288.92	290.08	0.76
Plumtree	4033	1-YR	358.80	358.59	0.21	0.48	0.02		194.00		20.78	0.47
Plumtree	4033	2-YR	359.59	359.34	0.26	0.47	0.02		284.33	10.67	99.22	0.55
Plumtree	4033	10-YR	361.16	360.95	0.21	0.23	0.00	16.61	475.19	249.20	176.80	0.57
Plumtree	4033	50-YR	362.82	362.63	0.19	0.14	0.02	124.49	683.08	587.43	290.81	0.57
Plumtree	4033	100-YR	363.51	363.35	0.15	0.12	0.01	188.14	736.81	840.06	308.43	0.52
Plumtree	4033	7-30-2016	364.19	364.05	0.14	0.11	0.01	256.49	794.37	1106.14	324.67	0.48
Plumtree	3930	1-YR	358.31	357.91	0.39	0.57	0.04	0.14	193.86		19.95	0.91
Plumtree	3930	2-YR	359.10	358.60	0.50	0.52	0.07	4.06	290.94		27.15	1.09
Plumtree	3930	10-YR	360.93	360.72	0.22	0.21	0.01	55.12	433.14	252.74	200.88	0.63
Plumtree	3930	50-YR	362.66	362.53	0.13	0.13	0.00	171.80	531.60	691.60	240.24	0.45
Plumtree	3930	100-YR	363.38	363.26	0.12	0.12	0.00	247.62	599.38	918.00	254.37	0.45
Plumtree	3930	7-30-2016	364.07	363.96	0.12	0.11	0.00	348.30	663.17	1145.53	267.00	0.45
Plumtree	3816	1-YR	357.69	357.44	0.25	0.42	0.01		190.57	3.43	31.80	0.55

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	3816	2-YR	358.51	358.23	0.28	0.39	0.00	1.67	271.09	22.24	64.56	0.62
Plumtree	3816	10-YR	360.71	360.54	0.17	0.20	0.00	62.32	432.52	246.16	160.40	0.48
Plumtree	3816	50-YR	362.53	362.39	0.14	0.15	0.01	190.02	577.09	627.89	212.12	0.44
Plumtree	3816	100-YR	363.26	363.12	0.14	0.14	0.01	270.23	657.03	837.75	226.46	0.46
Plumtree	3816	7-30-2016	363.96	363.81	0.15	0.14	0.01	356.97	739.24	1060.79	233.53	0.49
Plumtree	3688	1-YR	357.27	357.03	0.23	0.46	0.00	0.92	192.99	0.09	26.75	0.49
Plumtree	3688	2-YR	358.12	357.83	0.29	0.40	0.01	8.61	278.06	8.33	56.92	0.60
Plumtree	3688	10-YR	360.51	360.30	0.21	0.22	0.00	96.43	464.21	180.37	135.19	0.54
Plumtree	3688	50-YR	362.37	362.18	0.19	0.18	0.00	258.95	643.92	492.13	181.85	0.57
Plumtree	3688	100-YR	363.11	362.92	0.19	0.18	0.01	366.63	727.45	670.91	191.03	0.60
Plumtree	3688	7-30-2016	363.82	363.62	0.20	0.18	0.01	482.31	812.23	862.46	200.22	0.63
Plumtree	3550	1-YR	356.81	356.59	0.22	0.41	0.00	0.27	193.73		26.24	0.49
Plumtree	3550	2-YR	357.71	357.47	0.24	0.37	0.01	6.04	288.32	0.65	42.83	0.51
Plumtree	3550	10-YR	360.29	360.06	0.23	0.23	0.02	95.93	569.13	75.94	117.95	0.49
Plumtree	3550	50-YR	362.19	361.95	0.24	0.23	0.03	304.35	850.14	240.51	155.83	0.56
Plumtree	3550	100-YR	362.92	362.65	0.27	0.24	0.04	417.69	1004.61	342.70	168.72	0.64
Plumtree	3550	7-30-2016	363.62	363.33	0.29	0.26	0.05	532.42	1164.39	460.18	186.19	0.71
Plumtree	3428	1-YR	356.39	356.15	0.24	0.41	0.00	1.47	192.53		21.82	0.51
Plumtree	3428	2-YR	357.33	357.02	0.31	0.47	0.00	11.44	283.56		29.36	0.64
Plumtree	3428	10-YR	360.04	359.66	0.39	0.38	0.01	124.66	583.93	32.41	70.72	0.80
Plumtree	3428	50-YR	361.93	361.38	0.55	0.46	0.03	311.58	938.31	145.11	102.15	1.19
Plumtree	3428	100-YR	362.64	361.97	0.66	0.56	0.04	412.08	1127.89	225.03	112.97	1.46
Plumtree	3428	7-30-2016	363.32	362.57	0.76	0.64	0.07	517.83	1308.86	330.31	122.48	1.68
Plumtree	3296	1-YR	355.98	355.75	0.23	0.35	0.03		194.00		16.51	0.49
Plumtree	3296	2-YR	356.86	356.54	0.32	0.43	0.05		295.00		19.62	0.67
Plumtree	3296	10-YR	359.66	359.17	0.48	0.17	0.11	2.01	736.12	2.87	42.94	0.89
Plumtree	3296	50-YR	361.44	360.61	0.82	0.21	0.19	19.56	1298.84	76.60	105.36	1.48
Plumtree	3296	100-YR	362.03	360.92	1.11	0.26	0.26	30.02	1602.86	132.12	117.06	2.01
Plumtree	3296	7-30-2016	362.62	361.20	1.41	0.31	0.33	42.85	1909.43	204.72	128.11	2.57
Plumtree	3179	1-YR	355.60	355.46	0.14	0.33	0.00		194.00		28.81	0.34
Plumtree	3179	2-YR	356.38	356.22	0.16	0.26	0.01	0.00	295.00		49.06	0.38
Plumtree	3179	10-YR	359.37	359.25	0.12	0.05	0.03	18.49	688.59	33.92	124.48	0.23
Plumtree	3179	50-YR	361.04	360.86	0.18	0.06	0.04	59.39	1177.18	158.44	159.31	0.34
Plumtree	3179	100-YR	361.51	361.26	0.24	0.07	0.05	83.49	1457.88	223.63	164.61	0.46
Plumtree	3179	7-30-2016	361.97	361.66	0.31	0.09	0.06	112.14	1746.71	298.15	169.81	0.58
Plumtree	3077	1-YR	355.27	355.09	0.18	0.35	0.00	0.41	193.59		65.72	0.42
Plumtree	3077	2-YR	356.11	355.99	0.12	0.23	0.01	37.10	251.63	6.27	120.83	0.30
Plumtree	3077	10-YR	359.30	359.26	0.04	0.05	0.01	250.92	362.19	127.89	191.49	0.10
Plumtree	3077	50-YR	360.94	360.88	0.06	0.06	0.02	494.61	612.70	287.69	230.37	0.17
Plumtree	3077	100-YR	361.38	361.30	0.08	0.08	0.03	637.60	753.92	373.48	241.30	0.23
Plumtree	3077	7-30-2016	361.82	361.72	0.10	0.10	0.04	793.92	896.41	466.67	251.83	0.29
Plumtree	2978	1-YR	354.91	354.72	0.20	0.21	0.00		194.00		22.85	0.45
Plumtree	2978	2-YR	355.88	355.66	0.21	0.21	0.00		294.65	0.35	32.70	0.46
Plumtree	2978	10-YR	359.24	359.07	0.17	0.06	0.00	35.78	627.06	78.16	89.36	0.32
Plumtree	2978	50-YR	360.86	360.58	0.27	0.07	0.03	145.67	1054.02	195.31	152.96	0.54
Plumtree	2978	100-YR	361.27	360.90	0.37	0.09	0.04	211.10	1298.16	255.74	162.80	0.74
Plumtree	2978	7-30-2016	361.68	361.21	0.47	0.10	0.06	295.16	1540.82	321.02	164.06	0.96
Plumtree	2917	1-YR	354.70	354.47	0.23				194.00		19.74	0.50
Plumtree	2917	2-YR	355.67	355.42	0.25			0.00	295.00		29.70	0.56
Plumtree	2917	10-YR	359.18	359.01	0.17			47.58	653.77	39.65	176.96	0.31
Plumtree	2917	50-YR	360.76	360.58	0.18			312.65	970.43	111.92	268.01	0.40
Plumtree	2917	100-YR	361.14	360.91	0.24			448.57	1169.34	147.09	285.43	0.52
Plumtree	2917	7-30-2016	361.52	361.24	0.28			609.44	1361.55	186.01	302.99	0.65
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	354.48	354.23	0.25	0.25	0.03	0.27	193.73		35.30	0.65
Plumtree	2827	2-YR	355.15	354.88	0.27	0.24	0.01	4.90	289.37	0.73	58.20	0.64
Plumtree	2827	10-YR	356.68	356.04	0.64	0.31	0.16	27.61	696.35	17.04	123.18	1.35
Plumtree	2827	50-YR	357.76	357.25	0.51	0.25	0.12	359.53	970.41	65.06	167.47	1.27
Plumtree	2827	100-YR	358.27	357.71	0.55	0.25	0.14	513.02	1147.52	104.46	180.62	1.41
Plumtree	2827	7-30-2016	358.75	358.17	0.58	0.24	0.15	689.72	1316.63	150.65	191.93	1.51
Plumtree	2759	1-YR	354.20	354.01	0.19	0.44	0.02	3.00	190.89	0.11	38.10	0.40
Plumtree	2759	2-YR	354.90	354.65	0.25	0.45	0.04	20.74	267.81	6.45	102.66	0.54
Plumtree	2759	10-YR	356.20	355.89	0.31	0.59	0.03	175.08	459.67	106.25	183.88	0.88
Plumtree	2759	50-YR	357.39	357.12	0.27	0.62	0.00	453.73	603.97	337.30	234.40	0.96
Plumtree	2759	100-YR	357.88	357.60	0.28	0.59	0.01	614.78	679.23	471.00	251.48	1.03
Plumtree	2759	7-30-2016	358.35	358.08	0.27	0.56	0.01	788.54	747.32	621.14	267.31	1.07
Plumtree	2589	1-YR	353.74	353.61	0.13	0.61	0.07		112.49	81.51	67.53	0.44
Plumtree	2589	2-YR	354.42	354.29	0.13	0.53	0.07	0.88	146.53	147.60	107.81	0.47

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	2589	10-YR	355.57	355.38	0.20	0.50	0.02	40.39	264.85	435.76	153.99	0.84
Plumtree	2589	50-YR	356.77	356.49	0.28	0.47	0.00	178.14	420.08	796.77	230.38	1.31
Plumtree	2589	100-YR	357.28	357.03	0.25	0.42	0.00	261.33	458.65	1045.02	247.37	1.27
Plumtree	2589	7-30-2016	357.79	357.55	0.24	0.38	0.00	352.56	495.32	1309.12	263.57	1.24
Plumtree	2485	1-YR	353.06	352.27	0.80	1.09	0.16	6.08	187.92		22.59	1.94
Plumtree	2485	2-YR	353.81	352.96	0.85	0.96	0.16	28.25	263.54	3.21	38.34	2.05
Plumtree	2485	10-YR	355.05	354.61	0.44	0.68	0.02	207.96	378.91	154.14	152.00	1.51
Plumtree	2485	50-YR	356.29	355.97	0.32	0.58	0.01	464.35	483.94	446.71	195.79	1.34
Plumtree	2485	100-YR	356.86	356.57	0.29	0.55	0.02	615.25	528.59	621.16	203.74	1.28
Plumtree	2485	7-30-2016	357.41	357.13	0.28	0.52	0.02	774.13	577.37	805.50	210.83	1.27
Plumtree	2331	1-YR	351.81	351.56	0.25	0.49	0.02		193.80	0.20	21.42	0.56
Plumtree	2331	2-YR	352.69	352.38	0.31	0.52	0.02	1.47	289.48	4.04	64.53	0.65
Plumtree	2331	10-YR	354.35	353.98	0.37	0.56	0.02	147.73	541.51	51.77	125.68	0.89
Plumtree	2331	50-YR	355.71	355.28	0.42	0.59	0.02	430.34	807.42	157.24	148.91	1.13
Plumtree	2331	100-YR	356.30	355.84	0.46	0.61	0.02	592.92	943.96	228.11	159.72	1.26
Plumtree	2331	7-30-2016	356.87	356.39	0.48	0.61	0.02	777.07	1073.12	306.81	169.96	1.35
Plumtree	2153	1-YR	351.30	351.13	0.18	0.38	0.00	4.88	189.12		21.90	0.37
Plumtree	2153	2-YR	352.15	351.90	0.24	0.47	0.01	23.02	271.98		73.87	0.51
Plumtree	2153	10-YR	353.77	353.46	0.31	0.53	0.01	251.79	479.82	9.39	122.71	0.82
Plumtree	2153	50-YR	355.09	354.74	0.36	0.56	0.00	644.59	687.32	63.09	142.84	1.09
Plumtree	2153	100-YR	355.67	355.28	0.39	0.56	0.00	873.68	789.67	101.66	149.50	1.23
Plumtree	2153	7-30-2016	356.23	355.83	0.41	0.55	0.01	1121.77	885.20	150.03	156.45	1.32
Plumtree	1994	1-YR	350.92	350.69	0.22	0.32	0.00	1.34	192.66		27.63	0.48
Plumtree	1994	2-YR	351.66	351.33	0.33	0.36	0.01	10.53	284.30	0.17	81.53	0.69
Plumtree	1994	10-YR	353.23	352.86	0.37	0.36	0.02	197.57	494.04	49.40	133.39	0.97
Plumtree	1994	50-YR	354.53	354.14	0.39	0.37	0.01	499.27	702.12	193.62	171.19	1.20
Plumtree	1994	100-YR	355.11	354.72	0.38	0.36	0.01	681.49	784.28	299.23	176.56	1.23
Plumtree	1994	7-30-2016	355.68	355.30	0.38	0.35	0.00	882.09	872.17	402.74	188.61	1.28
Plumtree	1888	1-YR	350.59	350.34	0.25	0.06	0.01	8.36	179.81	5.83	49.34	0.56
Plumtree	1888	2-YR	351.29	351.00	0.29	0.06	0.01	31.39	243.68	19.93	73.28	0.67
Plumtree	1888	10-YR	352.85	352.55	0.31	0.06	0.01	187.40	415.36	138.25	135.25	0.90
Plumtree	1888	50-YR	354.15	353.80	0.35	0.06	0.02	432.89	599.77	362.34	160.47	1.17
Plumtree	1888	100-YR	354.74	354.38	0.36	0.07	0.03	578.55	685.11	501.34	170.01	1.26
Plumtree	1888	7-30-2016	355.33	354.96	0.37	0.07	0.04	742.13	770.00	644.86	180.95	1.33
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	350.35	350.25	0.10	0.41	0.04	50.19	143.81		72.27	0.27
Plumtree	1830	2-YR	351.02	350.92	0.11	0.47	0.08	102.00	192.94	0.06	98.15	0.30
Plumtree	1830	10-YR	352.60	352.47	0.13	0.52	0.14	326.73	351.04	63.23	152.68	0.42
Plumtree	1830	50-YR	353.86	353.67	0.19	0.56	0.12	627.90	551.27	215.83	157.05	0.63
Plumtree	1830	100-YR	354.42	354.21	0.22	0.58	0.10	792.89	660.11	312.00	160.33	0.74
Plumtree	1830	7-30-2016	354.99	354.74	0.25	0.58	0.08	961.38	773.57	422.05	165.72	0.85
Plumtree	1641	1-YR	349.90	349.67	0.23	0.28	0.05	19.94	174.05	0.01	31.21	0.53
Plumtree	1641	2-YR	350.47	350.10	0.37	0.39	0.08	37.56	255.59	1.84	65.80	0.86
Plumtree	1641	10-YR	351.94	351.34	0.60	0.62	0.12	140.57	489.06	111.36	116.71	1.62
Plumtree	1641	50-YR	353.18	352.60	0.58	0.67	0.08	311.85	680.45	402.70	148.16	1.85
Plumtree	1641	100-YR	353.74	353.18	0.56	0.64	0.08	413.25	763.30	588.45	157.83	1.89
Plumtree	1641	7-30-2016	354.33	353.80	0.52	0.57	0.07	528.34	835.19	793.48	167.82	1.85
Plumtree	1463	1-YR	349.57	349.50	0.07	0.36	0.01	3.92	187.01	3.07	98.09	0.16
Plumtree	1463	2-YR	350.00	349.89	0.11	0.43	0.01	18.80	266.47	9.73	117.70	0.24
Plumtree	1463	10-YR	351.20	350.98	0.22	0.51	0.01	135.65	539.98	65.37	147.91	0.54
Plumtree	1463	50-YR	352.42	352.13	0.30	0.46	0.04	367.52	844.27	183.21	181.84	0.79
Plumtree	1463	100-YR	353.03	352.72	0.31	0.41	0.05	522.58	977.65	264.78	195.20	0.85
Plumtree	1463	7-30-2016	353.69	353.39	0.29	0.35	0.05	696.93	1089.60	370.47	206.47	0.84
Plumtree	1291	1-YR	349.21	349.04	0.17	0.64	0.00	159.15	248.85		220.05	0.55
Plumtree	1291	2-YR	349.56	349.38	0.19	0.59	0.01	270.94	310.00	0.06	239.14	0.68
Plumtree	1291	10-YR	350.68	350.50	0.18	0.47	0.02	836.45	473.55	6.00	314.30	0.82
Plumtree	1291	50-YR	351.92	351.76	0.16	0.38	0.01	1693.97	625.93	31.10	396.89	0.81
Plumtree	1291	100-YR	352.57	352.42	0.15	0.33	0.00	2261.18	682.92	50.90	413.55	0.75
Plumtree	1291	7-30-2016	353.29	353.15	0.14	0.30	0.00	2952.81	751.07	78.11	422.07	0.70
Plumtree	1124	1-YR	348.57	348.35	0.21	0.46	0.03	144.59	263.41		243.41	0.68
Plumtree	1124	2-YR	348.96	348.81	0.15	0.37	0.01	295.12	285.88		261.49	0.58
Plumtree	1124	10-YR	350.19	350.07	0.12	0.30	0.00	911.34	403.64	1.01	281.73	0.56
Plumtree	1124	50-YR	351.53	351.41	0.13	0.25	0.00	1775.59	559.09	16.31	311.21	0.59
Plumtree	1124	100-YR	352.23	352.10	0.13	0.24	0.00	2307.64	650.29	37.07	325.49	0.61
Plumtree	1124	7-30-2016	352.99	352.85	0.14	0.23	0.01	2950.35	758.38	73.27	337.57	0.65
Plumtree	994	1-YR	348.08	347.96	0.13	0.25	0.00	143.78	264.22		183.00	0.42
Plumtree	994	2-YR	348.58	348.47	0.11	0.19	0.00	264.37	316.63		206.46	0.38
Plumtree	994	10-YR	349.89	349.75	0.13	0.17	0.00	752.10	562.30	1.59	235.38	0.49

HEC-RAS Plan: C River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	994	50-YR	351.28	351.11	0.16	0.16	0.00	1461.15	868.79	21.07	271.54	0.59
Plumtree	994	100-YR	351.99	351.81	0.18	0.15	0.00	1903.41	1046.53	45.06	288.19	0.64
Plumtree	994	7-30-2016	352.75	352.55	0.20	0.15	0.01	2446.40	1251.88	83.72	303.86	0.70
Plumtree	911	1-YR	347.82	347.65	0.17	0.54	0.01	153.68	254.32		193.54	0.55
Plumtree	911	2-YR	348.39	348.27	0.12	0.47	0.03	303.96	277.04		213.59	0.43
Plumtree	911	10-YR	349.71	349.59	0.13	0.34	0.01	872.43	439.84	3.73	239.09	0.54
Plumtree	911	50-YR	351.11	350.96	0.15	0.30	0.01	1686.17	639.86	24.97	273.53	0.65
Plumtree	911	100-YR	351.83	351.66	0.17	0.28	0.01	2197.30	751.78	45.92	288.71	0.70
Plumtree	911	7-30-2016	352.60	352.42	0.18	0.27	0.01	2823.78	880.42	77.81	303.31	0.76
Plumtree	762	1-YR	347.27	347.00	0.27	0.19	0.05	97.32	310.68	0.00	66.72	0.72
Plumtree	762	2-YR	347.89	347.52	0.38	0.21	0.07	135.97	442.37	2.66	161.19	0.99
Plumtree	762	10-YR	349.36	349.12	0.24	0.17	0.03	572.33	636.09	107.59	242.04	0.80
Plumtree	762	50-YR	350.81	350.58	0.22	0.15	0.02	1162.24	872.19	316.56	281.55	0.82
Plumtree	762	100-YR	351.54	351.31	0.23	0.14	0.02	1530.64	1008.77	455.60	300.48	0.85
Plumtree	762	7-30-2016	352.32	352.09	0.23	0.14	0.02	1974.05	1162.00	645.95	314.67	0.88
Plumtree	658	1-YR	347.04	346.92	0.12	0.14	0.00	8.35	391.85	7.80	174.69	0.23
Plumtree	658	2-YR	347.62	347.48	0.14	0.13	0.02	37.17	504.58	39.26	225.88	0.28
Plumtree	658	10-YR	349.16	349.02	0.15	0.12	0.02	258.78	798.50	258.72	301.02	0.37
Plumtree	658	50-YR	350.64	350.49	0.15	0.12	0.02	629.26	1100.31	621.43	328.76	0.43
Plumtree	658	100-YR	351.38	351.22	0.16	0.12	0.02	868.73	1277.06	849.21	345.31	0.47
Plumtree	658	7-30-2016	352.16	351.99	0.17	0.12	0.02	1170.86	1483.12	1128.02	363.75	0.52
Plumtree	526	1-YR	346.90	346.78	0.11	0.25	0.01	20.73	324.30	62.97	264.39	0.27
Plumtree	526	2-YR	347.47	347.38	0.09	0.21	0.01	57.10	367.24	156.66	278.77	0.25
Plumtree	526	10-YR	349.02	348.94	0.08	0.17	0.01	218.63	547.46	549.91	311.73	0.28
Plumtree	526	50-YR	350.50	350.41	0.09	0.16	0.01	470.17	773.57	1107.26	340.24	0.34
Plumtree	526	100-YR	351.24	351.14	0.10	0.16	0.01	639.69	904.35	1450.96	352.63	0.37
Plumtree	526	7-30-2016	352.02	351.91	0.11	0.17	0.01	853.17	1058.28	1870.55	365.72	0.41
Plumtree	380	1-YR	346.63	346.39	0.24	1.36	0.09	26.53	380.03	1.45	138.10	0.52
Plumtree	380	2-YR	347.25	347.04	0.20	1.09	0.11	93.10	455.11	32.79	192.08	0.49
Plumtree	380	10-YR	348.84	348.66	0.18	0.78	0.10	381.40	704.73	229.86	219.66	0.53
Plumtree	380	50-YR	350.33	350.13	0.21	0.76	0.12	783.51	1017.30	550.19	236.20	0.64
Plumtree	380	100-YR	351.06	350.84	0.23	0.77	0.13	1030.93	1198.74	765.33	241.67	0.71
Plumtree	380	7-30-2016	351.84	351.59	0.25	0.79	0.14	1333.81	1414.34	1033.85	247.14	0.79
Plumtree	146	1-YR	345.17	343.98	1.19	0.58	0.29		408.00		19.97	2.67
Plumtree	146	2-YR	346.05	344.79	1.26	0.53	0.29	4.80	575.13	1.07	43.36	2.64
Plumtree	146	10-YR	347.96	346.75	1.21	0.45	0.20	224.58	1032.08	59.33	111.86	2.66
Plumtree	146	50-YR	349.45	348.05	1.40	0.45	0.20	658.33	1521.98	170.69	141.74	3.38
Plumtree	146	100-YR	350.16	348.63	1.53	0.46	0.21	960.28	1794.45	240.27	153.62	3.82
Plumtree	146	7-30-2016	350.91	349.23	1.68	0.46	0.22	1354.18	2102.54	325.28	164.30	4.32
Plumtree	63	1-YR	343.79	343.55	0.23				408.00		43.59	0.51
Plumtree	63	2-YR	344.47	344.18	0.29			0.04	580.94	0.02	50.01	0.61
Plumtree	63	10-YR	346.45	345.91	0.54			23.50	1281.72	10.79	84.16	0.97
Plumtree	63	50-YR	348.29	347.54	0.75			137.54	2127.33	86.14	127.03	1.32
Plumtree	63	100-YR	349.17	348.33	0.85			241.37	2594.26	159.37	139.56	1.49
Plumtree	63	7-30-2016	350.11	349.16	0.94			388.93	3129.63	263.45	150.66	1.66

Appendix H-5

Plumtree Branch: Option D Hydraulic Modeling

SCS TR-55 RUNOFF CURVE NUMBER

JOB NAME: Valley Mede Flood Study, Howard County
Ultimate Land Use, Fair Conditions
Drainage Area #3a - Greenway Drive Storm Drain

DATE: 09/21/17
JOB NO.: 5635-49

COMPUTED BY: HBH
CHECKED BY: CEL

STUDY POINT: Greenway Drive Storm Drain

CONDITION: X ULTIMATE
EXISTING

RUNOFF CURVE NUMBER COMPUTATION

HYDROLOGIC SOIL GROUP	LAND USE	RUNOFF CURVE NO.	Area (ft^2)	AREA (ac)	RCN x A
D	Impervious - rds paved open ditch (incl ROW)	98	13,670	0.314	30.75
B	Residential - 1/2 Acre	76	2,804,533	64.383	4893.12
C	Residential - 1/2 Acre	84	87,449	2.008	168.63
D	Residential - 1/2 Acre	88	5,914	0.136	11.95
B	Urban district - commercial/business	94	39,809	0.914	85.91
D	Urban district - commercial/business	96	91,280	2.096	201.17
		TOTAL	**3,042,655**	**69.850**	**5391.53**
				MI^2	**0.1091**

WEIGHTED RUNOFF CURVE NUMBER = **TOT RCN x AC =** **5391.53** = **77.188**
TOTAL ACRES **69.85**

TR-55 TIME OF CONCENTRATION WORKSHEET

DRAINAGE AREA: Valley Mede Floodplain Analysis
Existing/Proposed Tc BY: CEL
Drainage Area #3a - Greenway Drive Storm Drain

OVERLAND FLOW

Flow Segment Name	A3B3	
Surface Description	Grass (Dense)	
Roughness Coefficient	0.24	
Land Slope (ft/ft)	0.030	
Flow Length (ft) [100' max]	100.00	
Two-Year Rainfall (in.)	3.19	
Flow Time (hr.)	0.2025	0.203

SHALLOW CONCENTRATED FLOW

Flow Segment Name	B3C3			
Flow Length (ft)	913			
Paved or Unpaved	Unpaved			
Land Slope (ft/ft)	0.034			
Flow Velocity (ft/sec.)	2.9735			
Flow Time (hr.)	0.0853			0.085

CHANNEL FLOW

Flow Segment Name						
Flow Depth (ft)						
Bottom Width (ft)						
Side Slope (Z1)						
Side Slope (Z2)						
Manning's Coefficient						
Flow Length (ft)						
Channel Slope (ft/ft)						
Flow Velocity (ft/sec.)						
Flow Time (hr.)						0.000

PIPE FLOW (Assuming full flow)

Flow Segment Name	C3D3a					
Pipe Diameter (ft)	4.00					
Manning's Coefficient	0.024					
Pipe Slope (ft/ft)	0.018					
Pipe Length (ft)	2094					
Flow Velocity (ft/sec.)	8.286					
Flow Time (hr.)	0.0702					0.070

TIME OF CONCENTRATION (hr.)/(min)	0.358	21.48

1

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 ******************80-80 LIST OF INPUT DATA FOR TR-20
 HYDROLOGY******************

 JOB TR-20                                                        NOPLOTS
 TITLE     Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
 TITLE     2, 10, 50, 100-year 24-hr storms NOAA C Rainfall Distributions
  5 RAINFL 5              .1
  8           0.0000      0.0013      0.0023      0.0034      0.0044
  8           0.0055      0.0065      0.0076      0.0087      0.0098
  8           0.0109      0.0121      0.0132      0.0143      0.0155
  8           0.0167      0.0178      0.0190      0.0202      0.0214
  8           0.0226      0.0238      0.0251      0.0263      0.0276
  8           0.0288      0.0301      0.0314      0.0327      0.0340
  8           0.0353      0.0366      0.0379      0.0393      0.0406
  8           0.0420      0.0434      0.0447      0.0461      0.0475
  8           0.0489      0.0504      0.0518      0.0532      0.0547
  8           0.0562      0.0576      0.0591      0.0606      0.0621
  8           0.0636      0.0651      0.0667      0.0682      0.0697
  8           0.0713      0.0729      0.0745      0.0760      0.0776
  8           0.0793      0.0809      0.0826      0.0843      0.0861
  8           0.0879      0.0898      0.0916      0.0936      0.0955
  8           0.0975      0.0996      0.1017      0.1038      0.1060
  8           0.1082      0.1104      0.1127      0.1150      0.1174
  8           0.1198      0.1223      0.1247      0.1273      0.1298
  8           0.1324      0.1351      0.1378      0.1405      0.1432
  8           0.1461      0.1490      0.1521      0.1554      0.1588
  8           0.1623      0.1660      0.1699      0.1739      0.1780
  8           0.1823      0.1868      0.1914      0.1961      0.2010
  8           0.2061      0.2117      0.2179      0.2247      0.2321
  8           0.2400      0.2490      0.2591      0.2702      0.2825
  8           0.2955      0.3157      0.3370      0.3662      0.4067
  8           0.4766      0.5933      0.6338      0.6630      0.6843
  8           0.7045      0.7176      0.7298      0.7409      0.7510
  8           0.7600      0.7679      0.7753      0.7821      0.7883
  8           0.7939      0.7990      0.8039      0.8086      0.8132
  8           0.8177      0.8220      0.8261      0.8301      0.8340
  8           0.8377      0.8412      0.8446      0.8479      0.8510
  8           0.8540      0.8568      0.8595      0.8622      0.8649
  8           0.8676      0.8702      0.8727      0.8753      0.8778
  8           0.8802      0.8826      0.8850      0.8873      0.8896
  8           0.8918      0.8940      0.8962      0.8983      0.9004
  8           0.9025      0.9045      0.9064      0.9084      0.9103
  8           0.9121      0.9139      0.9157      0.9174      0.9191
  8           0.9208      0.9224      0.9240      0.9256      0.9271
  8           0.9287      0.9303      0.9318      0.9334      0.9349
  8           0.9364      0.9379      0.9394      0.9409      0.9424
  8           0.9439      0.9453      0.9468      0.9482      0.9496
  8           0.9511      0.9525      0.9539      0.9553      0.9566
  8           0.9580      0.9594      0.9607      0.9621      0.9634
  8           0.9647      0.9660      0.9673      0.9686      0.9699
  8           0.9712      0.9724      0.9737      0.9749      0.9762
  8           0.9774      0.9786      0.9798      0.9810      0.9822
  8           0.9834      0.9845      0.9857      0.9868      0.9879
1


 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************
```

```
  8          0.9891      0.9902      0.9913      0.9924      0.9935
  8          0.9945      0.9956      0.9967      0.9977      0.9987
  8          1.0000      1.0000      1.0000      1.0000      1.0000
  9 ENDTBL
  6 RUNOFF 1 026       1 0.1091      77.188       0.358      1        1  DA3a
    ENDATA
  7 INCREM 6                     0.05
  7 COMPUT 7 026   026            0.0        2.64         1.05 2  1   1
    ENDCMP 1
  7 COMPUT 7 026   026            0.0        3.19         1.05 2  1   2
    ENDCMP 1
  7 COMPUT 7 026   026            0.0        4.91         1.05 2  1   10
    ENDCMP 1
  7 COMPUT 7 026   026            0.0        7.23         1.05 2  1   50
    ENDCMP 1
  7 COMPUT 7 026   026            0.0        8.47         1.05 2  1   99
    ENDCMP 1
    ENDJOB 2

 ******************************END OF 80-80
 LIST*******************************
1
 TR20 ------------------------------------------------------------------- SCS
 -
           Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
           VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
 Distributions2.04TEST
 08:49:26                  PASS   1   JOB NO.   1                     PAGE
 1



 EXECUTIVE CONTROL INCREM    MAIN TIME INCREMENT =   .050 HOURS


 EXECUTIVE CONTROL COMPUT    FROM XSECTION  26  TO XSECTION  26
    STARTING TIME =   .00       RAIN DEPTH =  2.64       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. = 1            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION  26

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.29                         44.7                        (RUNOFF)
       23.98                          1.3                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .84 WATERSHED INCHES;      59 CFS-HRS;       4.9 ACRE-
                    FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   1


 EXECUTIVE CONTROL COMPUT    FROM XSECTION  26  TO XSECTION  26
    STARTING TIME =   .00       RAIN DEPTH =  3.19       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. = 2            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION  26
```

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.28                        67.3                       (RUNOFF)
      20.68                         2.2                       (RUNOFF)
      23.99                         1.7                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.22 WATERSHED INCHES;      86 CFS-HRS;       7.1 ACRE-
                FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   2
1
 TR20 ------------------------------------------------------------------- SCS
 -
           Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
           VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
 Distributions2.04TEST
 08:49:26                   PASS   3   JOB NO.   1                    PAGE
 2



 EXECUTIVE CONTROL COMPUT    FROM XSECTION  26  TO XSECTION  26
    STARTING TIME =   .00       RAIN DEPTH =  4.91       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =10            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION  26

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.27                       146.4                       (RUNOFF)
      20.13                         4.1                       (RUNOFF)
      23.99                         3.0                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.56 WATERSHED INCHES;     181 CFS-HRS;      14.9 ACRE-
                FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   3


 EXECUTIVE CONTROL COMPUT    FROM XSECTION  26  TO XSECTION  26
    STARTING TIME =   .00       RAIN DEPTH =  7.23       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =50            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION  26

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.26                       259.5                       (RUNOFF)
      18.67                         7.2                       (RUNOFF)
      20.68                         6.3                       (RUNOFF)
      23.13                         5.2                       (RUNOFF)
      24.03                         4.9                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
```

4.59 WATERSHED INCHES; 323 CFS-HRS; 26.7 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4
1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
VERSION
09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
Distributions2.04TEST
08:49:26 PASS 5 JOB NO. 1 PAGE
3

EXECUTIVE CONTROL COMPUT FROM XSECTION 26 TO XSECTION 26
STARTING TIME = .00 RAIN DEPTH = 8.47 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .050 HOURS
ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	320.6	(RUNOFF)
18.66	8.6	(RUNOFF)
20.68	7.5	(RUNOFF)
23.13	6.3	(RUNOFF)
23.98	5.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.72 WATERSHED INCHES; 403 CFS-HRS; 33.3 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5
1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
VERSION
09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
Distributions2.04TEST
08:49:26 SUMMARY, JOB NO. 1 PAGE
4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 2.64 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

```
 RAINTABLE NUMBER  5,    ARC 2
 MAIN TIME INCREMENT   .050 HOURS

    ALTERNATE    1   STORM    1
    ---------------------------
 XSECTION  26  RUNOFF      .11      .84        ---     12.29       45    409.1

 RAINFALL OF   3.19 inches AND  24.00 hr DURATION, BEGINS AT    .0 hrs.

    ALTERNATE    1   STORM    2
    ---------------------------
 XSECTION  26  RUNOFF      .11     1.22        ---     12.28       67    609.1

 RAINFALL OF   4.91 inches AND  24.00 hr DURATION, BEGINS AT    .0 hrs.

    ALTERNATE    1   STORM   10
    ---------------------------
 XSECTION  26  RUNOFF      .11     2.56        ---     12.27      146   1327.3

 RAINFALL OF   7.23 inches AND  24.00 hr DURATION, BEGINS AT    .0 hrs.

    ALTERNATE    1   STORM   50
    ---------------------------
 XSECTION  26  RUNOFF      .11     4.59        ---     12.26      260   2363.6

 RAINFALL OF   8.47 inches AND  24.00 hr DURATION, BEGINS AT    .0 hrs.

    ALTERNATE    1   STORM   99
    ---------------------------
 XSECTION  26  RUNOFF      .11     5.72        ---     12.26      321   2918.2
1
 TR20 ------------------------------------------------------------------------ SCS
 -
            Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
            VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
 Distributions2.04TEST
 08:49:26                    SUMMARY, JOB NO.   1                      PAGE
 5


                             SUMMARY TABLE 3
                             ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.........
   ID               (SQ MI)          1         2        10        50        99


 XSECTION   26          .11
 ---------------------------
    ALTERNATE    1                   45        67       146       260
    321
1
 TR20 ------------------------------------------------------------------------ SCS
 -
            Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
            VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
 Distributions2.04TEST
```

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = greenway.dat , GIVEN DATA FILE
OUTPUT = greenway.OUT , DATED 09/21/**,08:49:26

FILES GENERATED - DATED 09/21/**,08:49:26

NONE!

TOTAL NUMBER OF WARNINGS = 0, MESSAGES = 0

*** TR-20 RUN COMPLETED ***

1

```
 *****************80-80 LIST OF INPUT DATA FOR TR-20
 HYDROLOGY******************

 JOB TR-20                                                    NOPLOTS
 TITLE     Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
 TITLE     July 30, 2016 storm
  5 RAINFL 5              0.05
  8               0.0000       0.0061      0.0061      0.0061      0.0061
  8               0.0061       0.0121      0.0242      0.0364      0.0424
  8               0.0424       0.0424      0.0424      0.0485      0.0606
  8               0.0667       0.0727      0.0727      0.0727      0.0727
  8               0.0788       0.0848      0.1030      0.1212      0.1333
  8               0.1576       0.1818      0.1879      0.2000      0.2182
  8               0.2242       0.2303      0.2424      0.2606      0.2909
  8               0.3212       0.3576      0.4061      0.4667      0.5394
  8               0.6061       0.6606      0.7030      0.7394      0.7576
  8               0.7758       0.7939      0.8182      0.8424      0.8788
  8               0.9091       0.9212      0.9333      0.9455      0.9515
  8               0.9576       0.9697      0.9758      0.9818      0.9818
  8               0.9818       0.9818      0.9818      0.9879      0.9879
  8               0.9879       0.9879      0.9939      0.9939      0.9939
  8               0.9939       0.9939      1.0000      1.0000      1.0000
  9 ENDTBL
  6 RUNOFF 1 026       1 0.1091      77.188       0.358      1        1  DA3a
    ENDATA
  7 INCREM 6             0.06
  7 COMPUT 7 026   026   0.0                 6.60         1.05 2  1   01
    ENDCMP 1
    ENDJOB 2

 *******************************END OF 80-80
 LIST*******************************
1
 TR20 ------------------------------------------------------------------- SCS
 -
           Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
           VERSION
 09/20/**                     July 30, 2016 storm
 2.04TEST
 18:04:17                   PASS   1   JOB NO.   1                      PAGE
 1



 EXECUTIVE CONTROL INCREM    MAIN TIME INCREMENT =   .060 HOURS


 EXECUTIVE CONTROL COMPUT    FROM XSECTION  26  TO XSECTION  26
    STARTING TIME =   .00       RAIN DEPTH =  6.60       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .060 HOURS
    ALTERNATE NO. = 1           STORM NO. = 1            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION  26

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
        2.20                         341.5                       (RUNOFF)
        3.72                          11.2                       (RUNOFF)
```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.03 WATERSHED INCHES; 283 CFS-HRS; 23.4 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1
1
TR20 ---------- SCS
-
Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
VERSION
09/20/** July 30, 2016 storm
2.04TEST
18:04:17 SUMMARY, JOB NO. 1 PAGE
2

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 6.60 inches AND 3.60 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 5, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE 1 STORM 1							
XSECTION 26	RUNOFF	.11	4.03	---	2.20	341	3100.0

1
TR20 ---------- SCS
-
Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
VERSION
09/20/** July 30, 2016 storm
2.04TEST
18:04:17 SUMMARY, JOB NO. 1 PAGE
3

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 26	.11	
ALTERNATE 1		341

1
TR20 ---------- SCS
-

Valley Mede Ultimate LU, Fair Cond, Greenway Storm Drain
VERSION
09/20/** July 30, 2016 storm
2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = gwjuly.dat , GIVEN DATA FILE
OUTPUT = gwjuly.OUT , DATED 09/20/
**,18:04:17

FILES GENERATED - DATED 09/20/**,18:04:17

NONE!

TOTAL NUMBER OF WARNINGS = 0, MESSAGES = 0

*** TR-20 RUN COMPLETED ***

HY-8 Culvert Analysis Report

Project Notes

Project Title: Valley Mede Flood Study

Designer: CEL

Project Date: Monday, September 25, 2017

Notes: HY-8 for Greenway Drive storm drain extension capacity, Option D.

Project Units: U.S. Customary Units

Outlet Control Option: Profiles

Exit Loss Option: Standard Method

Crossing Notes: Greenway Diversion

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

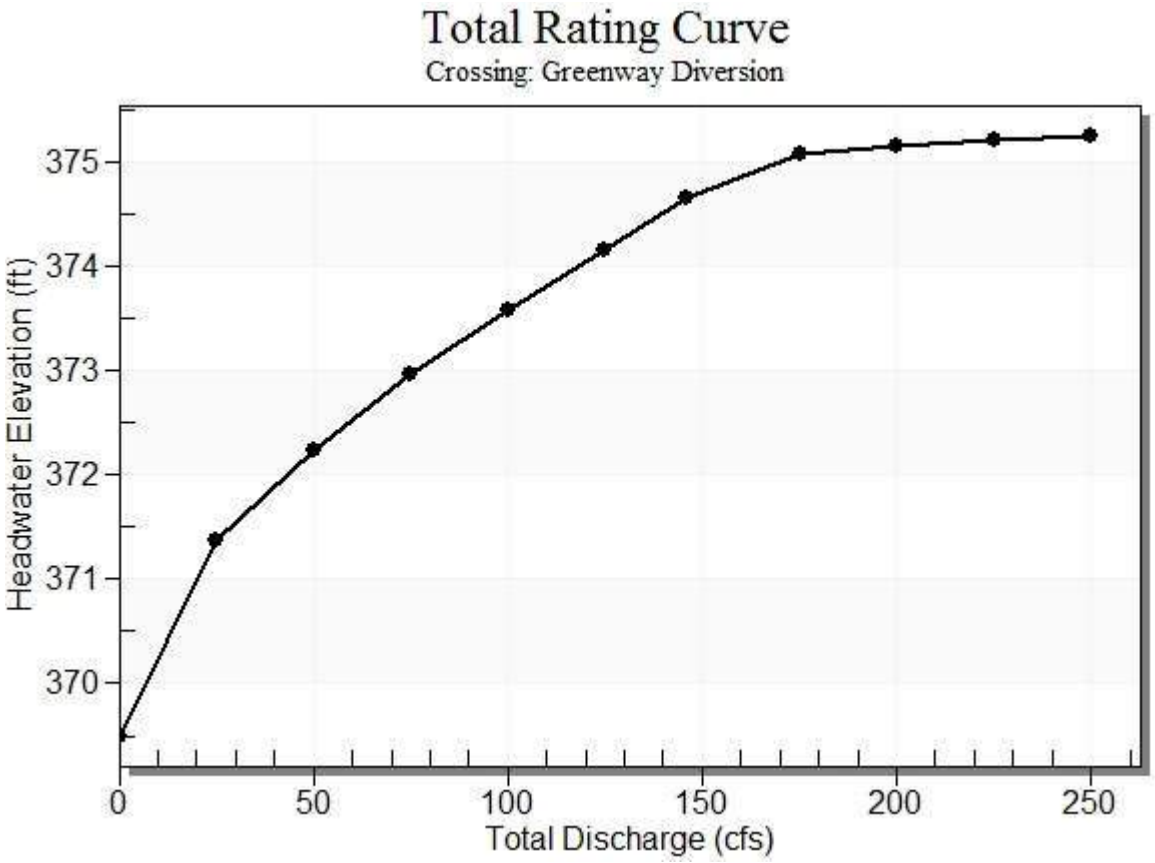
Design Flow: 146 cfs

Maximum Flow: 250 cfs

Table 1 - Summary of Culvert Flows at Crossing: Greenway Diversion

Headwater Elevation (ft)	Total Discharge (cfs)	Diversion Discharge (cfs)	Roadway Discharge (cfs)	Iterations
369.50	0.00	0.00	0.00	1
371.38	25.00	25.00	0.00	1
372.24	50.00	50.00	0.00	1
372.97	75.00	75.00	0.00	1
373.58	100.00	100.00	0.00	1
374.16	125.00	125.00	0.00	1
374.66	146.00	146.00	0.00	1
375.08	175.00	162.38	12.34	13
375.15	200.00	165.20	34.42	5
375.21	225.00	167.45	57.09	4
375.26	250.00	169.43	80.37	4
375.00	159.43	159.43	0.00	Overtopping

Rating Curve Plot for Crossing: Greenway Diversion



Culvert Notes: Diversion

Table 2 - Culvert Summary Table: Diversion

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	369.50	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
25.00	25.00	371.38	1.875	0.0*	1-S2n	1.159	1.380	1.159	0.938	6.988	2.081
50.00	50.00	372.24	2.741	0.0*	1-S2n	1.654	1.977	1.654	1.374	8.511	2.576
75.00	75.00	372.97	3.467	0.0*	1-S2n	2.059	2.449	2.116	1.708	9.165	2.902
100.00	100.00	373.58	4.083	0.0*	1-S2n	2.426	2.841	2.485	1.988	9.929	3.152
125.00	125.00	374.16	4.663	0.0*	1-S2n	2.778	3.195	2.859	2.231	10.436	3.356
146.00	146.00	374.66	5.163	0.0*	5-S2n	3.075	3.459	3.075	2.416	11.180	3.505
175.00	162.38	375.08	5.576	0.184	5-S2n	3.315	3.649	3.315	2.647	11.412	3.684
200.00	165.20	375.15	5.650	0.567	5-S2n	3.358	3.680	3.358	2.831	11.444	3.821
225.00	167.45	375.21	5.710	0.877	5-S2n	3.393	3.705	3.473	3.001	11.181	3.945
250.00	169.43	375.26	5.763	1.152	5-S2n	3.423	3.727	3.507	3.162	11.195	4.058

* Full Flow Headwater elevation is below inlet invert.

****

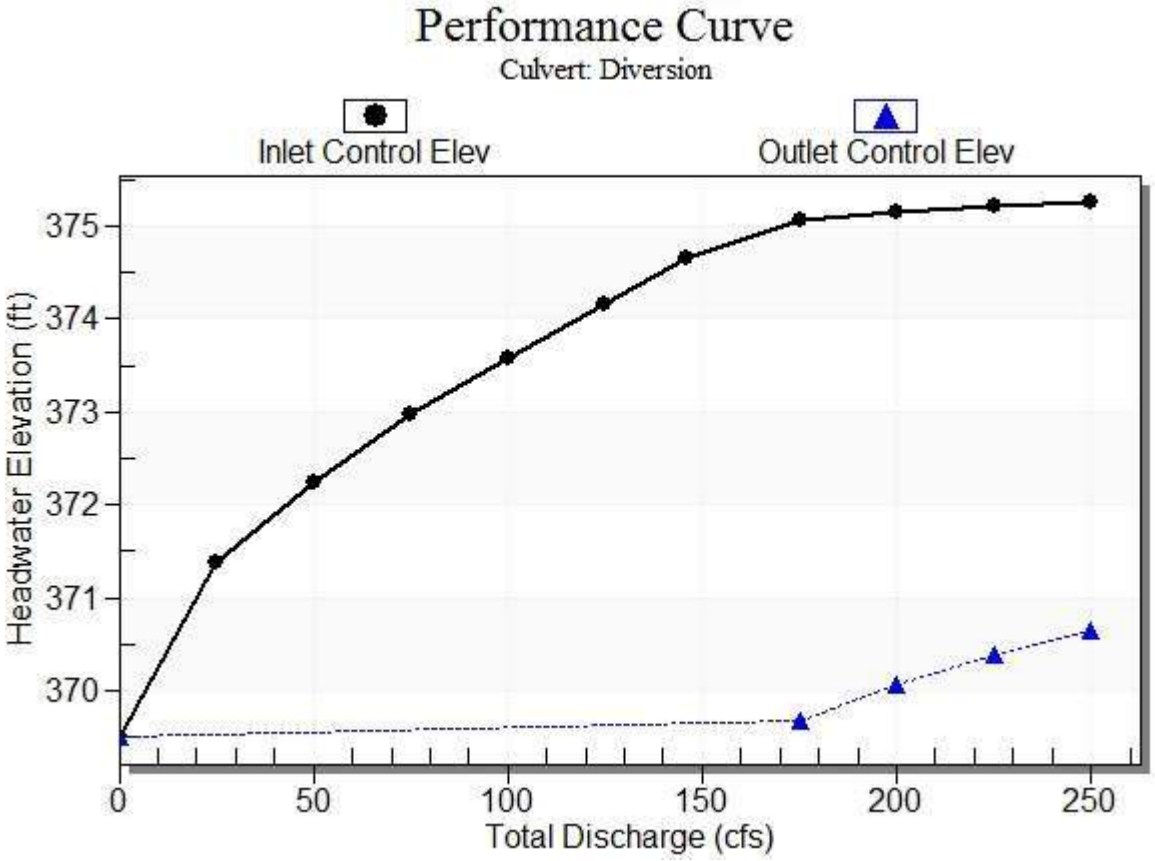
Straight Culvert

Inlet Elevation (invert): 369.50 ft, Outlet Elevation (invert): 356.00 ft

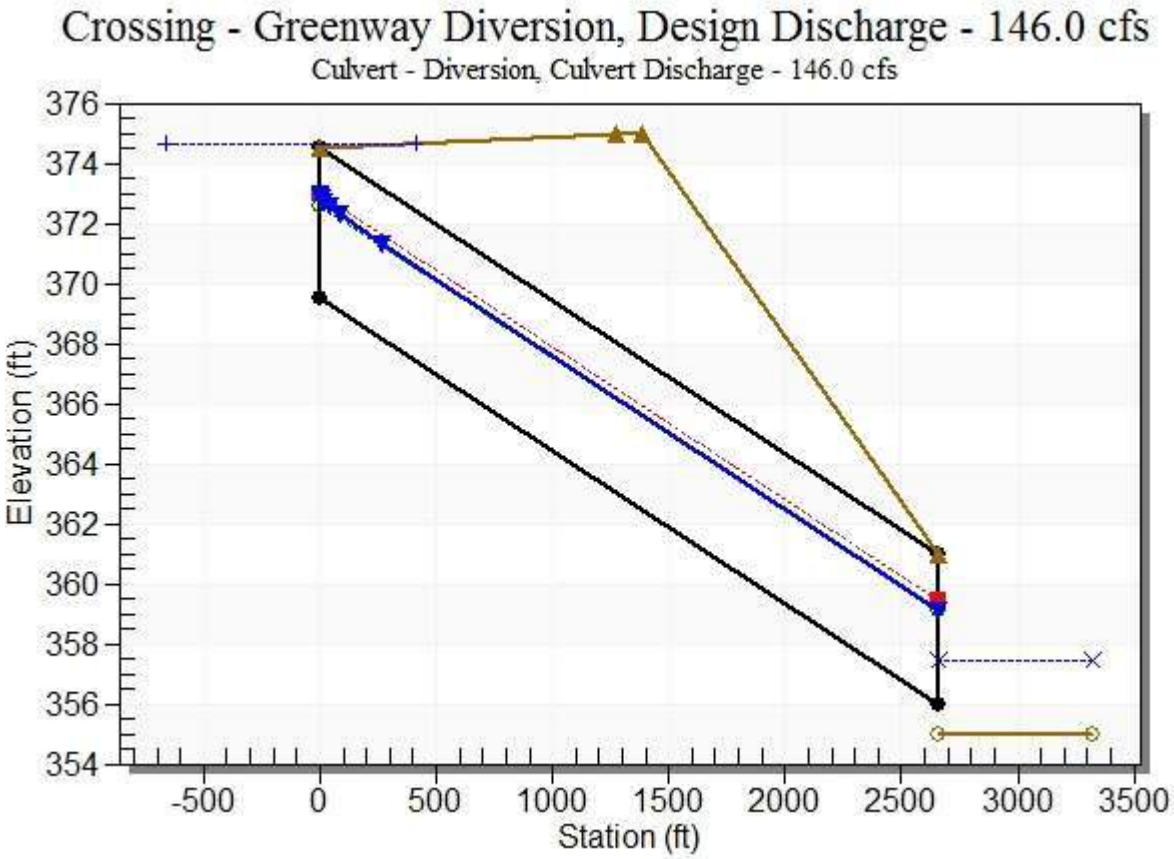
Culvert Length: 2660.03 ft, Culvert Slope: 0.0051

****

Culvert Performance Curve Plot: Diversion



Water Surface Profile Plot for Culvert: Diversion



Site Data - Diversion

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 369.50 ft

Outlet Station: 2660.00 ft

Outlet Elevation: 356.00 ft

Number of Barrels: 1

Culvert Data Summary - Diversion

Barrel Shape: Circular

Barrel Diameter: 5.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Grooved End in Headwall

Inlet Depression: None

Table 3 - Downstream Channel Rating Curve (Crossing: Greenway Diversion)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	355.00	0.00	0.00	0.00	0.00
25.00	355.94	0.94	2.08	0.20	0.42
50.00	356.37	1.37	2.58	0.30	0.44
75.00	356.71	1.71	2.90	0.37	0.45
100.00	356.99	1.99	3.15	0.43	0.46
125.00	357.23	2.23	3.36	0.49	0.47
146.00	357.42	2.42	3.50	0.53	0.47
175.00	357.65	2.65	3.68	0.58	0.48
200.00	357.83	2.83	3.82	0.62	0.48
225.00	358.00	3.00	3.94	0.66	0.49
250.00	358.16	3.16	4.06	0.69	0.49

Tailwater Channel Data - Greenway Diversion

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 10.00 ft

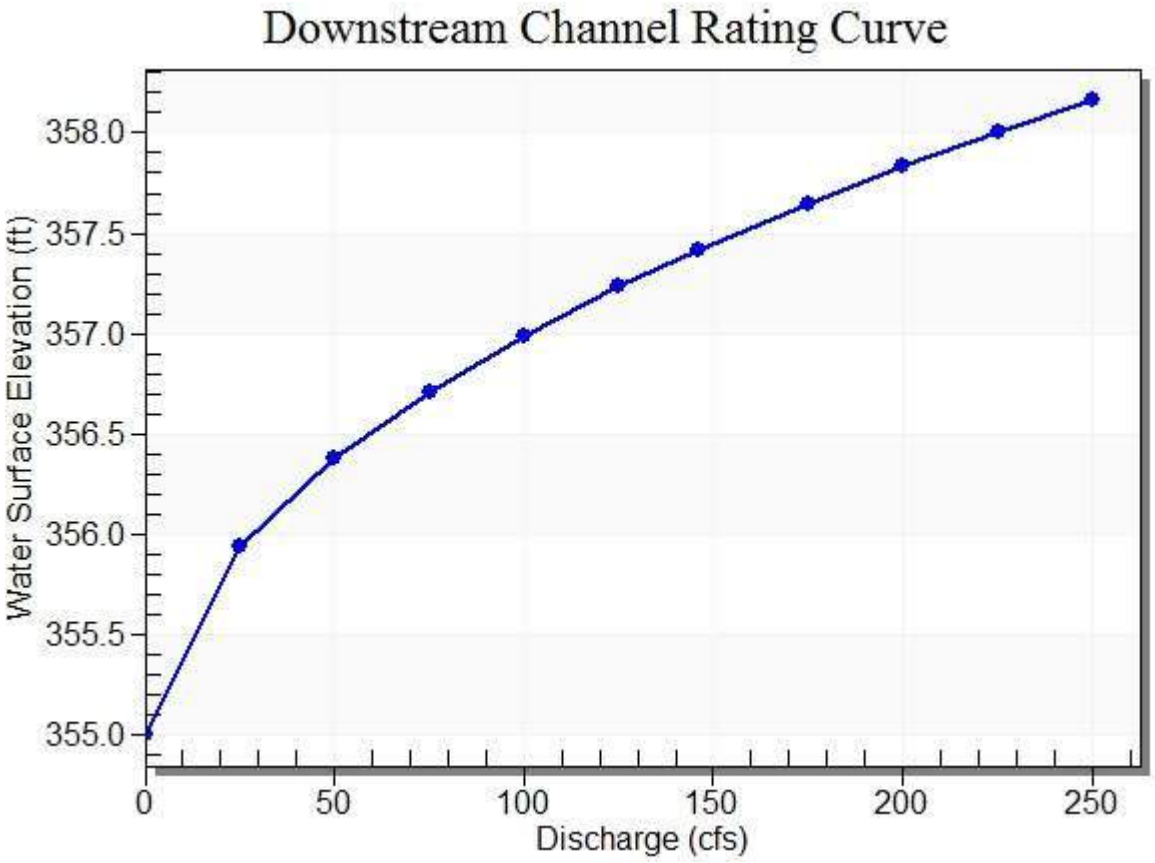
Side Slope (H:V): 3.00 (_:1)

Channel Slope: 0.0035

Channel Manning's n: 0.0350

Channel Invert Elevation: 355.00 ft

Tailwater Rating Curve Plot for Crossing: Greenway Diversion



Roadway Data for Crossing: Greenway Diversion

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 200.00 ft

Crest Elevation: 375.00 ft

Roadway Surface: Paved

Roadway Top Width: 115.00 ft

Greenway Drive Storm Drain Discharges					
1-YR	**2-YR**	**10-YR**	**50-YR**	**100-YR**	**7/30/2016**
45	67	146	260	321	341

Existing Conditions Discharges						
River Sta.	**1-YR**	**2-YR**	**10-YR**	**50-YR**	**100-YR**	**7/30/2016**
10286	223	307	596	995	1200	1333
9499	204	321	719	1263	1578	1757
6568	209	334	772	1391	1736	2002
4185	194	295	741	1395	1765	2157
1291	408	581	1316	2351	2995	3782

Discharges for Greenway Drive Diversion - Option D						
River Sta.	**1-YR**	**2-YR**	**10-YR**	**50-YR**	**100-YR**	**7/30/2016**
10286	223	307	596	995	1200	1333
9499	204	321	719	1263	1578	1757
6568*	164	267	626	1232	1577	1843
4185*	149	228	595	1236	1606	1998
2759	194	295	741	1395	1765	2157
1291	408	581	1316	2351	2995	3782

*Discharges computed as:
Existing condition - Greenway Storm Drain Discharges thorugh the 10-year
Existing condition - 159cfs (pipe capacity) above 10-year

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017

Plumtree Plumtree

Legend

- WS 7-30-2016
- WS 100-YR
- WS 50-YR
- WS 10-YR
- WS 2-YR
- WS 1-YR
- Ground
- LOB
- ROB
- Right Levee

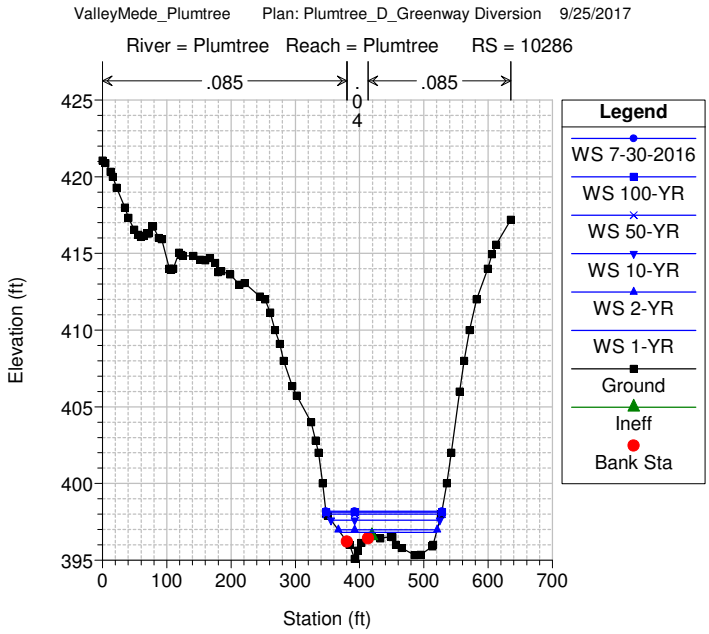
Elevation (ft)

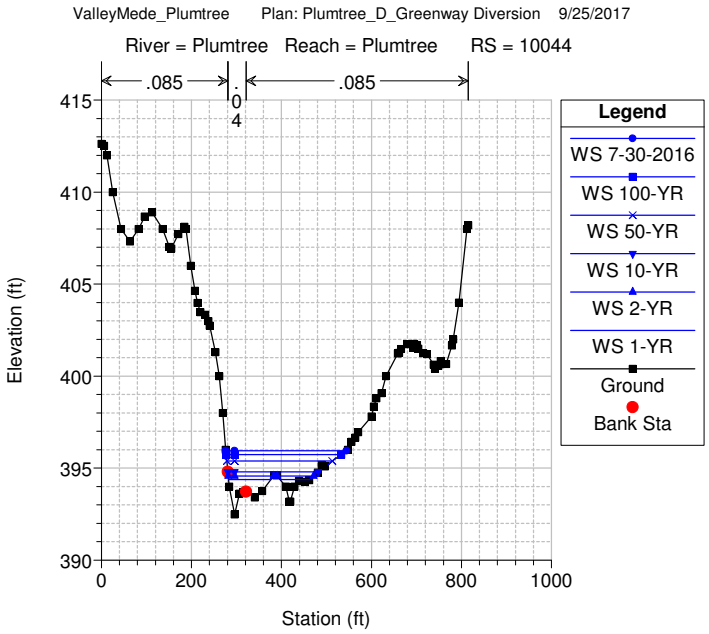
400
390
380
370
360
350
340

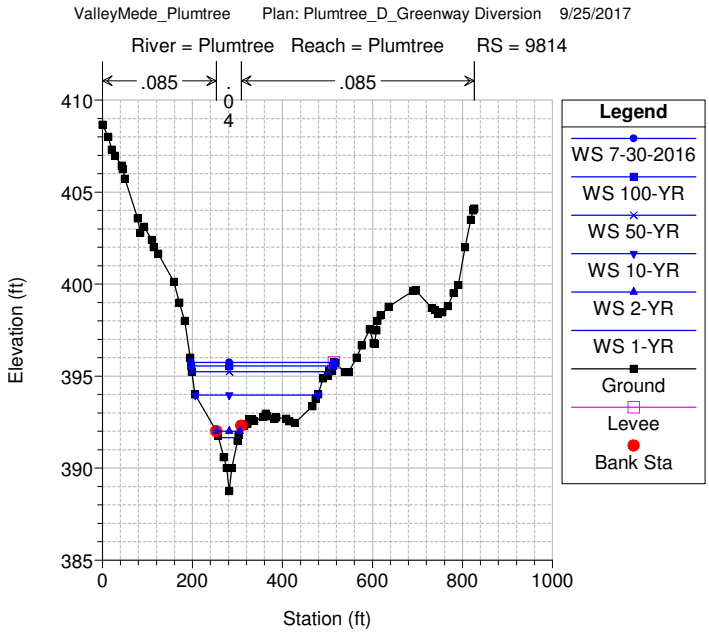
0
2000
4000
6000
8000
10000
12000

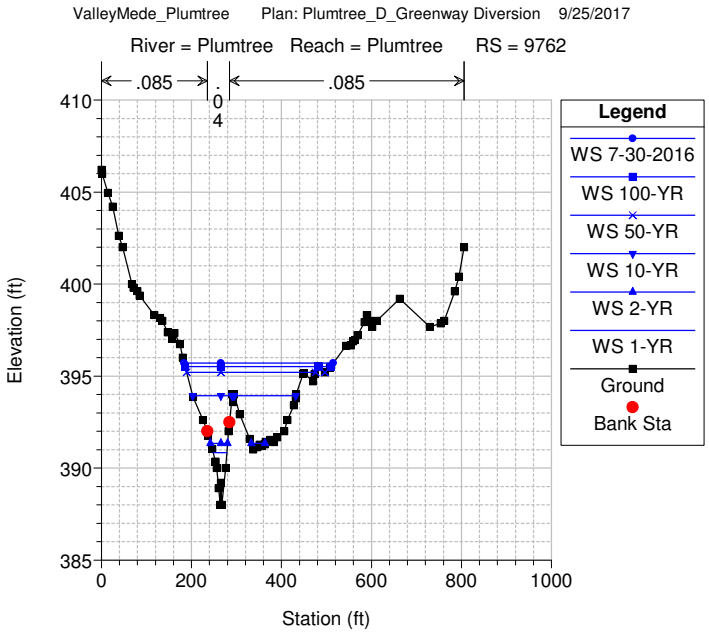
Main Channel Distance (ft)

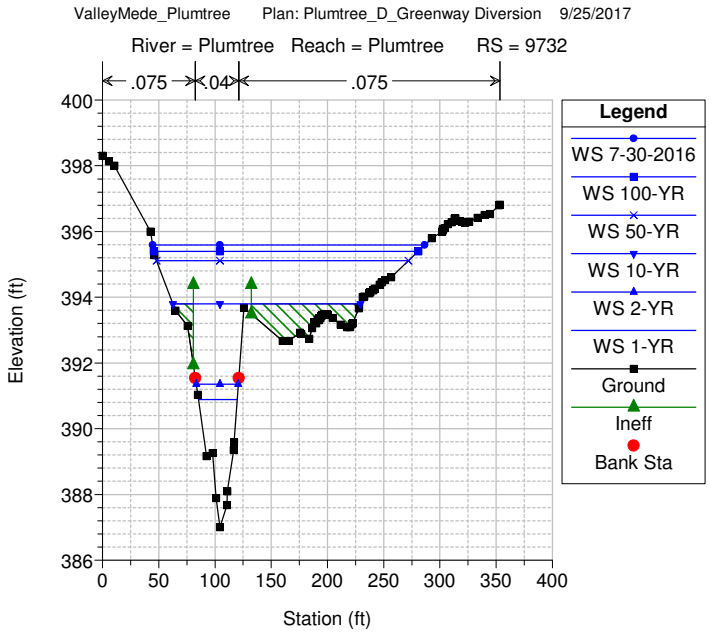
380 526 762 911 1124 1291 1463 1641 1830 1994 2153 2331 2485 2589 2759 2900 Frederick Rd 2978 3077 3179 3296 3428 3550 3688 3816 3930 4033 4185 4289 4400 US 40 4636 4745 4845 5000 Longview Dr 5107 5209 5323 5419 5560 5650 Brookmede Rd 5824 5926 6028 6122 6250 Hearthstone Rd 6350 6454 6568 6663 6766 6893 7030 7216 7367 7548 7800 7954 8094 8229 8374 8579 8753 8987 9196 9301 9398 9499 9650 Michaels Way 9814 10044 10286

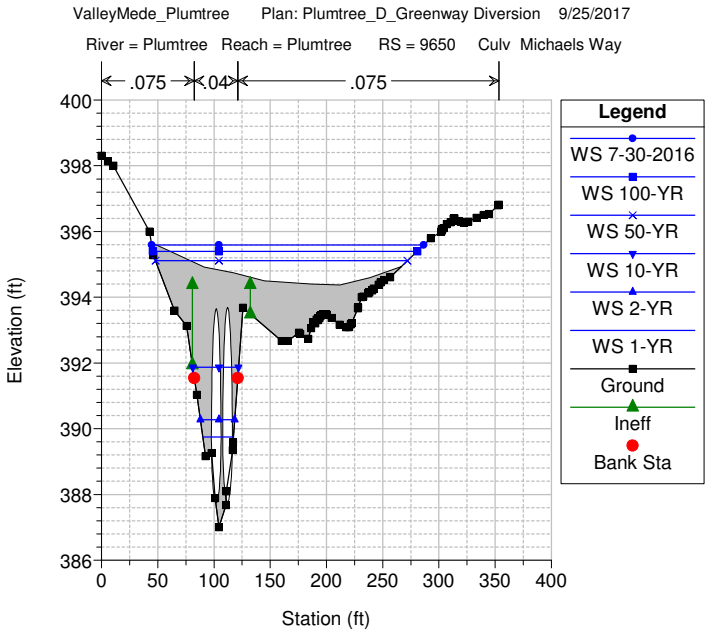

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 10286
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

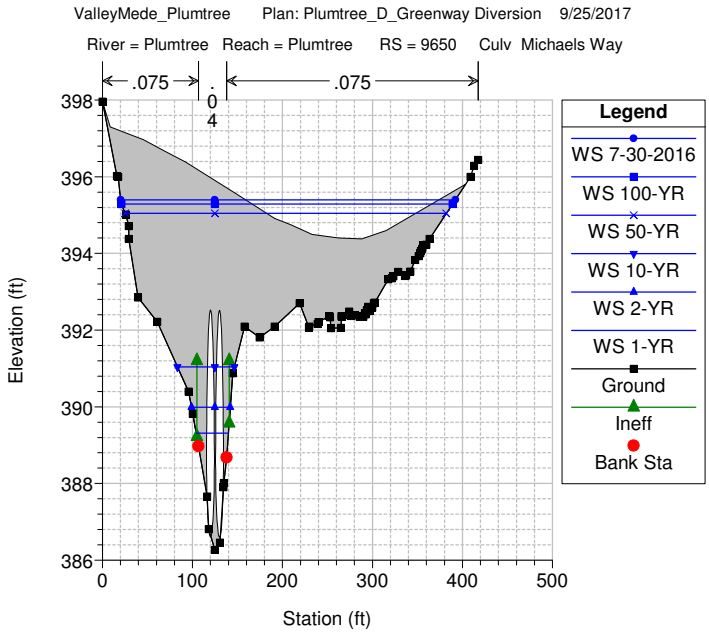

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 10044
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

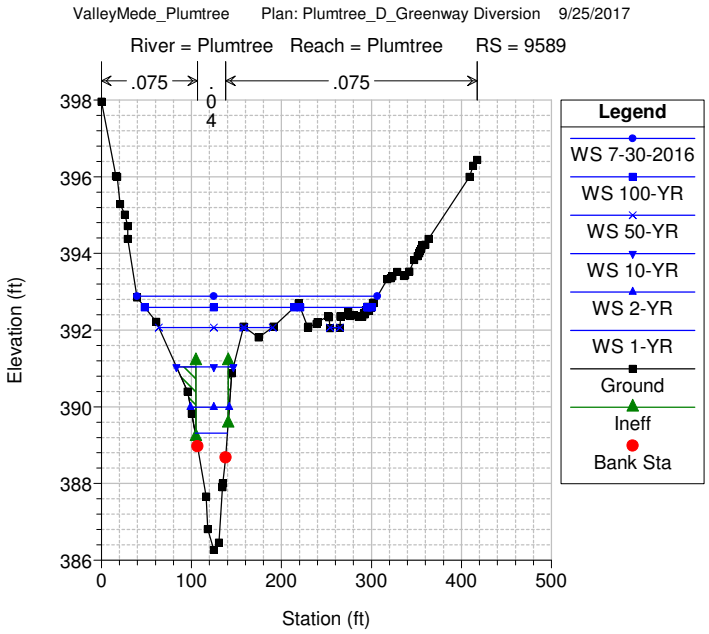

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 9814
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

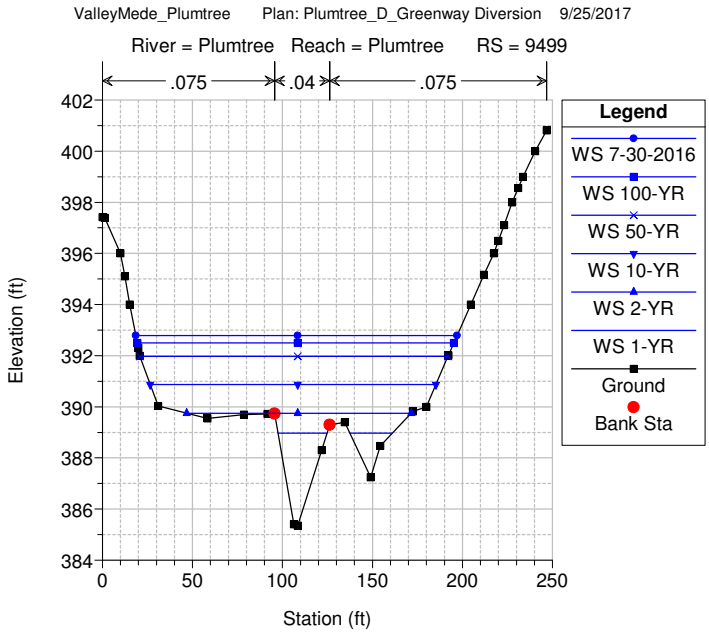

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 9762
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

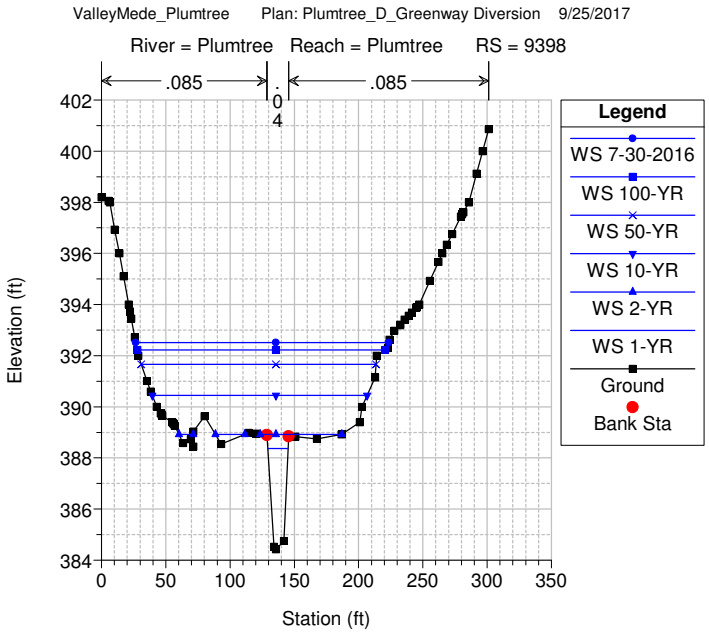

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 9732
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

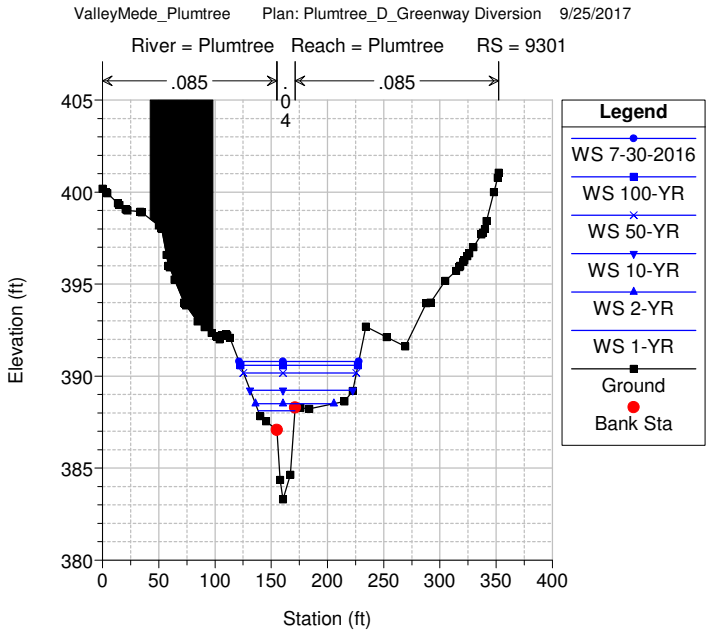

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

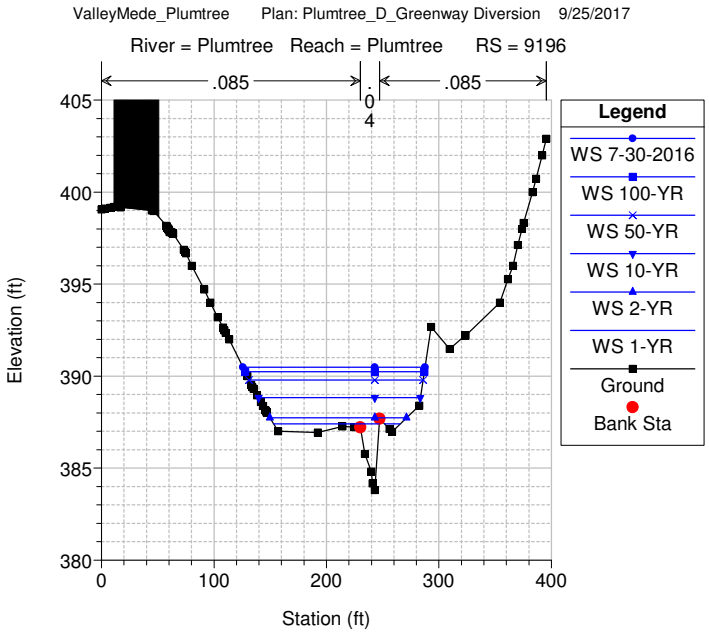

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

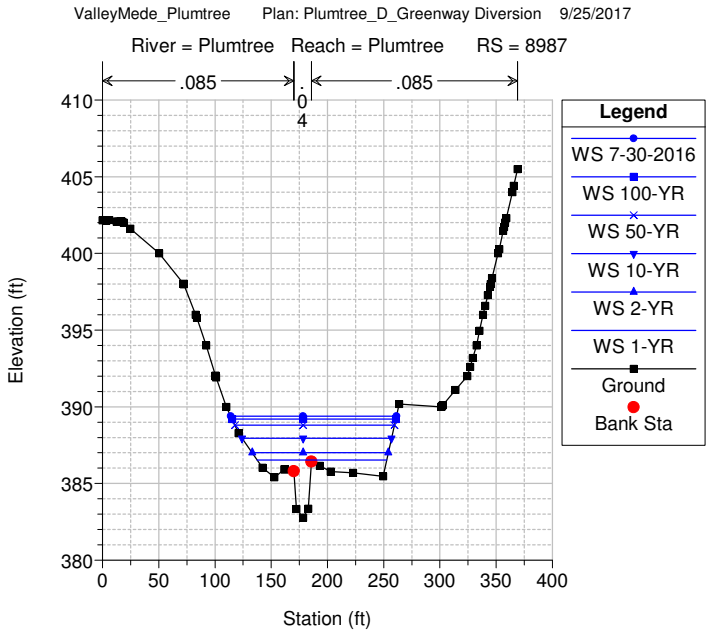

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 9589
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

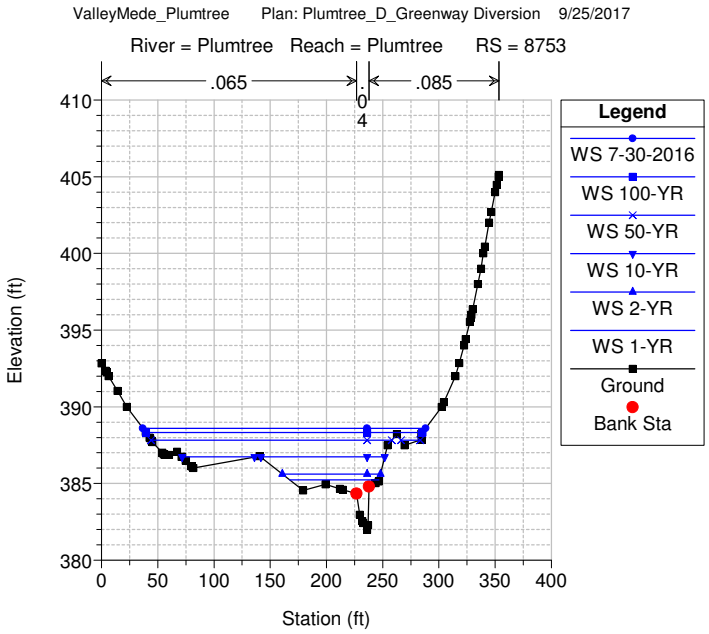

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 9499
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

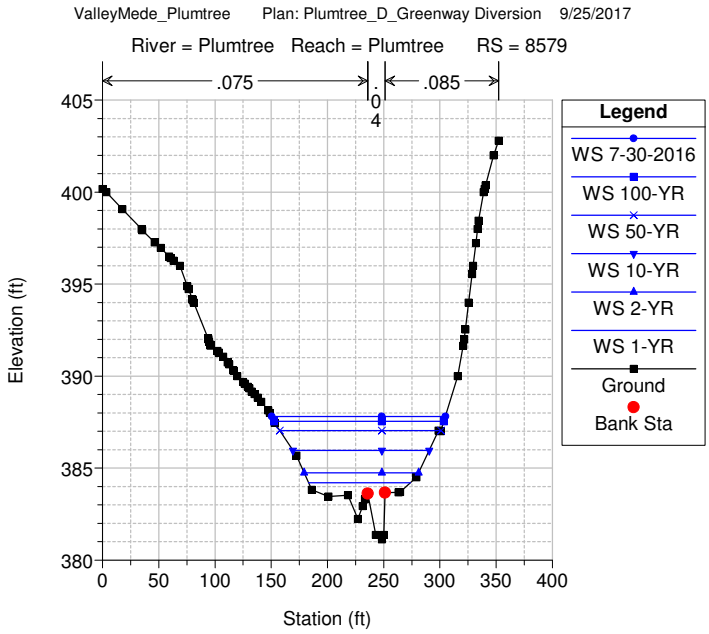

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 9398
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

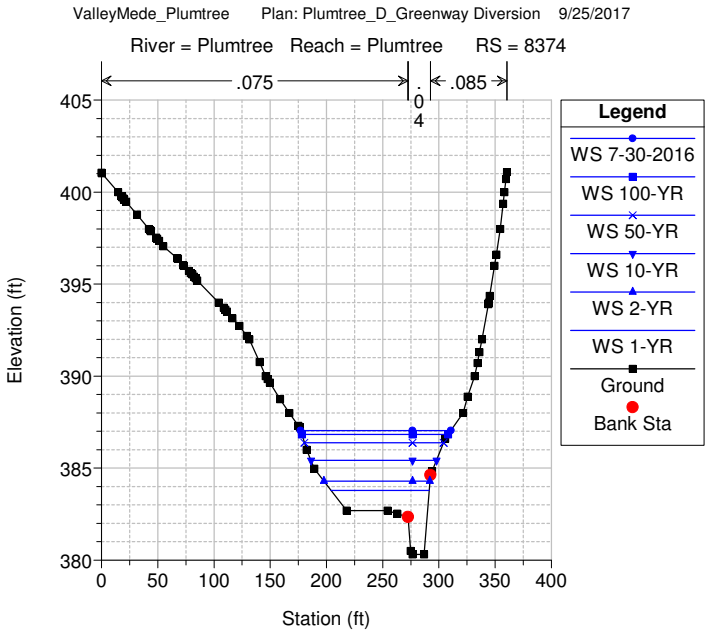

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 9301
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

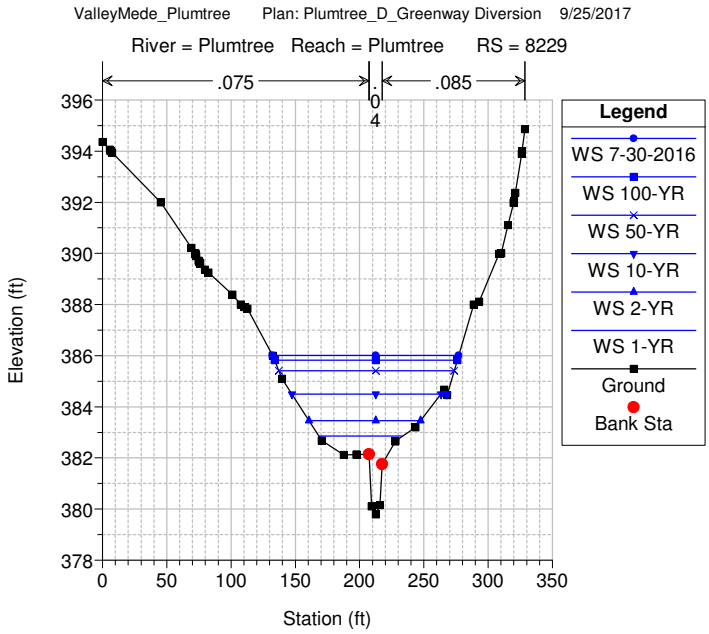

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 9196
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

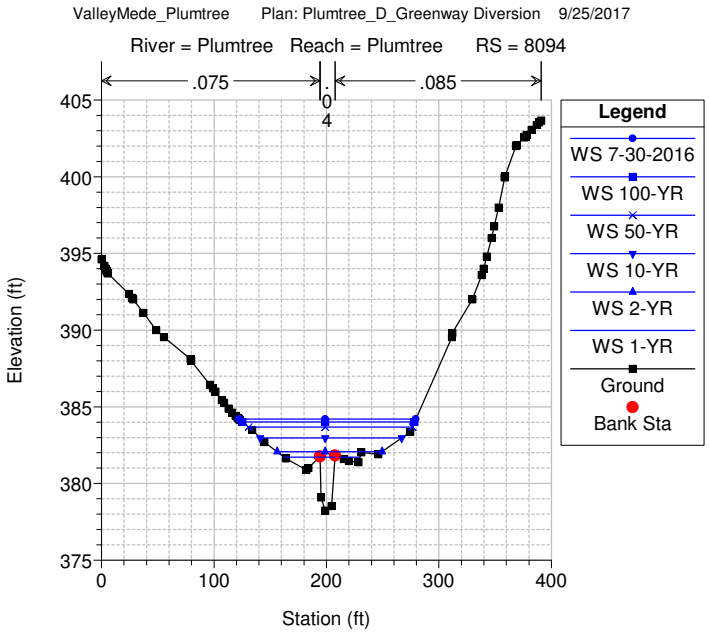

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8987
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

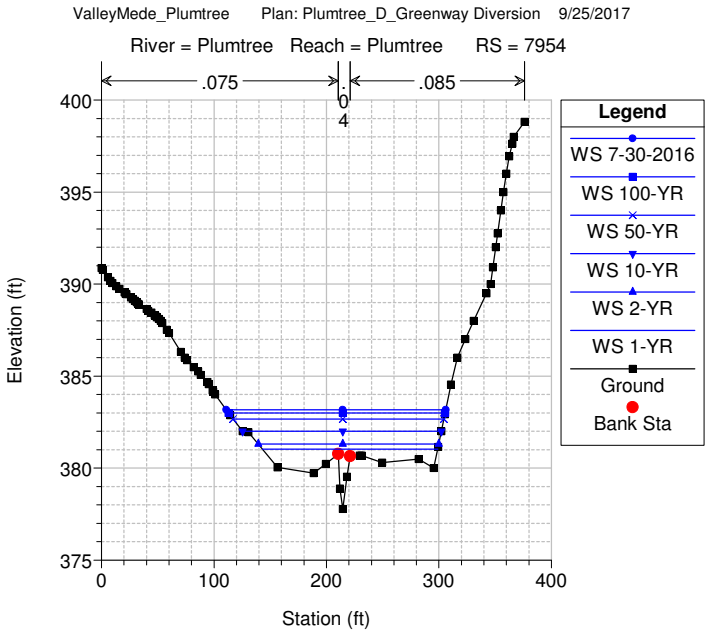

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8753
.065
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

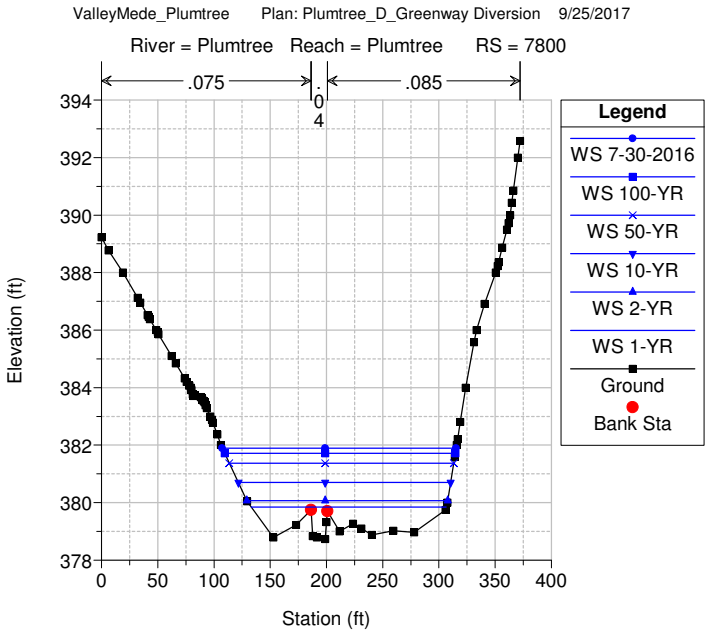

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8579
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

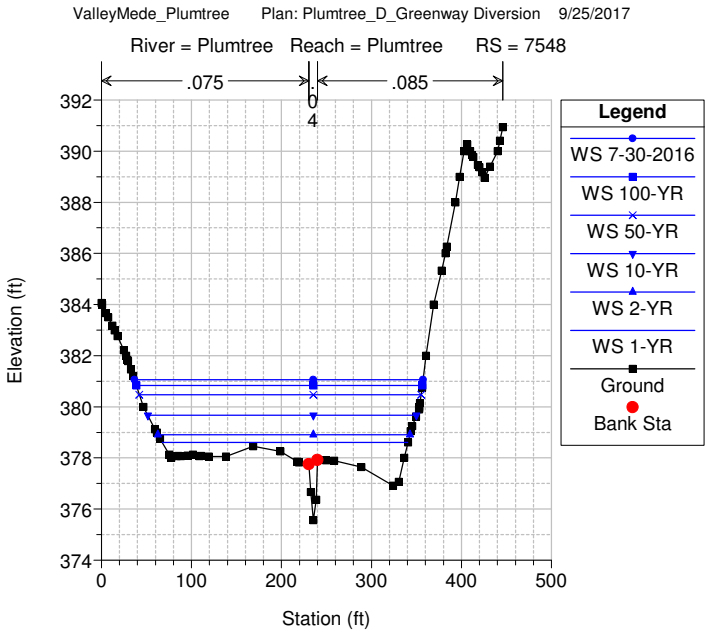

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8374
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

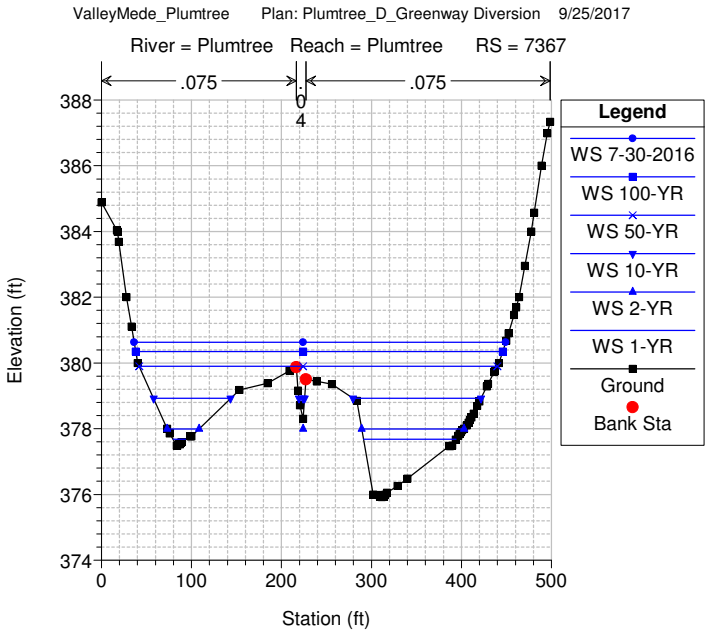

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8229
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

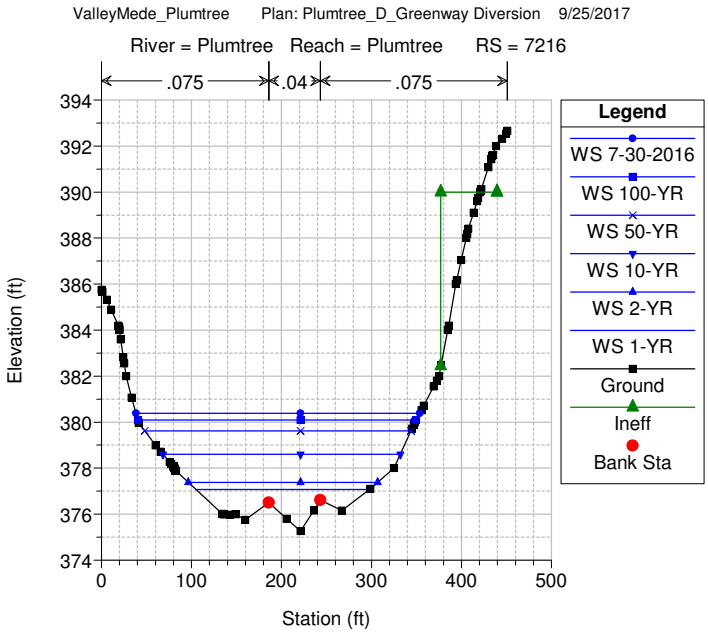

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 8094
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

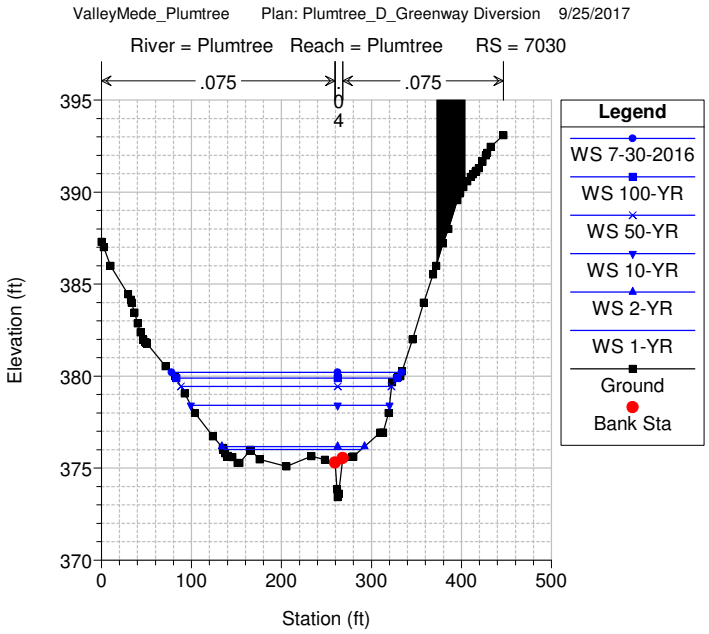

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7954
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

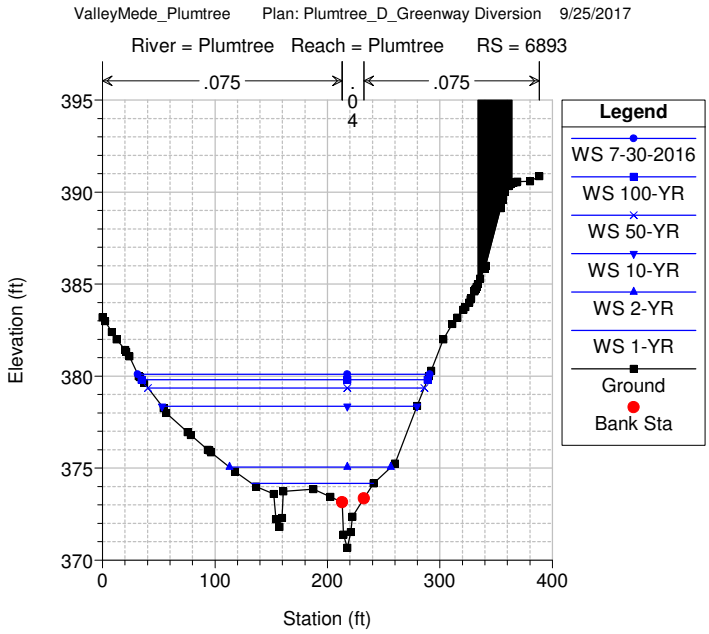

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7800
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

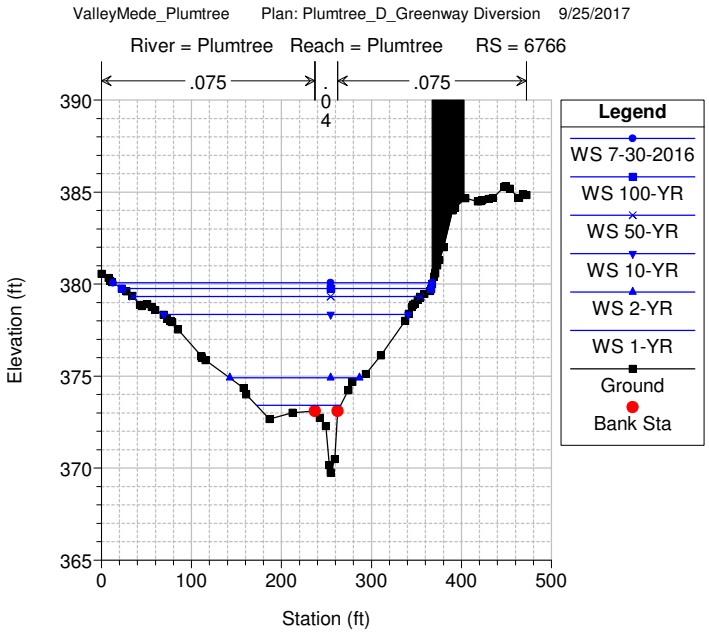

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7548
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

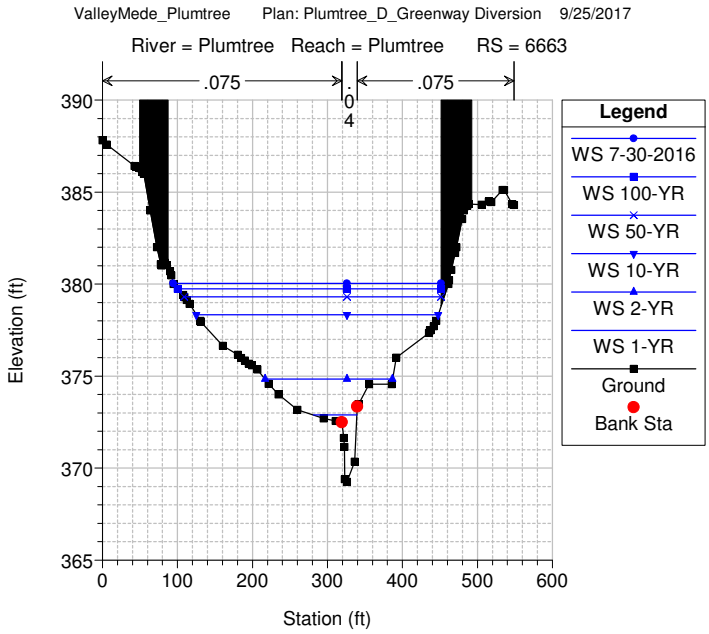

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7367
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

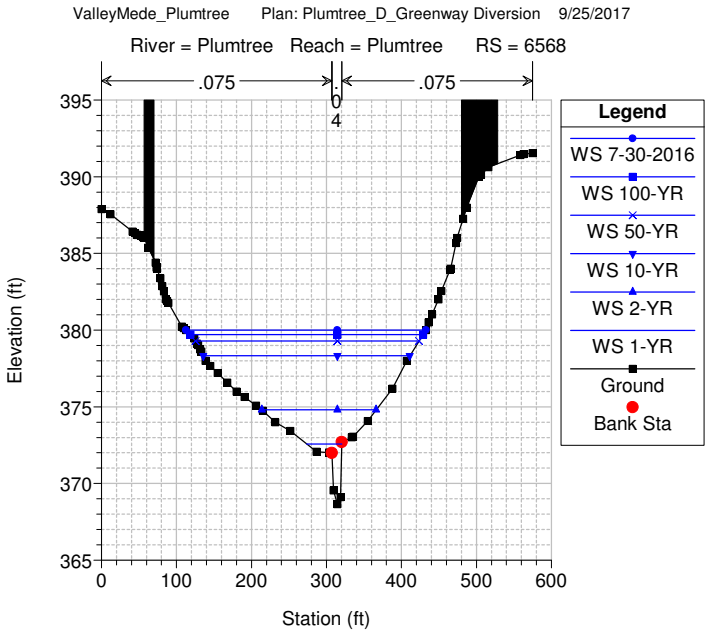

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7216
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

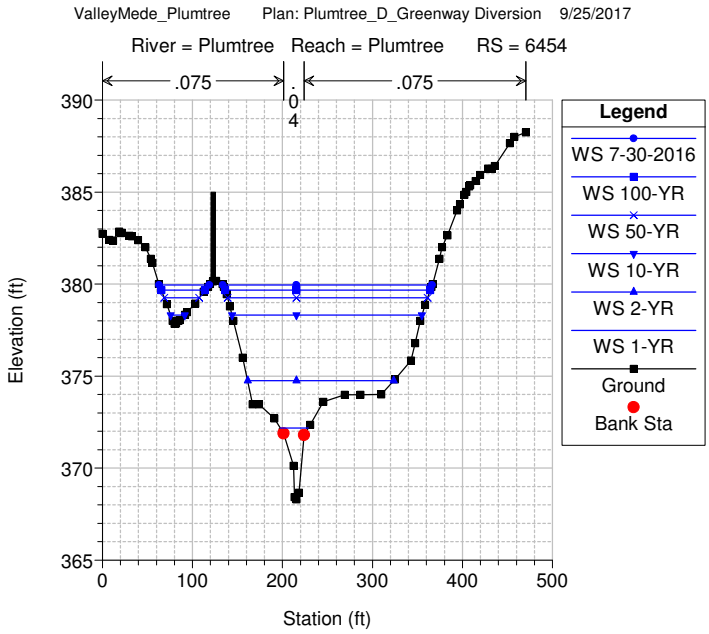

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 7030
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

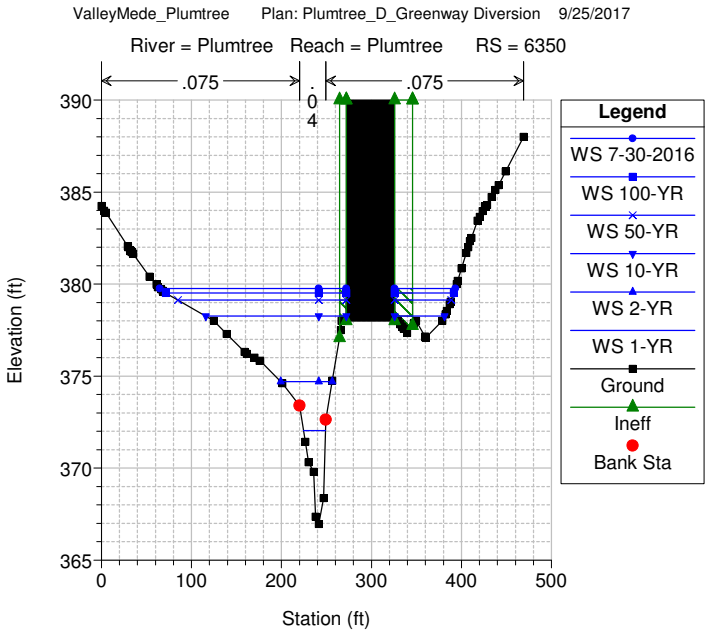

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6893
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

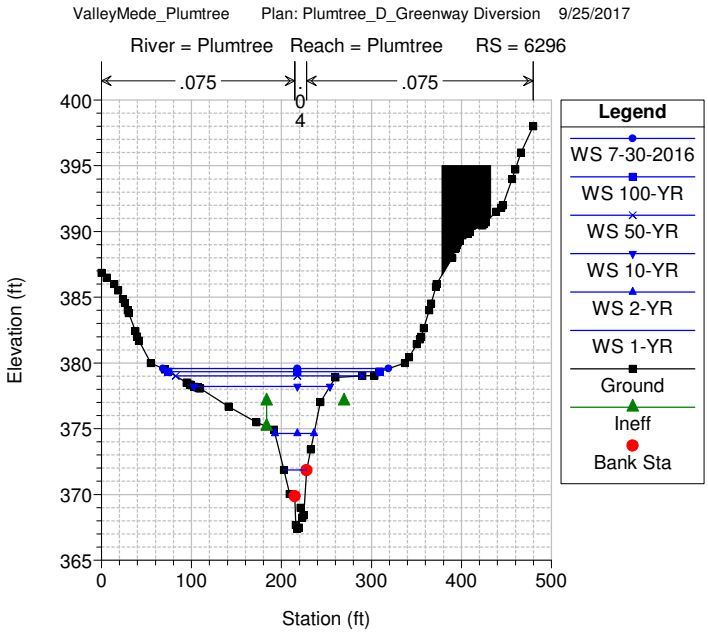

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6766
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

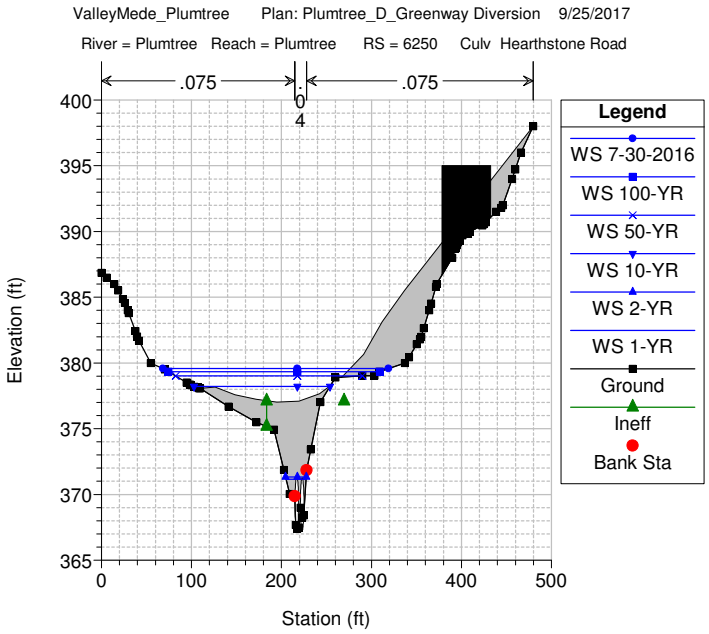

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6663
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

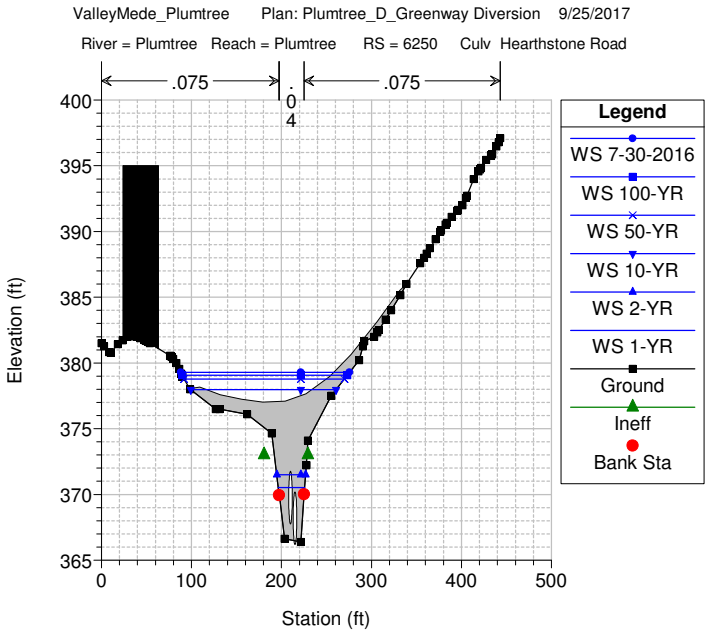

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6568
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

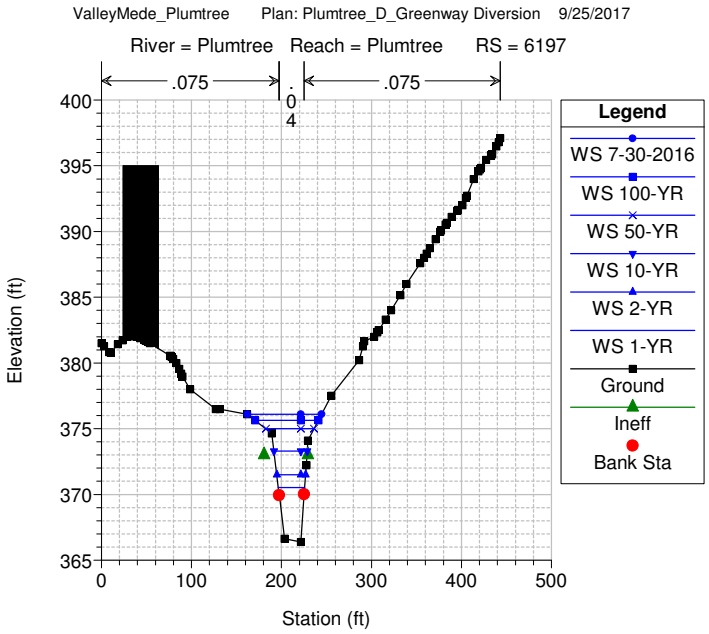

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6454
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

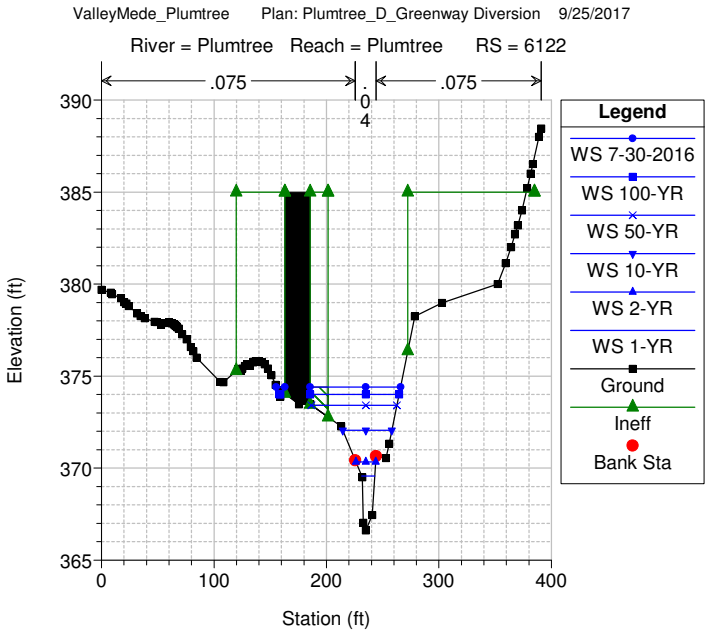

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6350
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

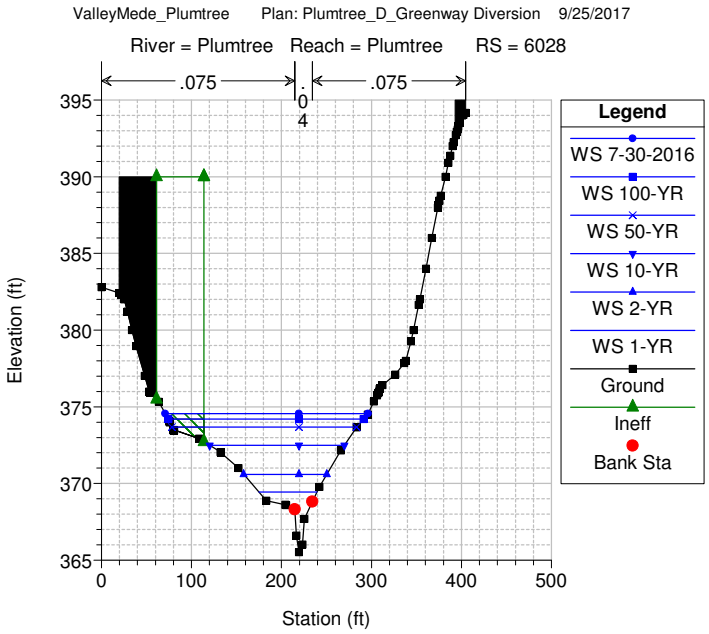

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6296
.075
.075
0
4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

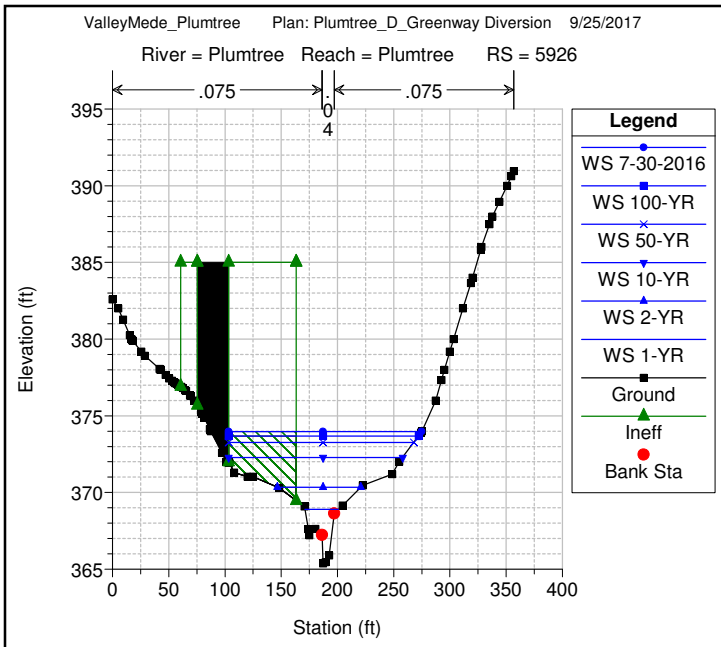

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
0
4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

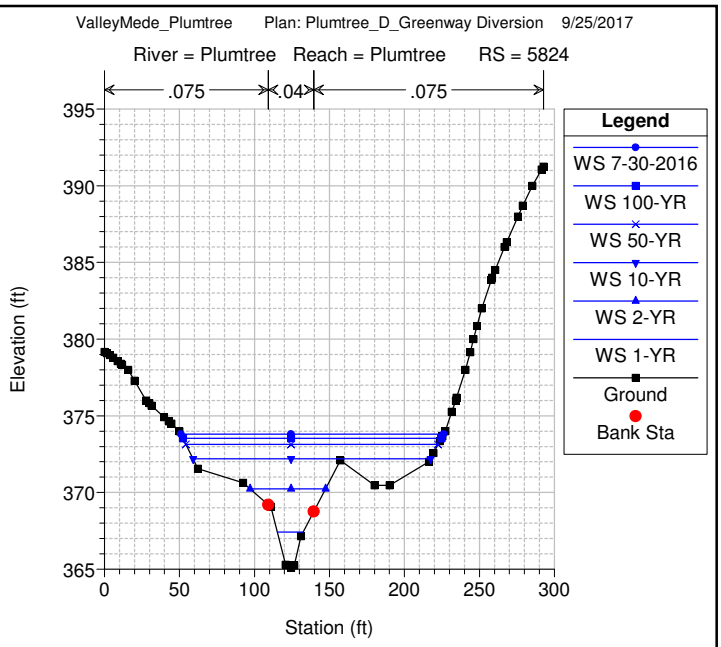

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
0
4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

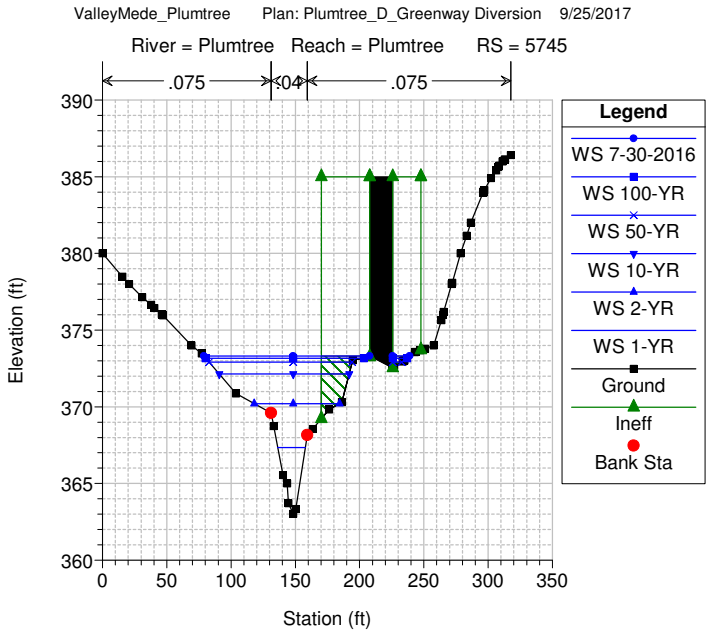

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6197
.075
.075
0
4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

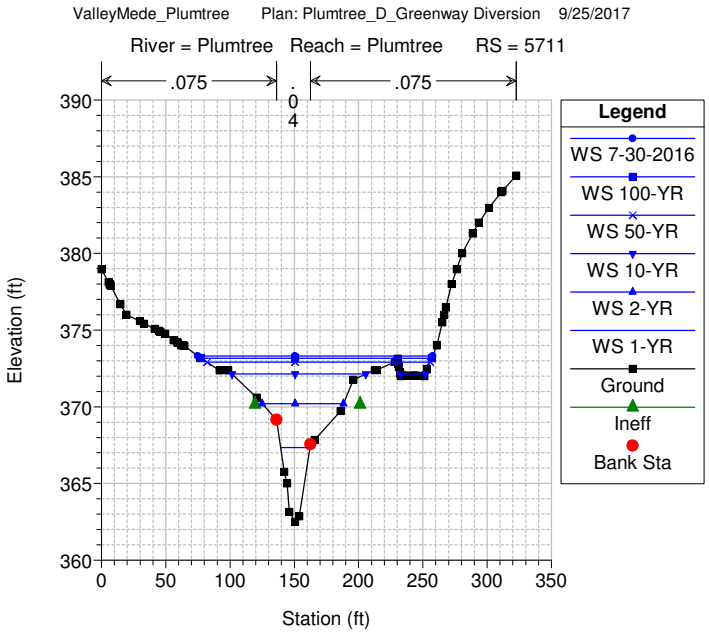

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6122
.075
.075
0
4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

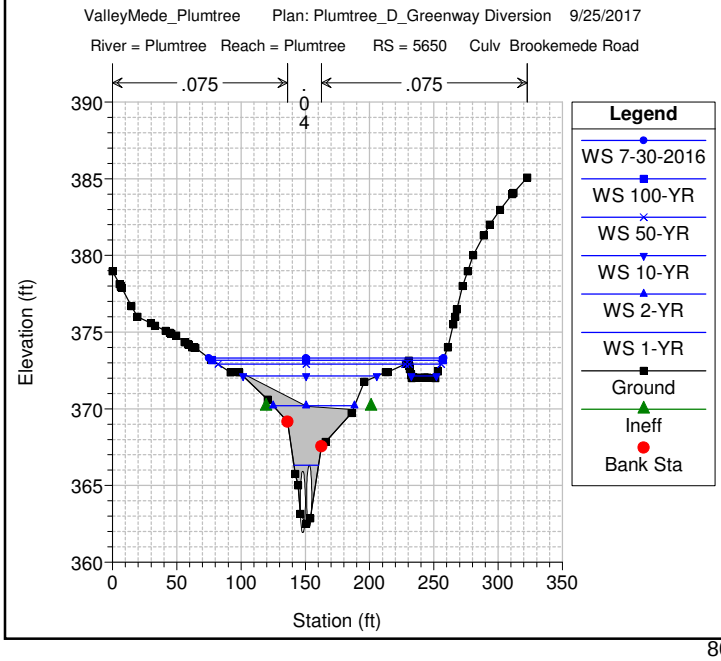

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 6028
.075
.075
0
4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

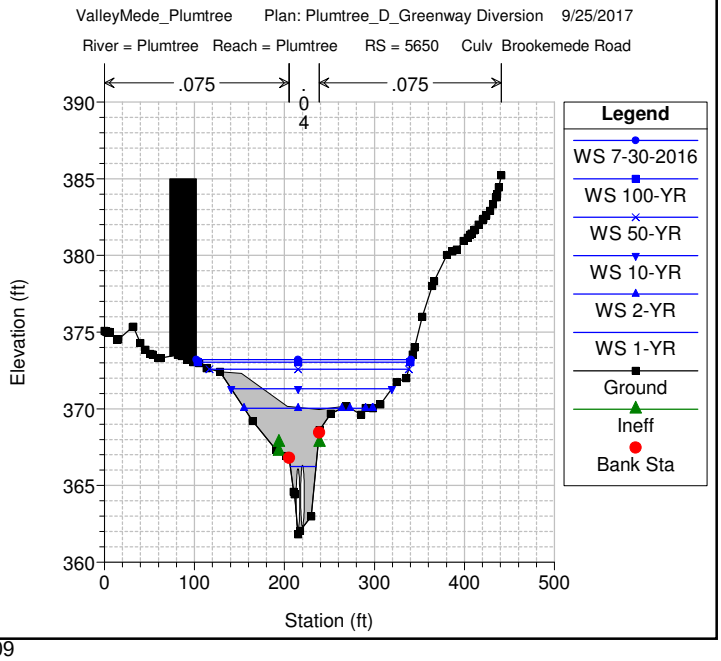

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5926
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

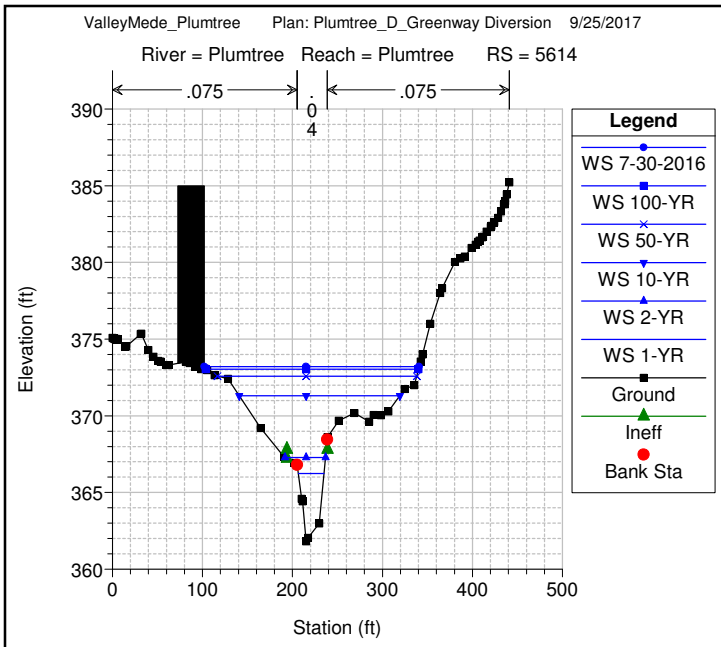

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5824
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

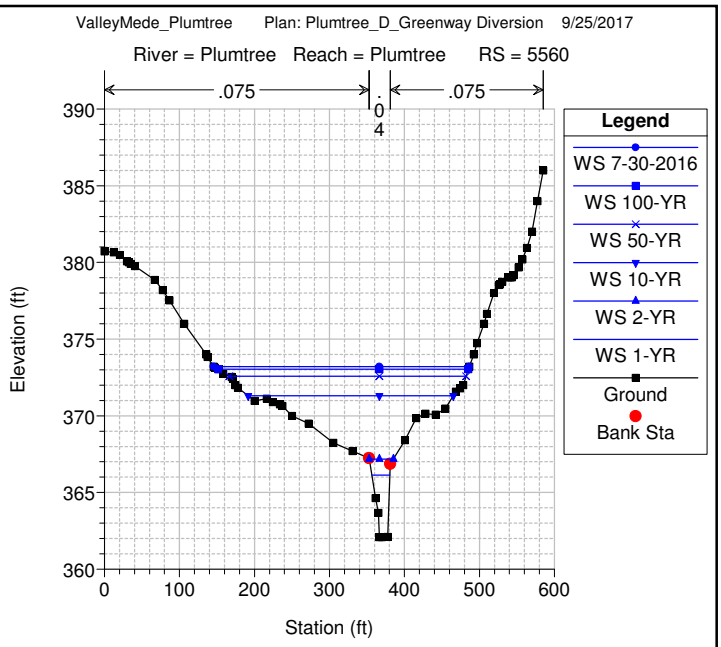

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5745
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

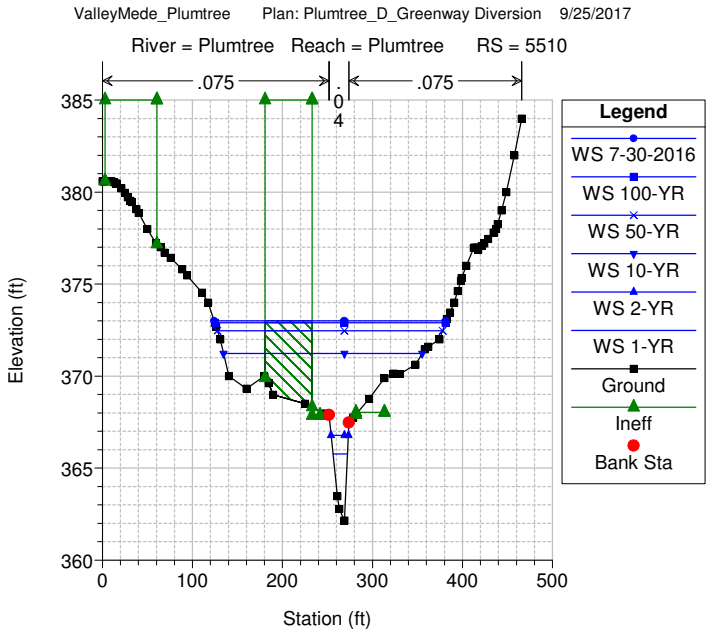

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5711
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

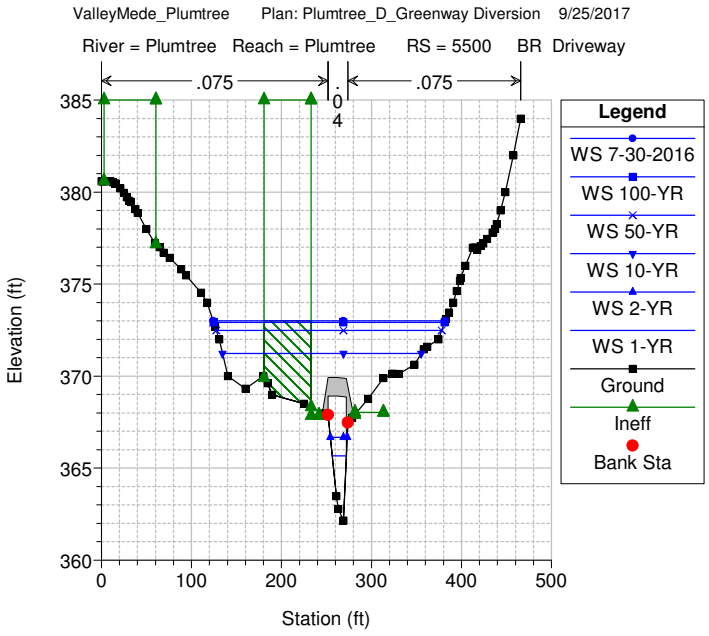

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

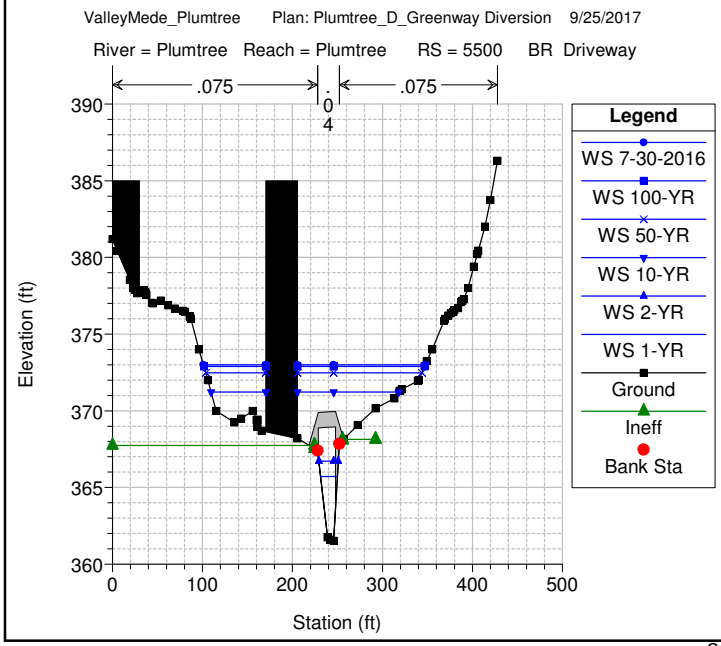

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

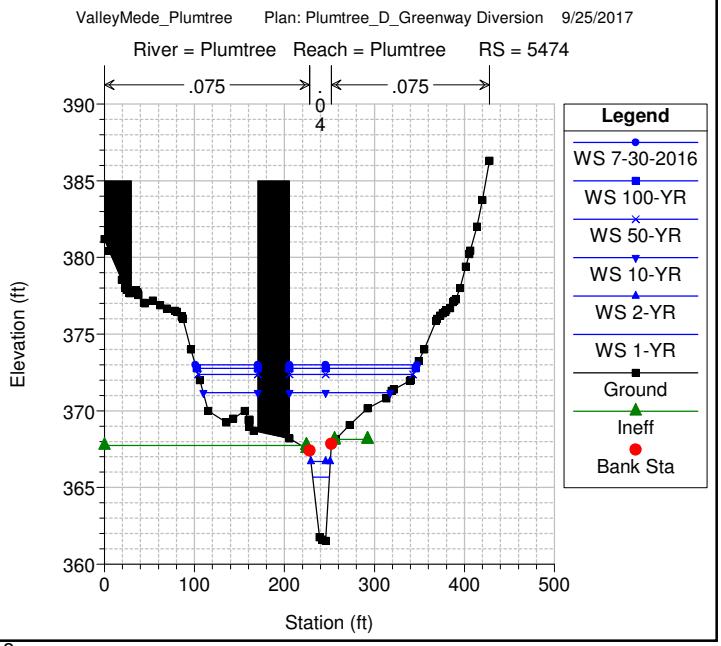

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5614
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

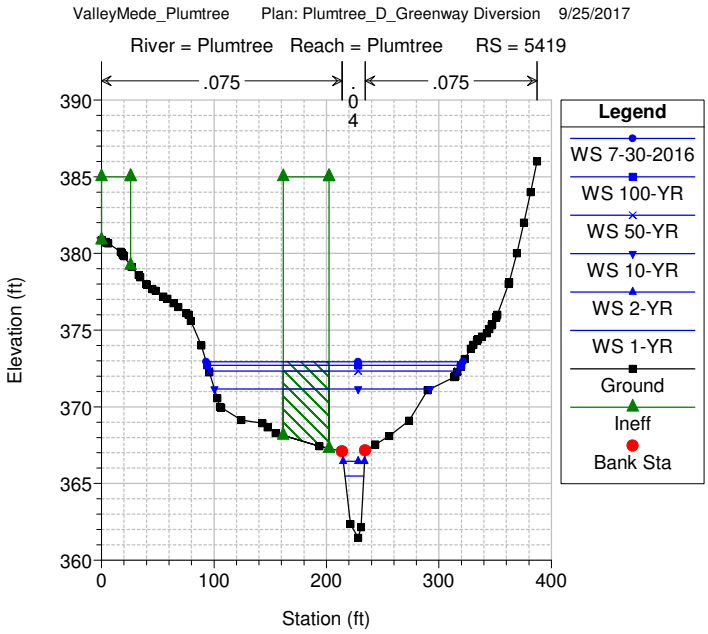

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5560
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

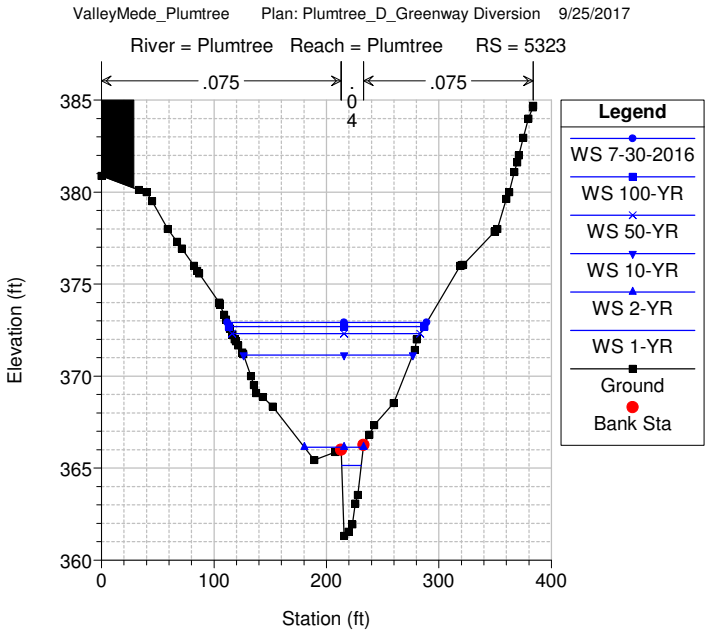

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5510
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

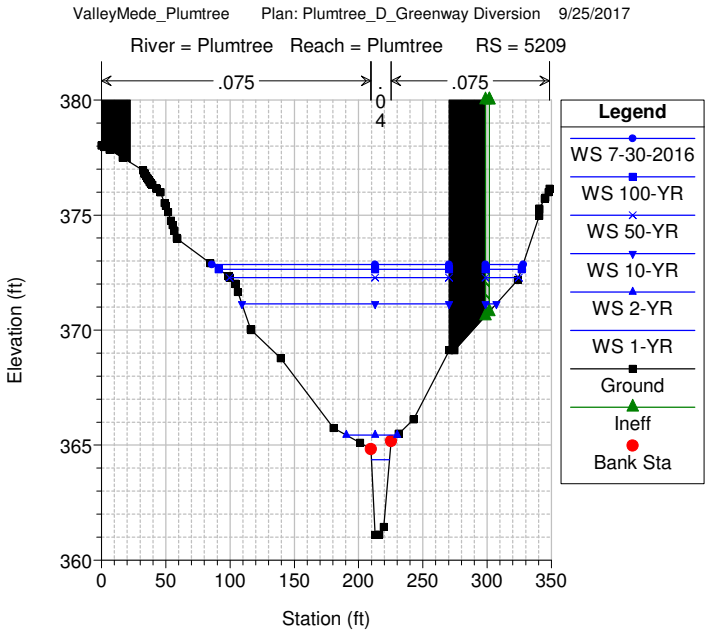

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

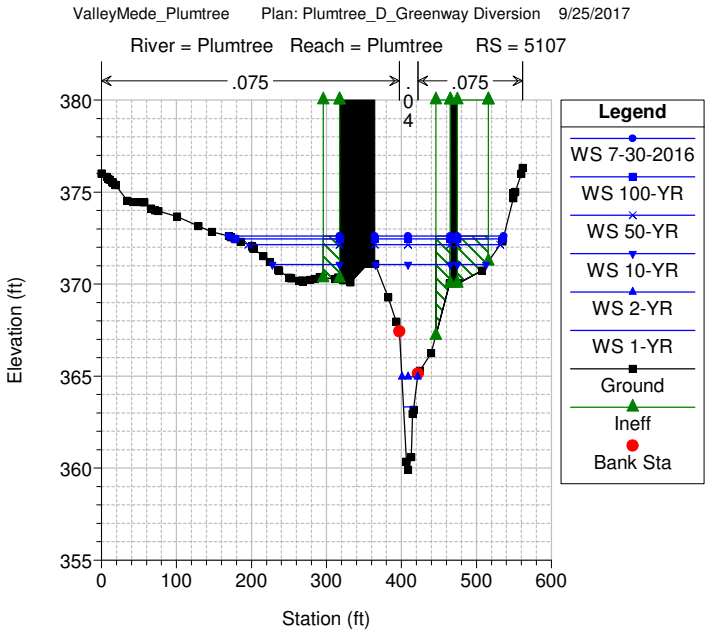

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

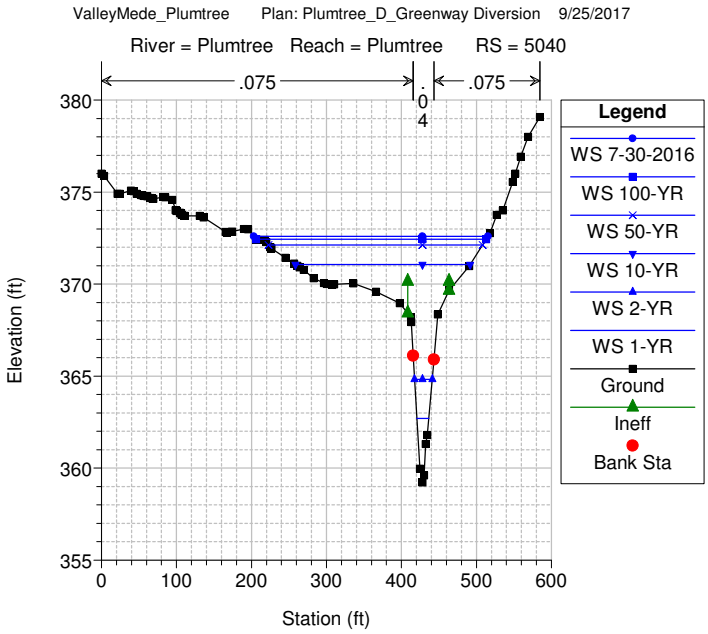

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5474
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

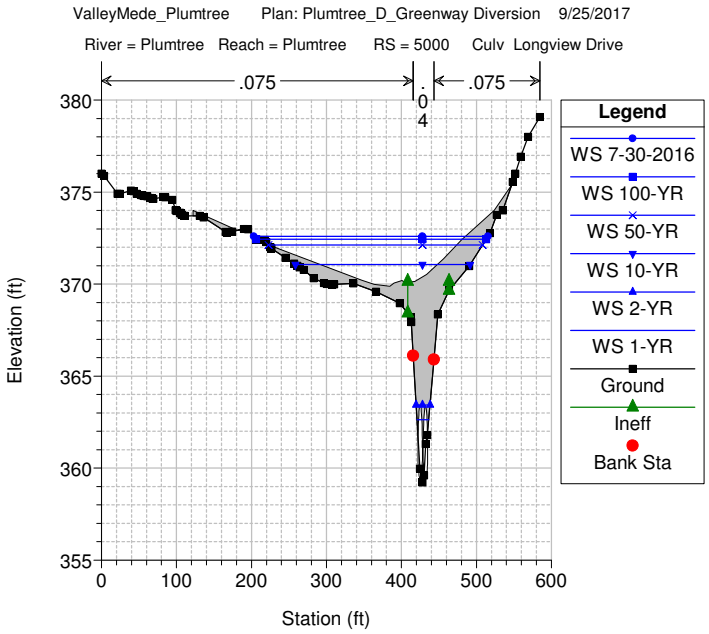

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5419
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

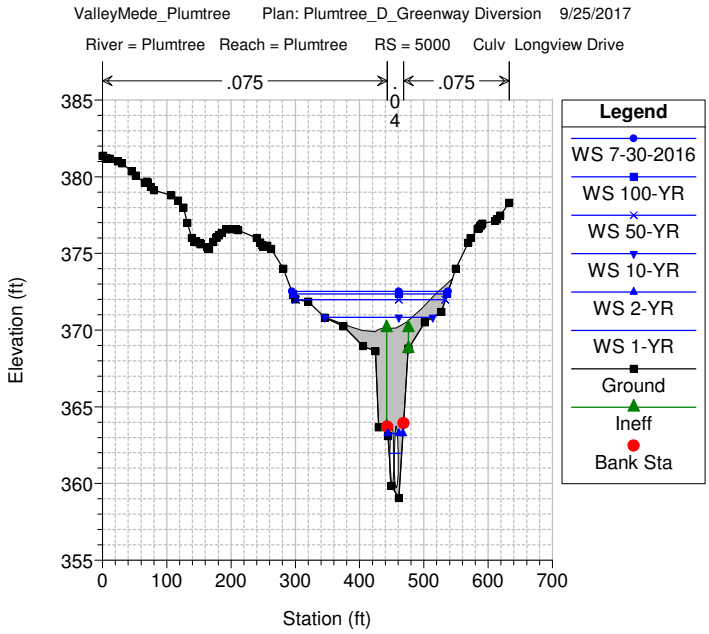

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5323
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

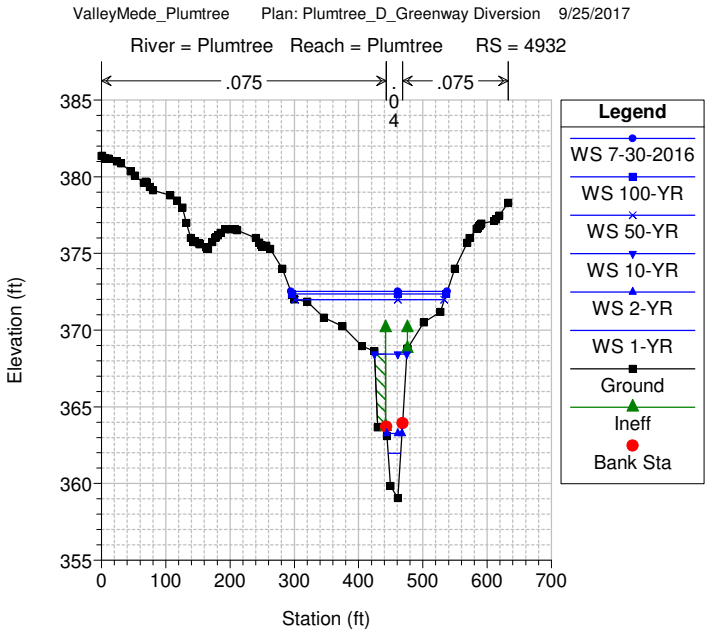

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5209
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

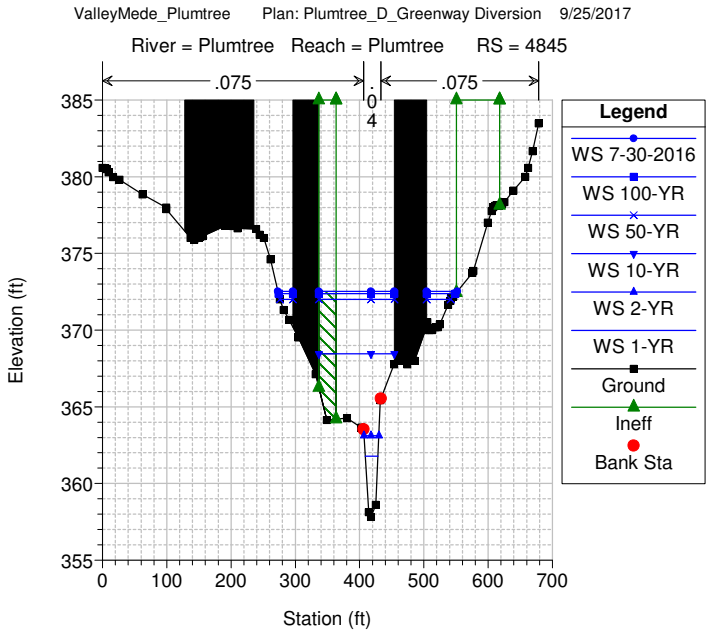

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5107
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

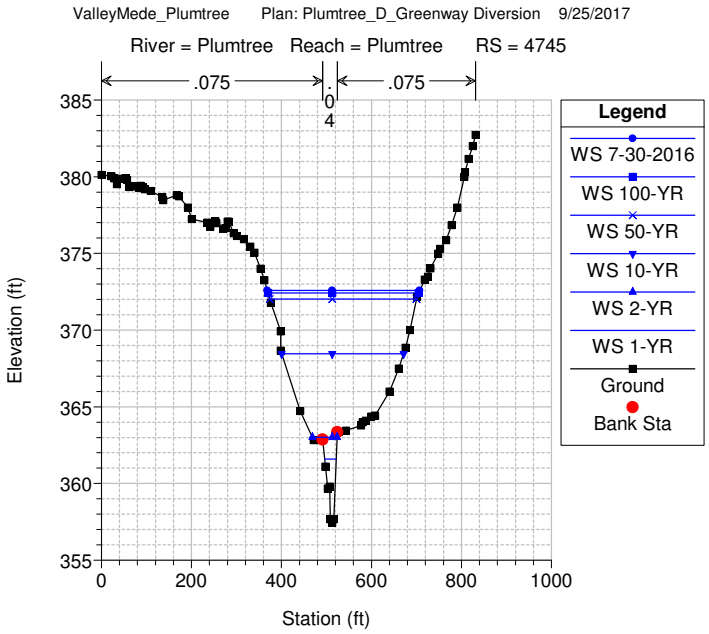

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5040
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

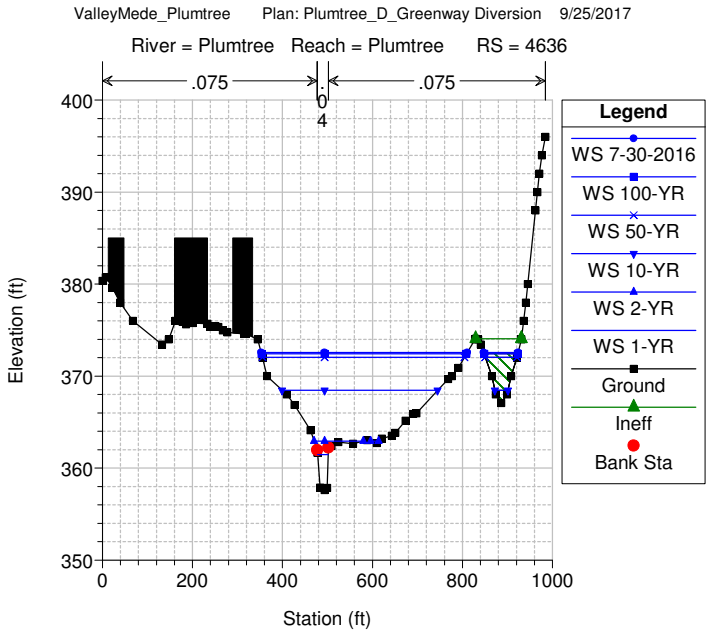

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

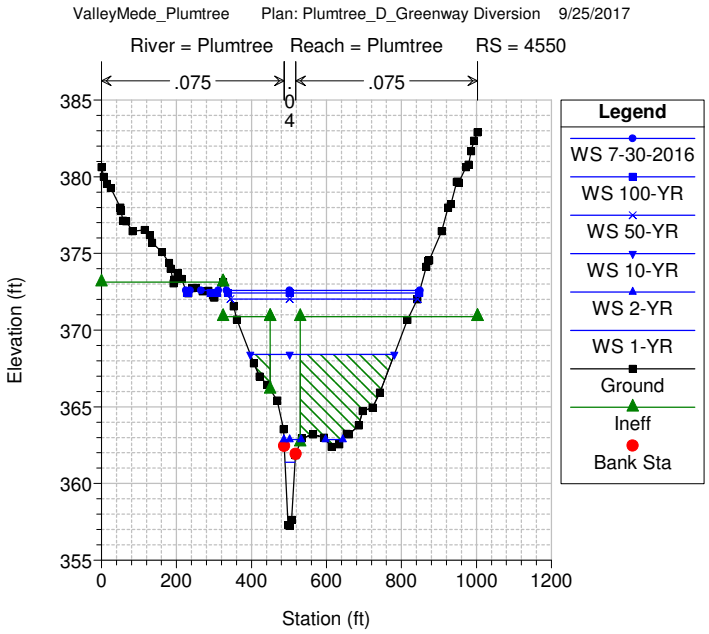

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

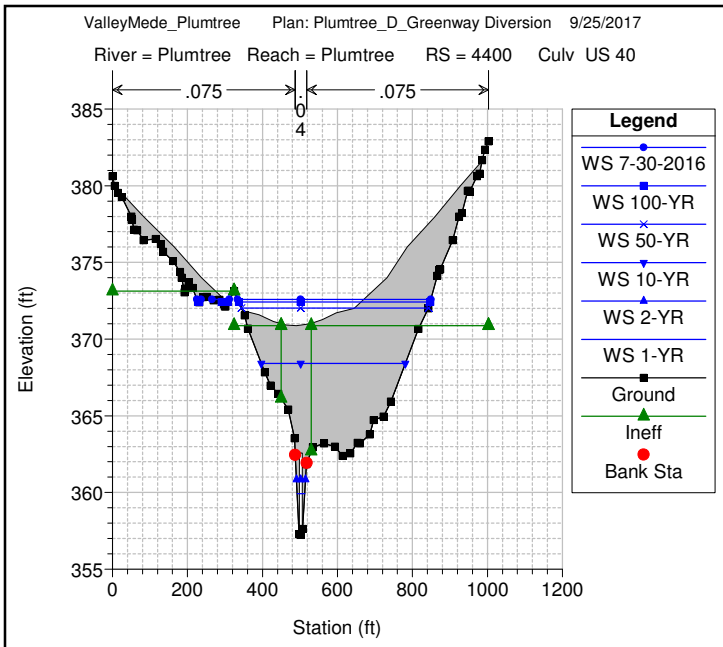

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4932
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

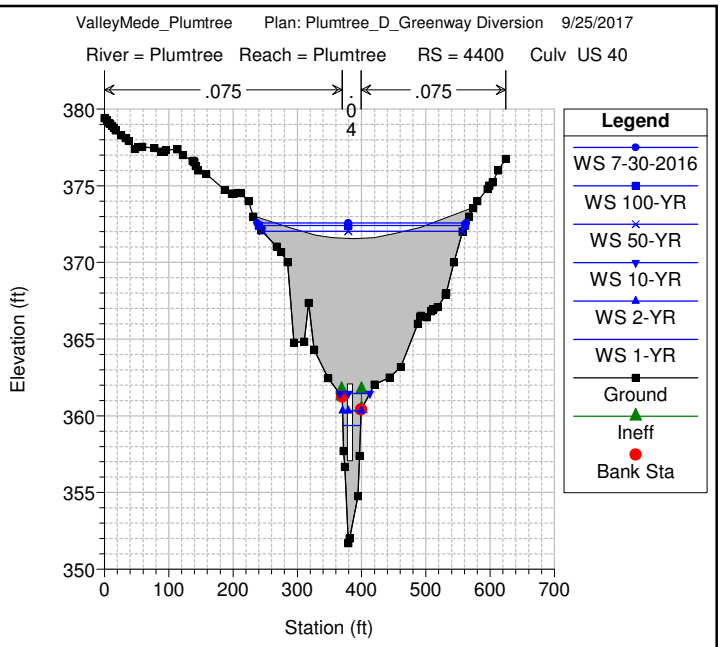

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4845
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

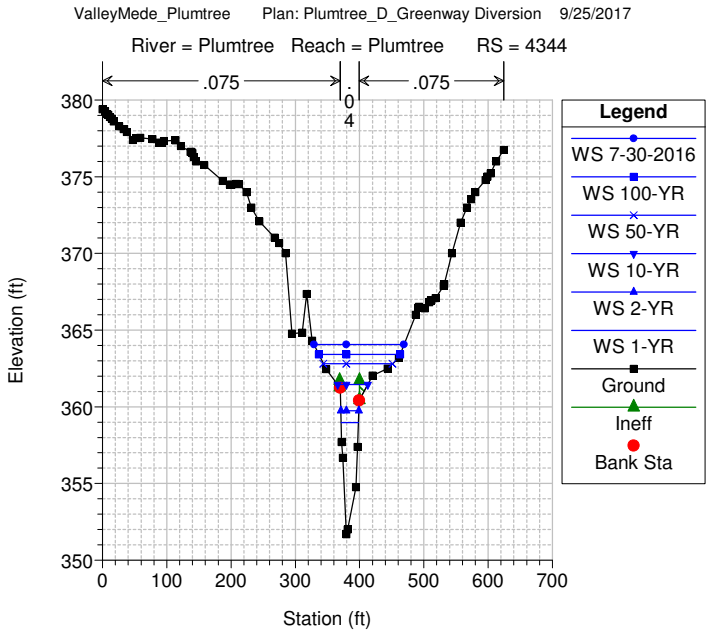

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4745
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

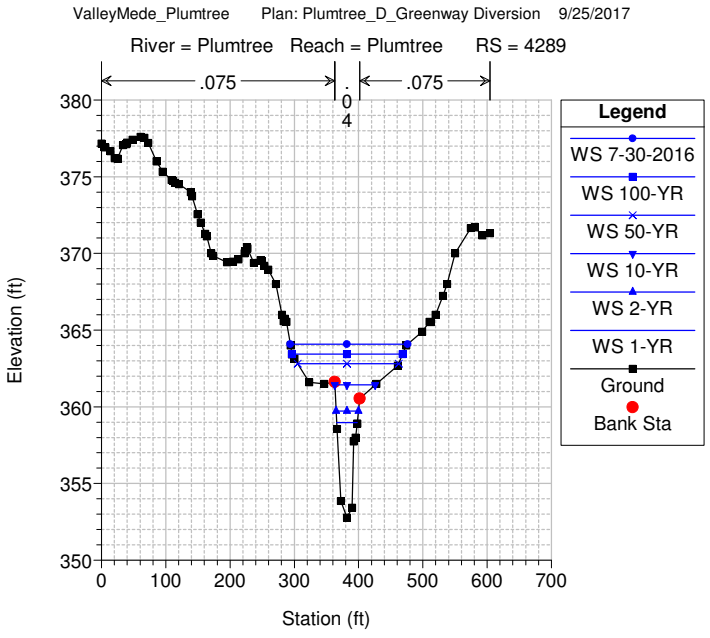

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4636
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

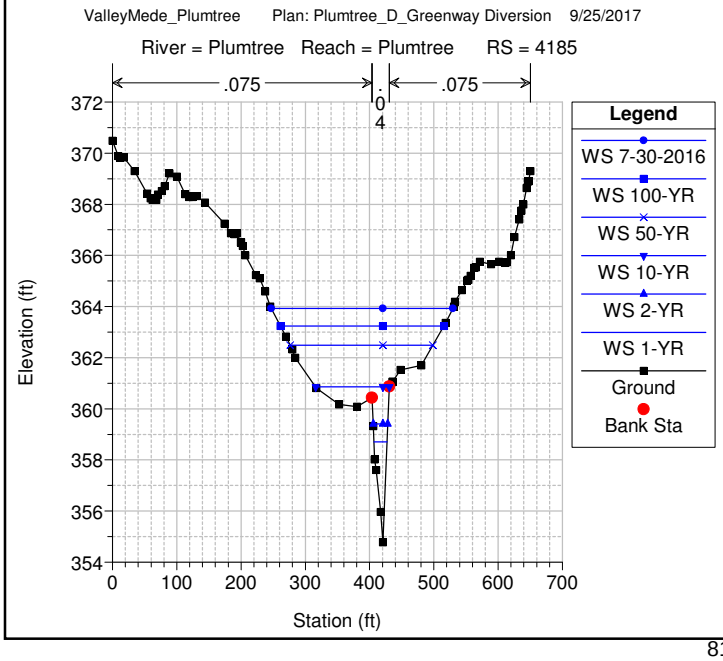

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4550
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

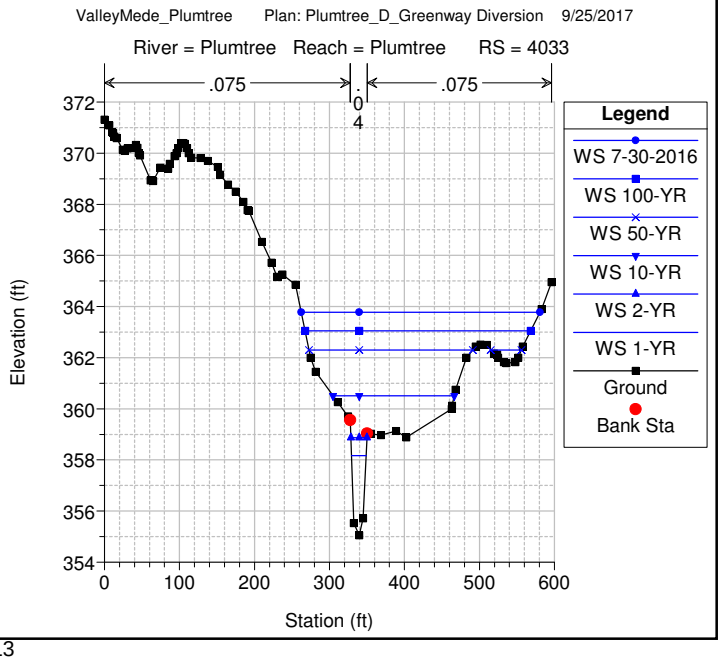

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

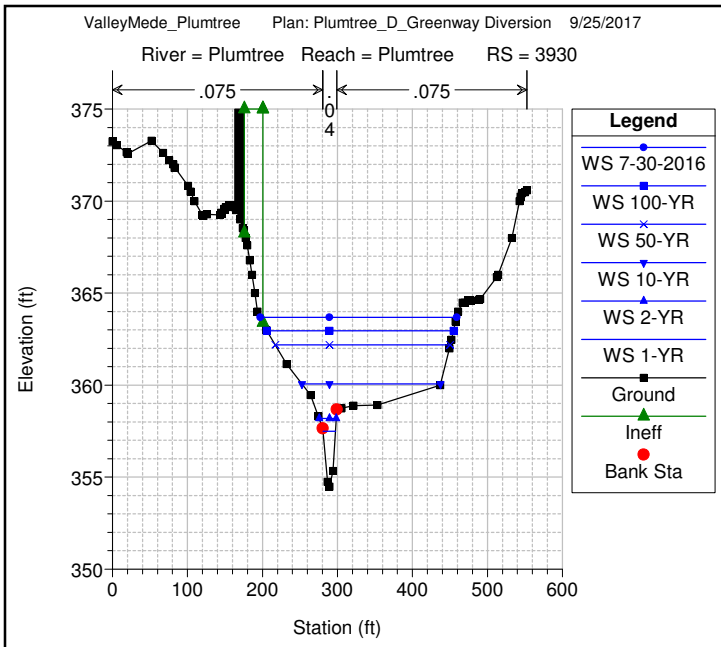

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

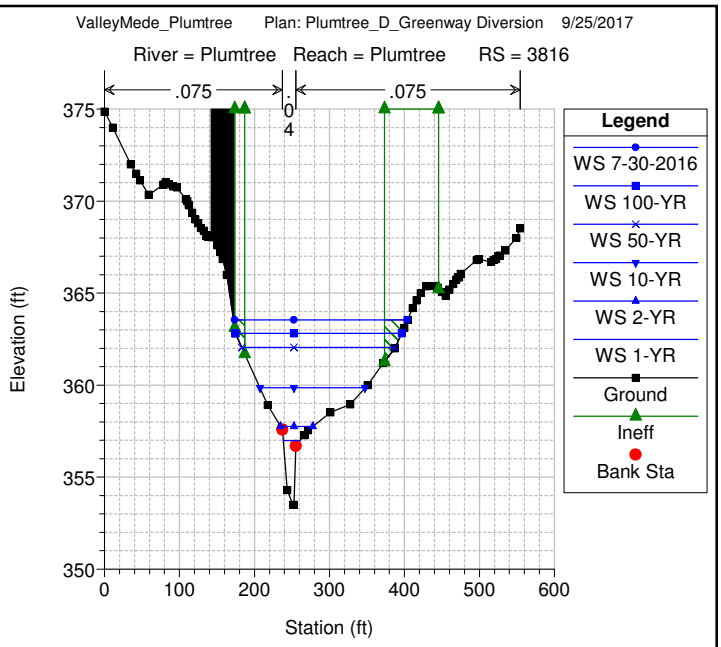

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4344
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

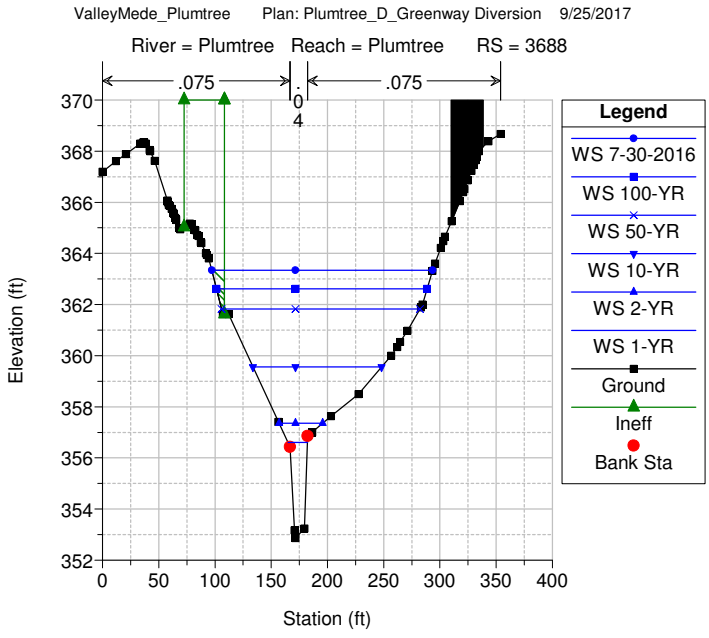

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4289
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

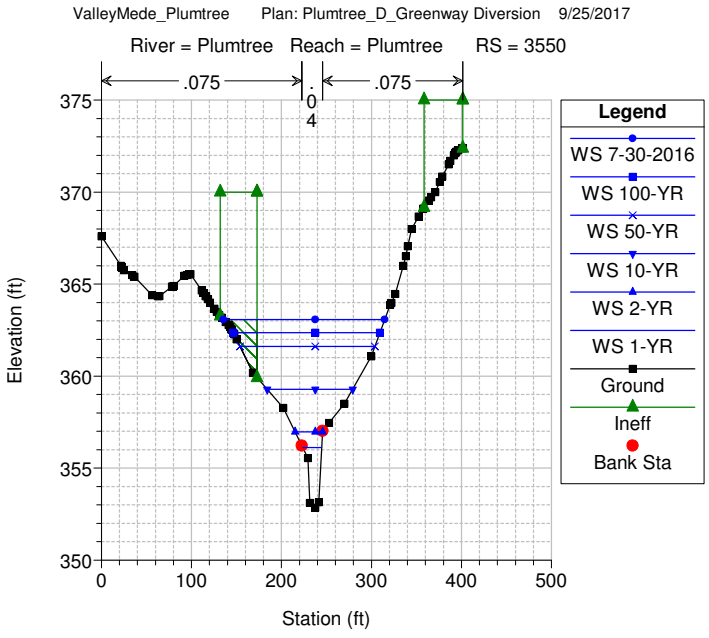

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4185
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

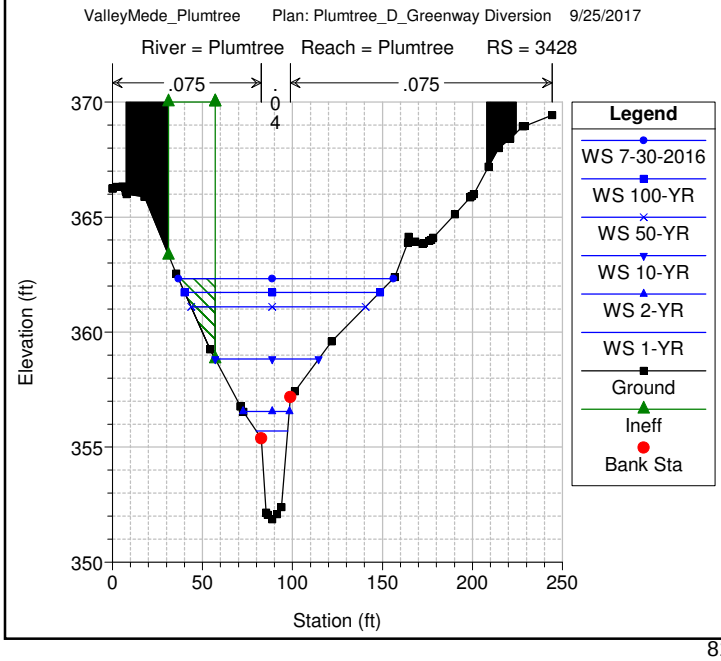

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 4033
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

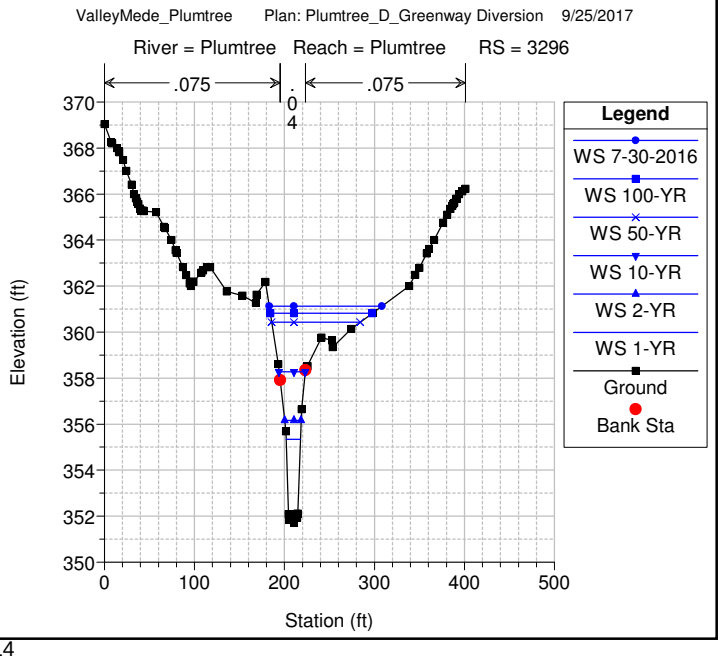

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3930
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

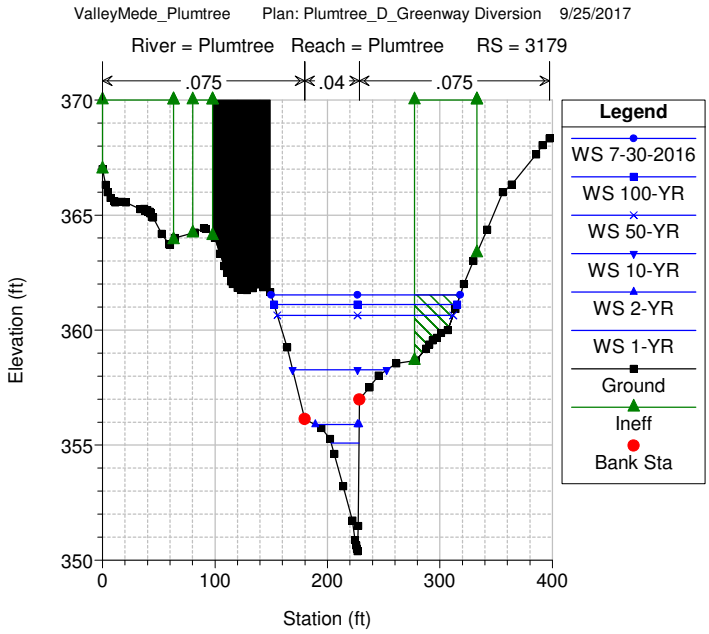

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3816
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

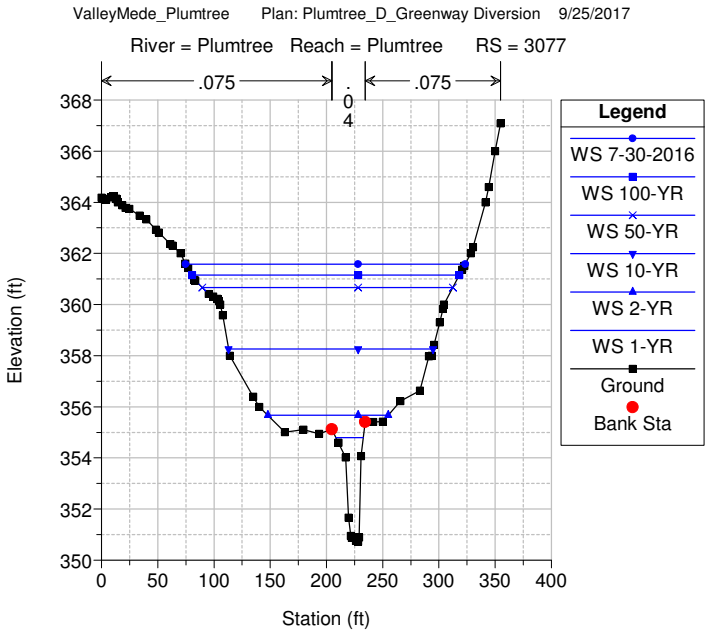

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3688
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

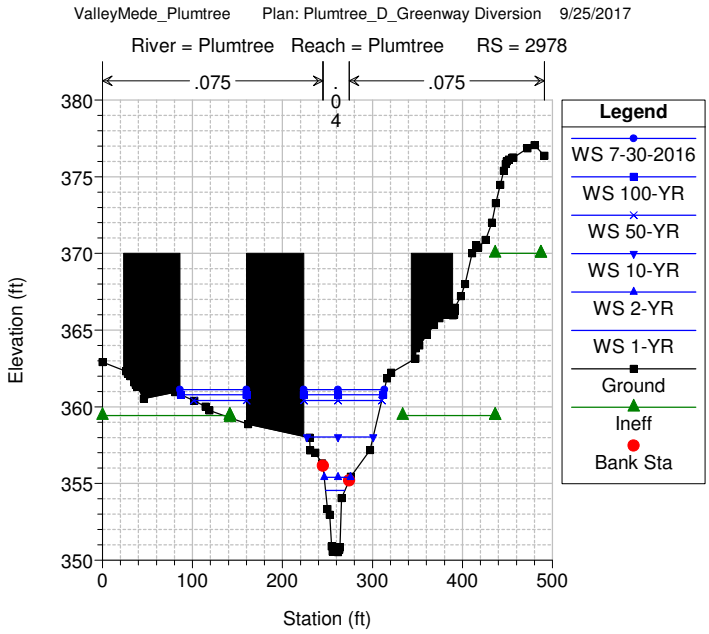

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3550
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

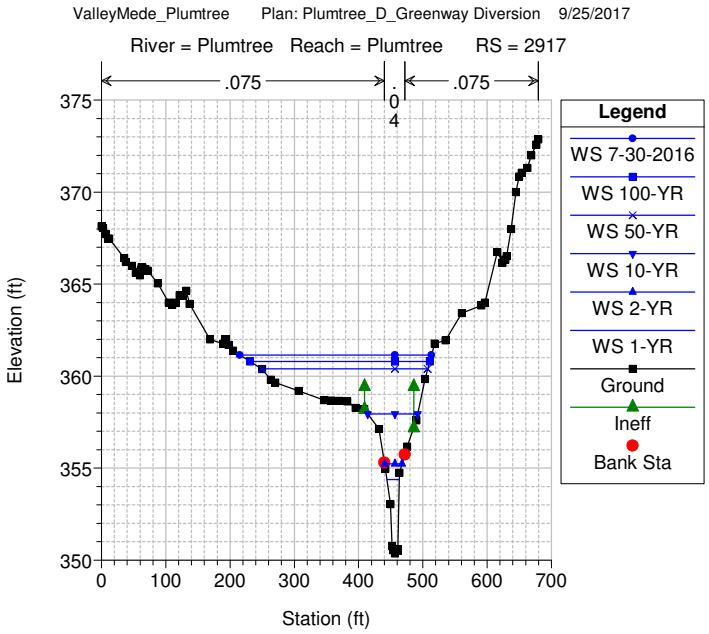

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3428
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

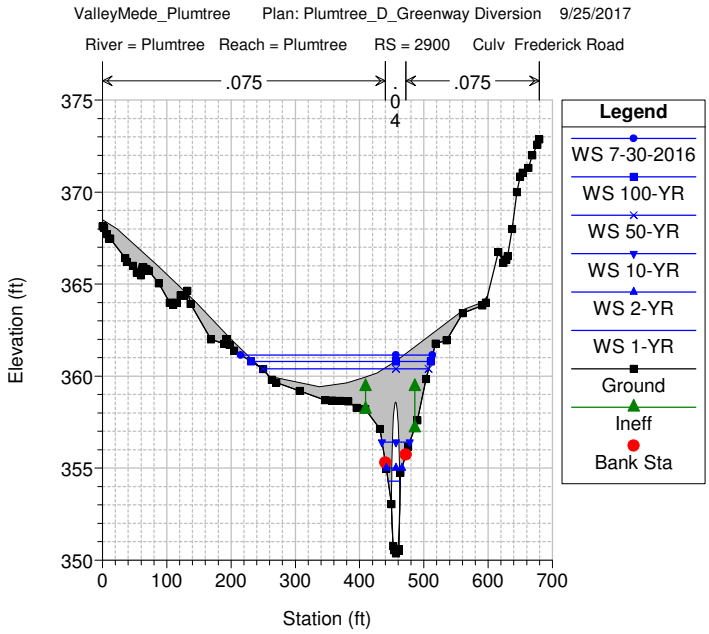

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3296
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

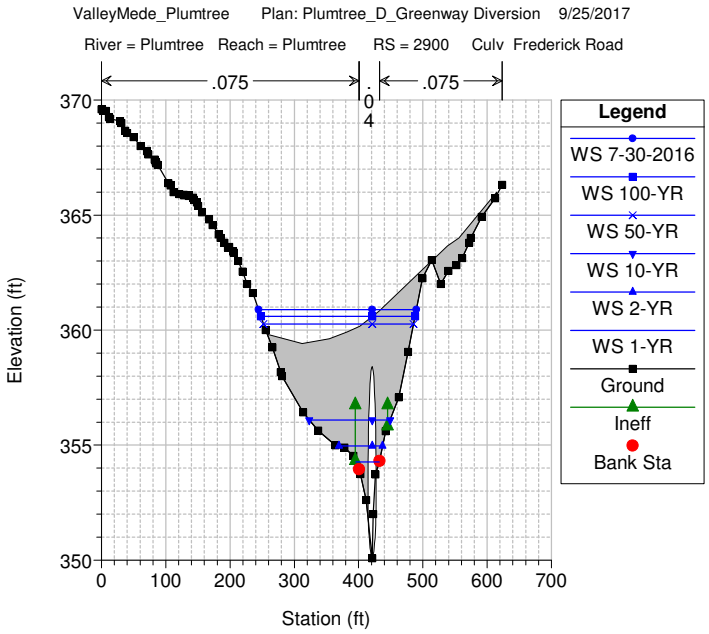

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3179
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

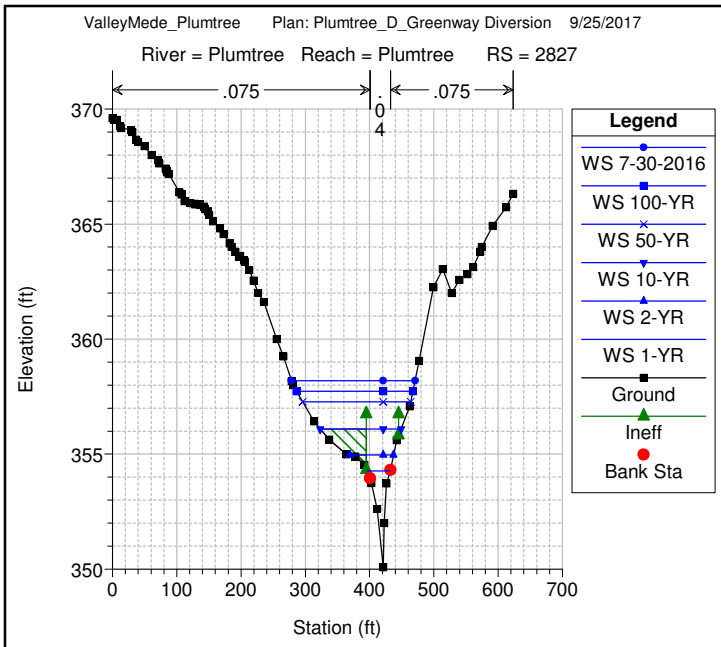

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 3077
.075
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

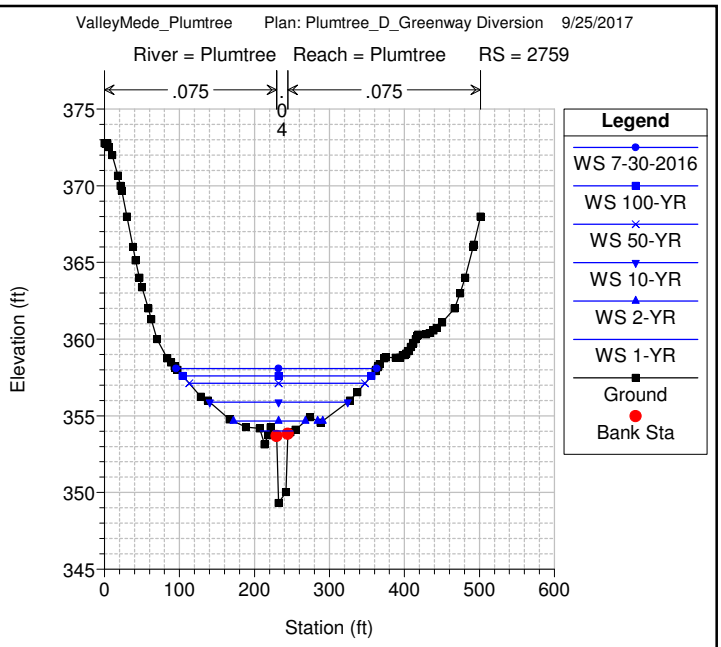

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2978
.075
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

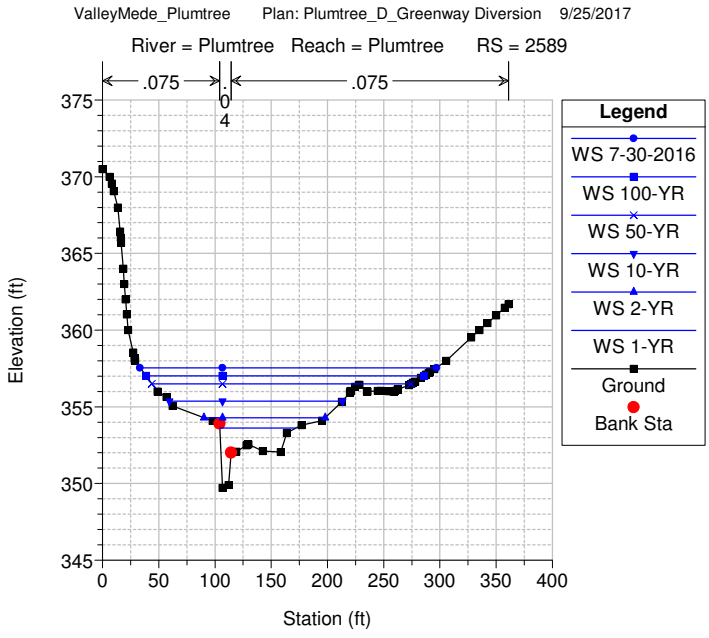

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2917
.075
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

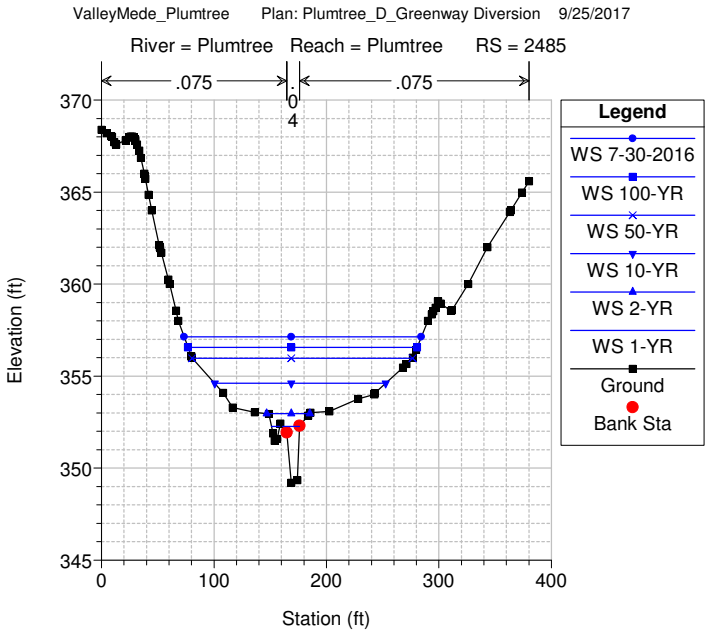

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

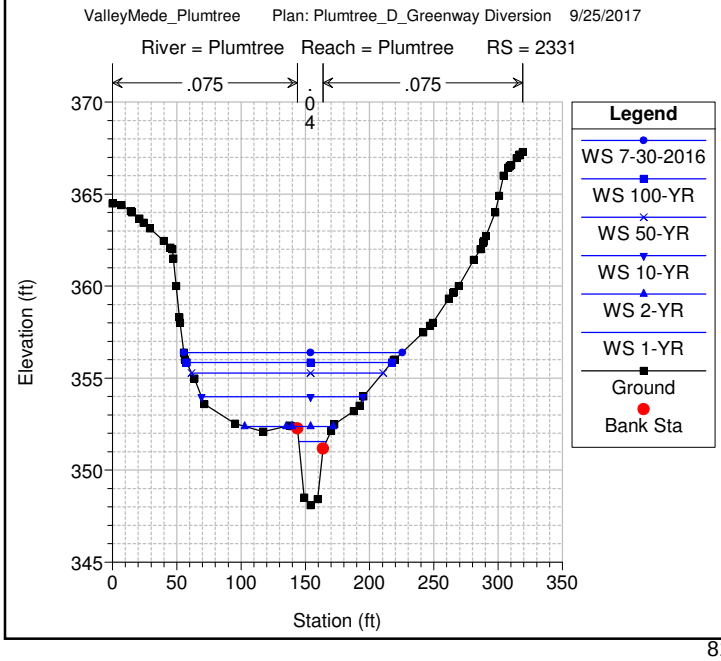

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

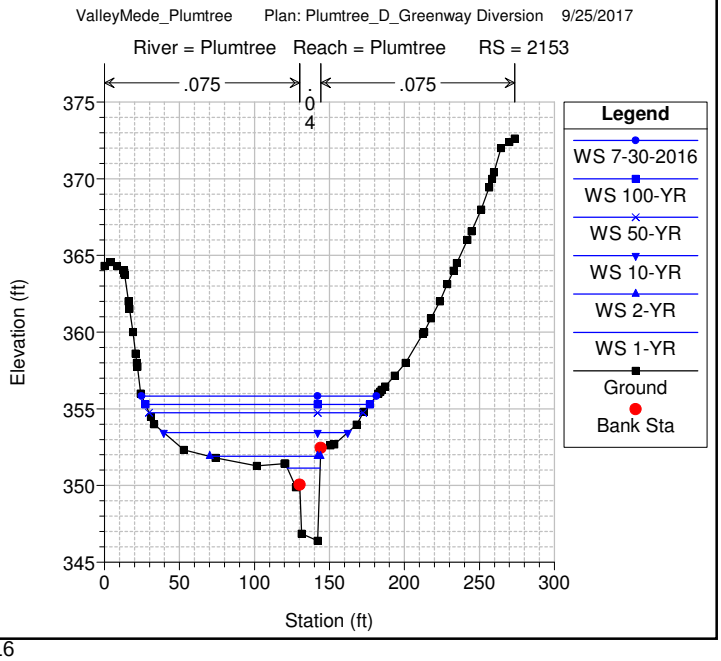

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2827
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

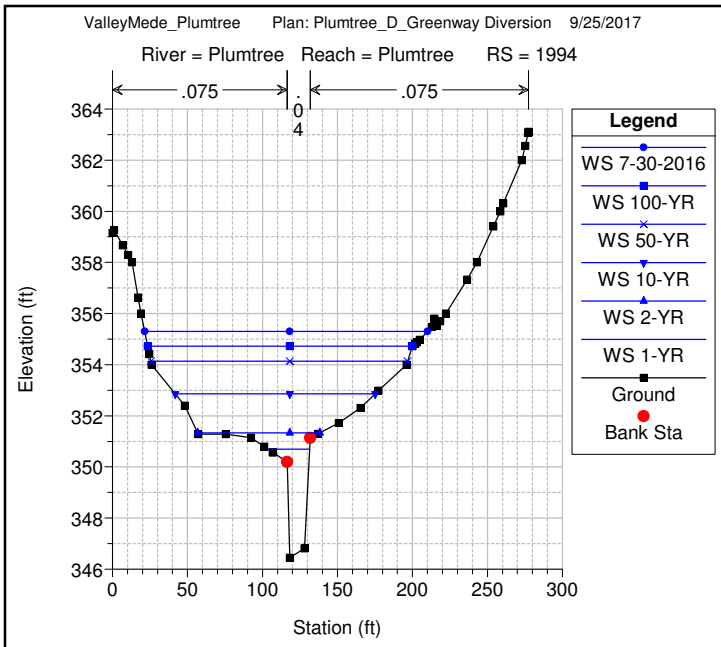

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2759
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

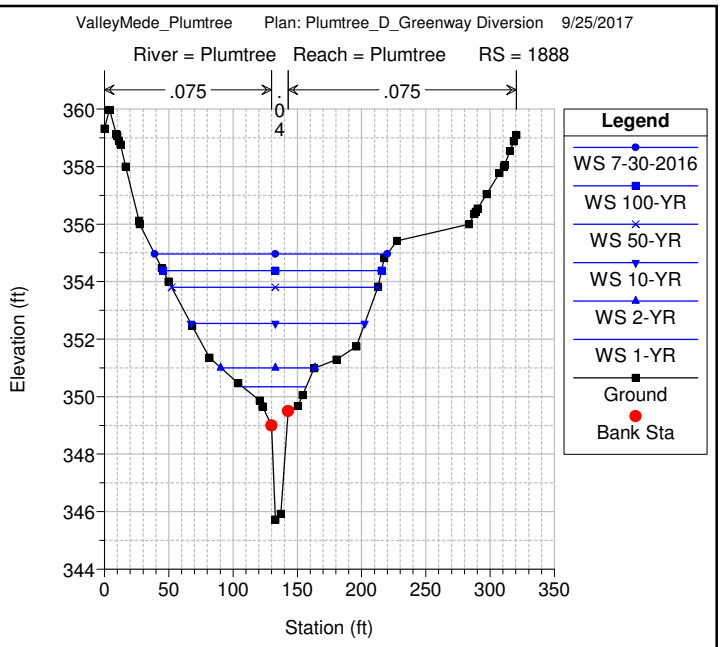

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2589
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

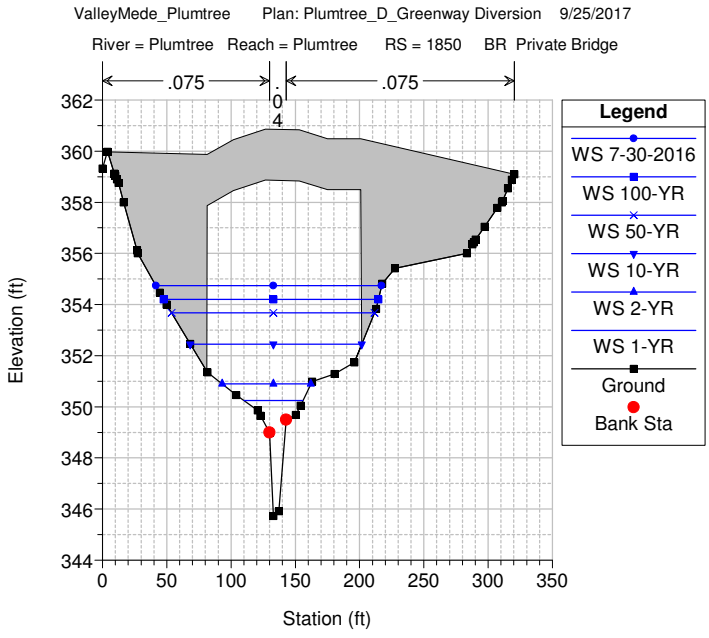

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2485
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

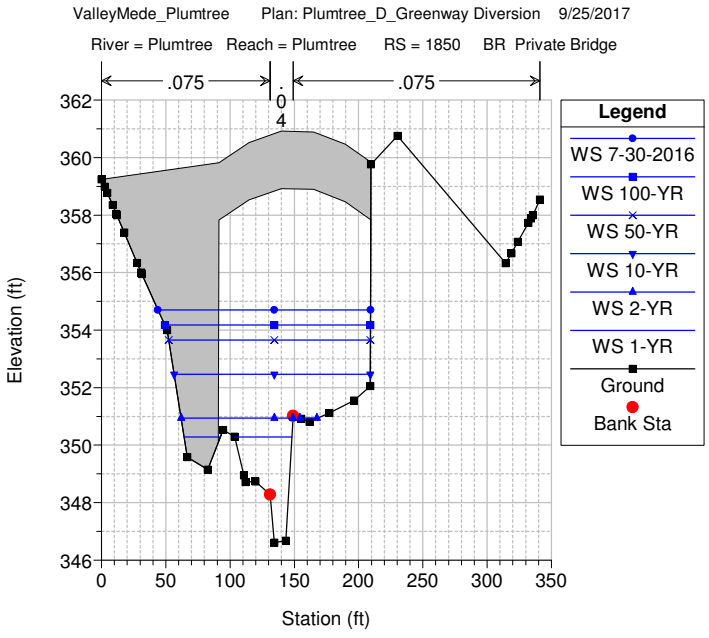

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2331
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

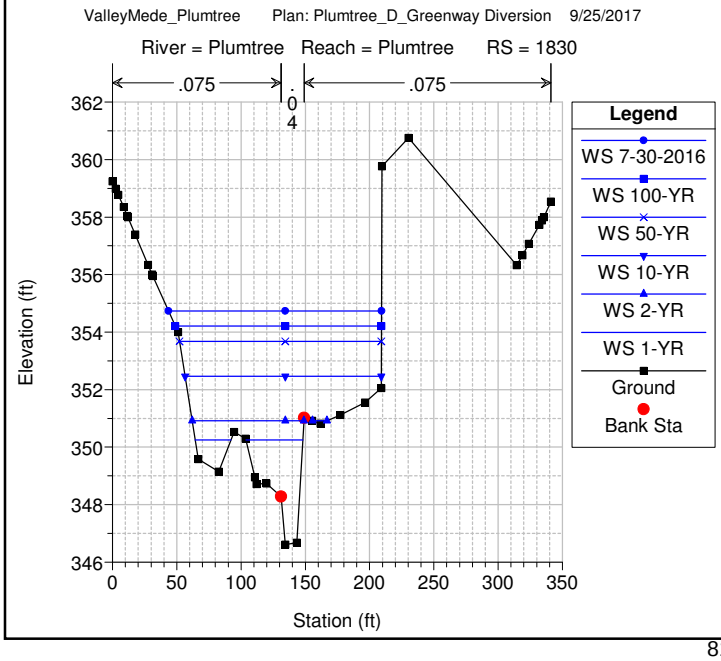

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 2153
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

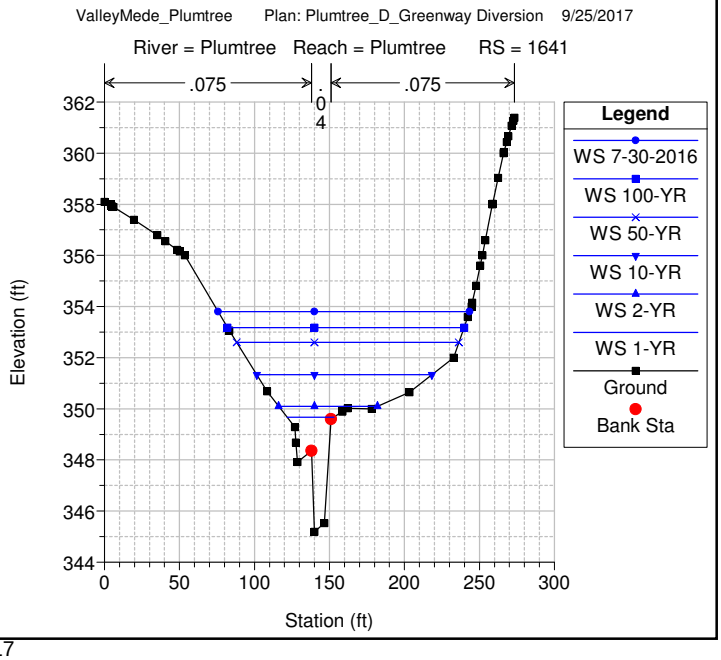

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1994
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

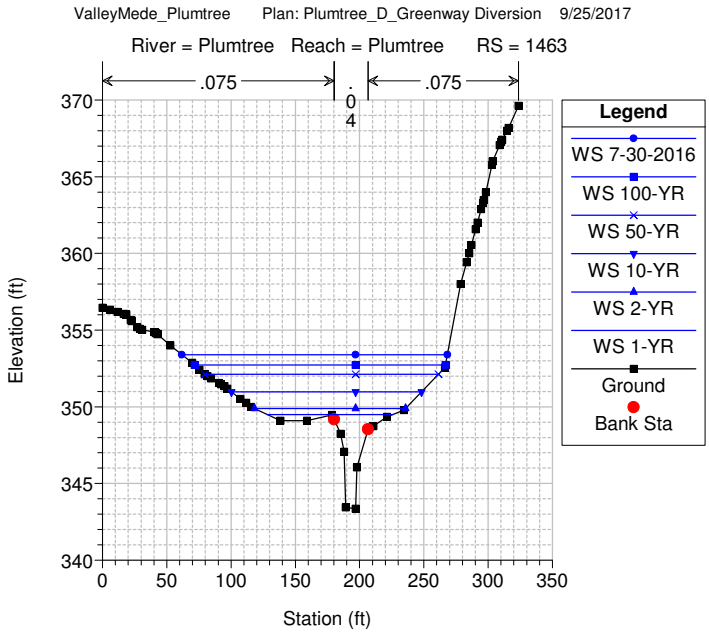

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1888
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

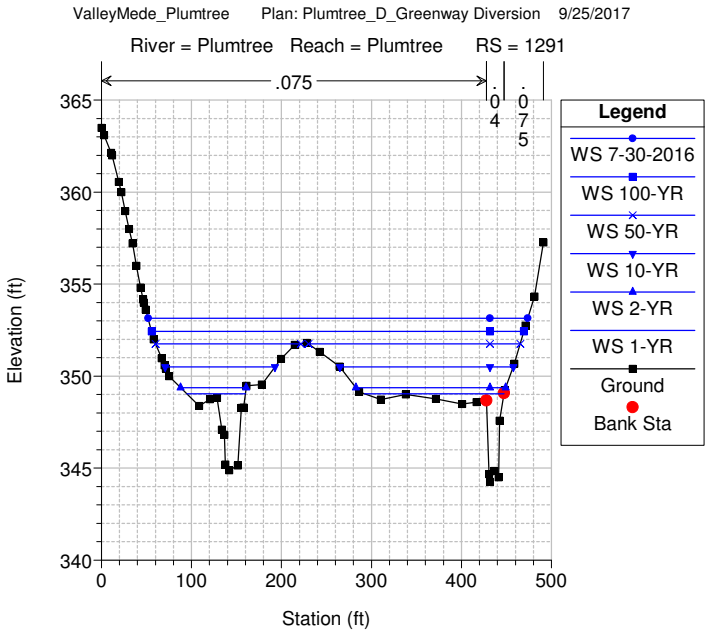

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

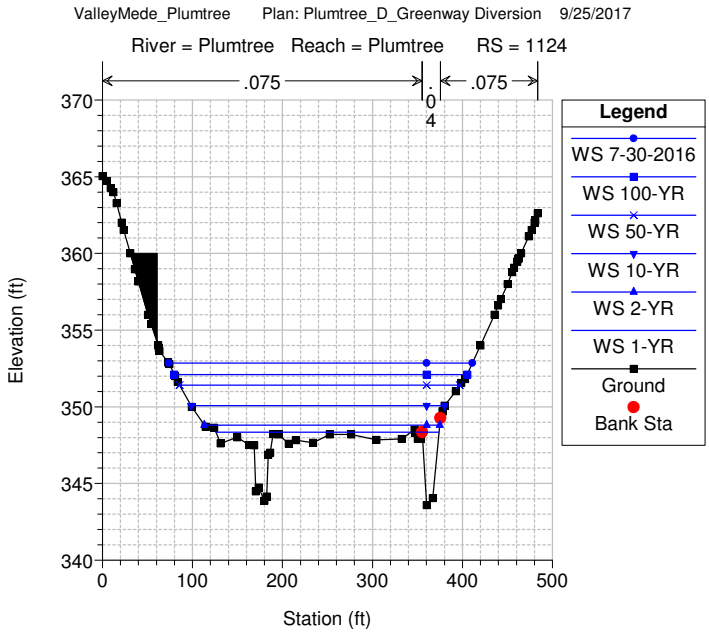

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

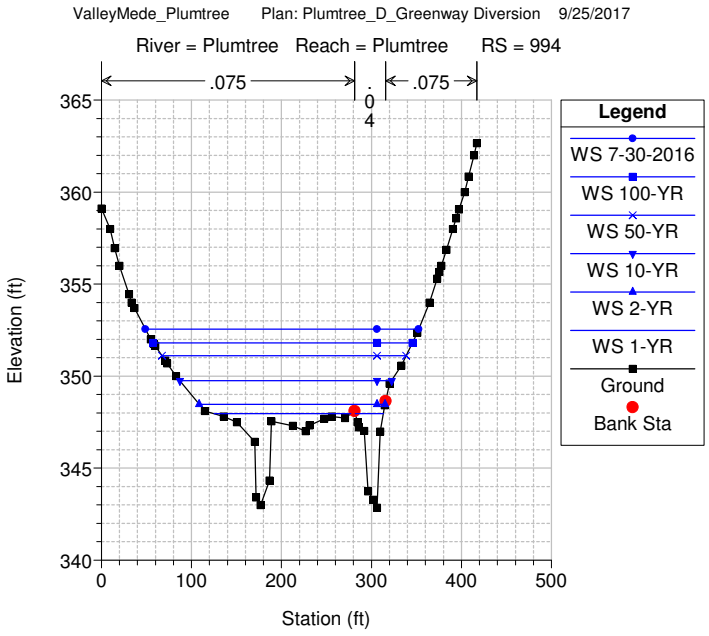

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1830
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

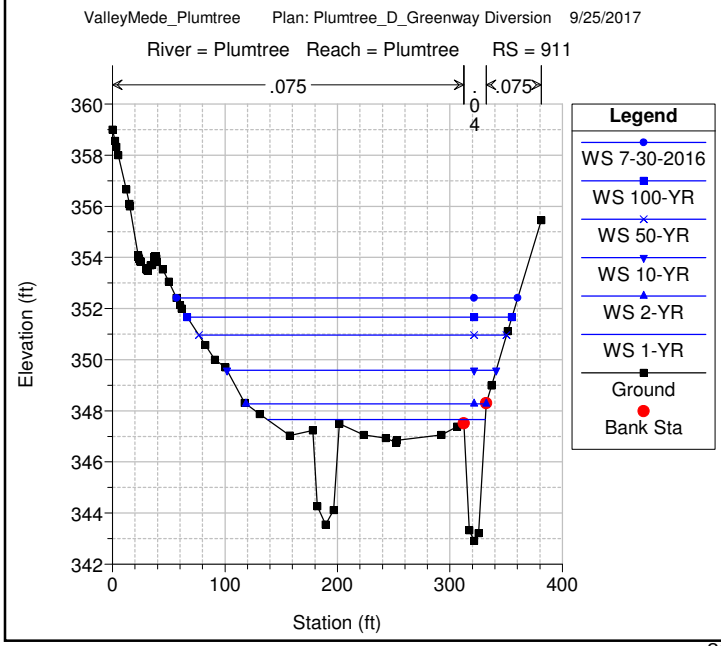

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1641
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

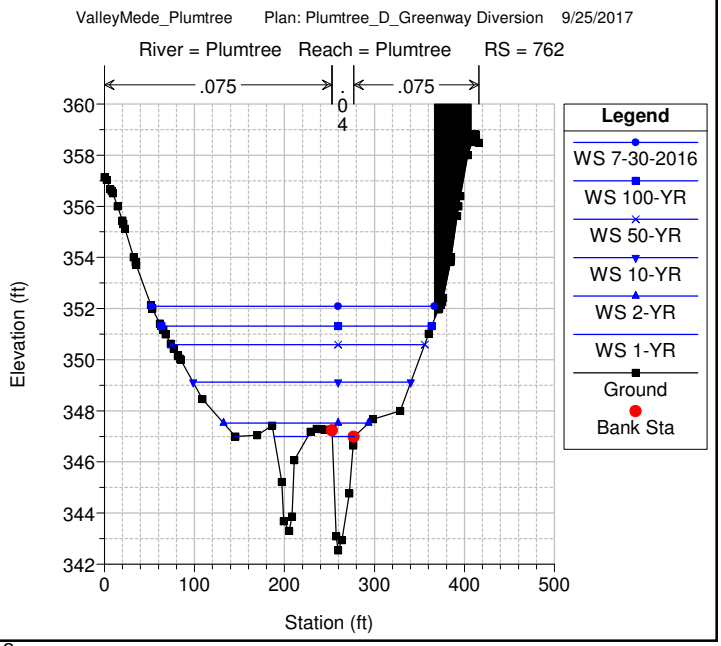

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1463
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

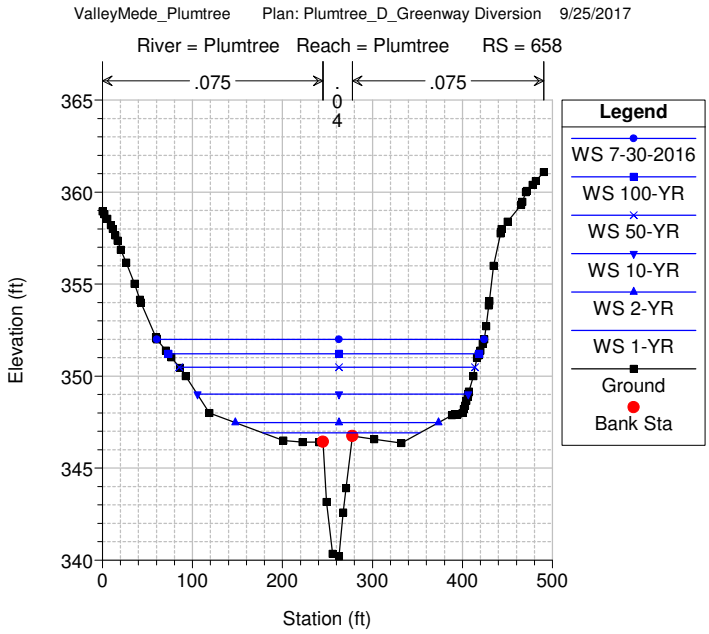

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1291
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

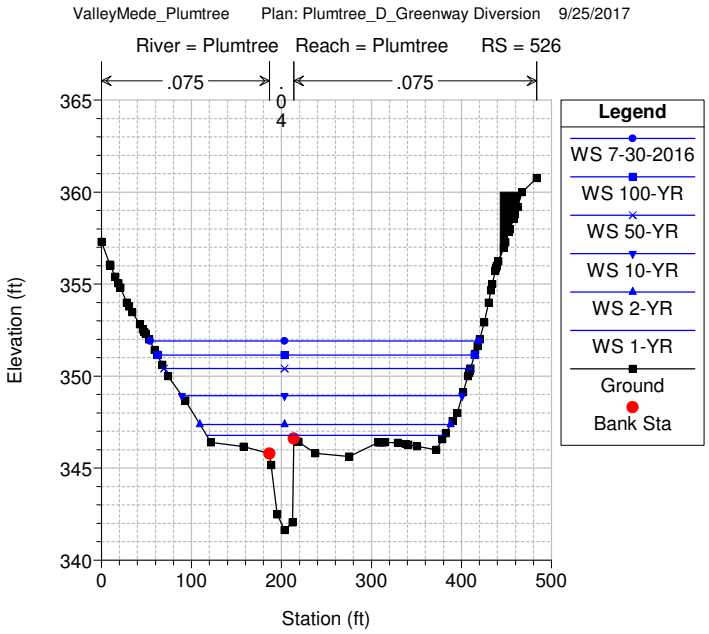

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 1124
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

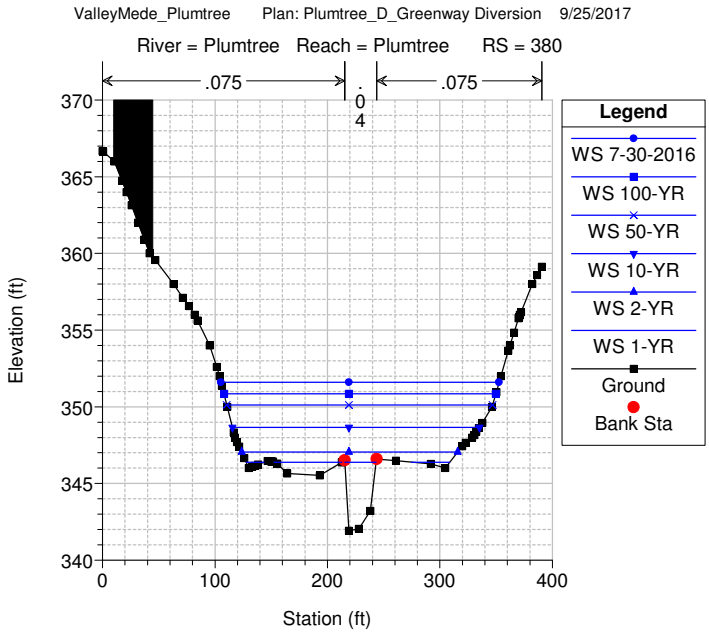

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 994
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

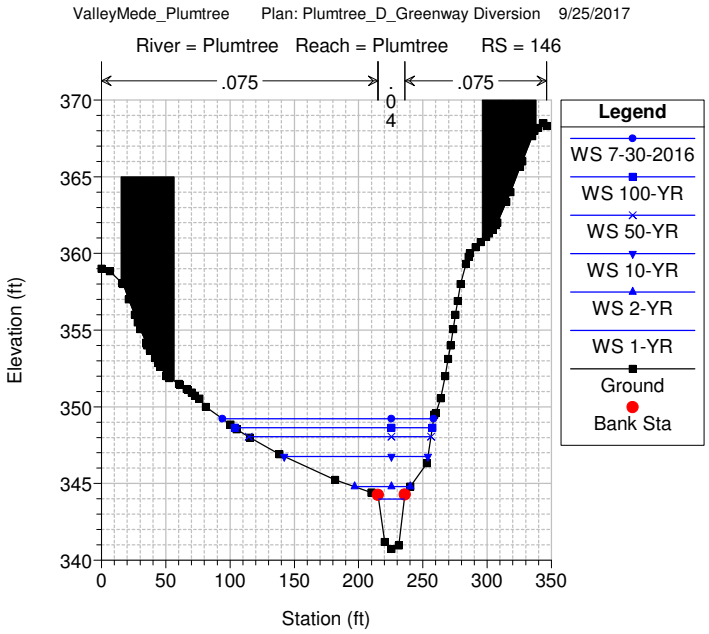

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 911
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

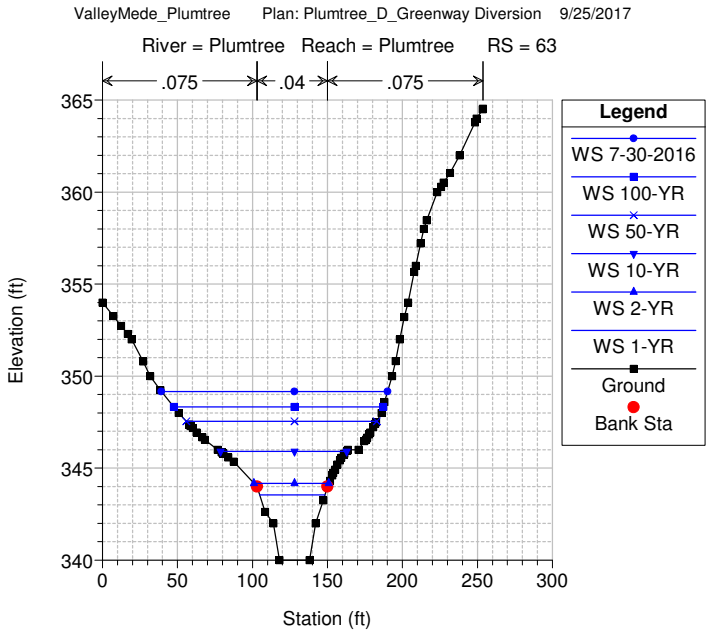

ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 762
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 658
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 526
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 380
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 146
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_D_Greenway Diversion 9/25/2017
River = Plumtree Reach = Plumtree RS = 63
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: ValleyMede_Plumtree
Project File : ValleyMede_Plumtree.prj
Run Date and Time: 9/25/2017 6:39:55 AM

Project in English units

PLAN DATA

Plan Title: Plumtree_D_Greenway Diversion
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.p05

Geometry Title: Plumtree
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g01

Flow Title : Plumtree_D_Greenway Diversion
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f13

Plan Description:
Proposed condition which includes a 5' culvert for diversion along Greenway Drive. Assumed outfall downstream of Frederick Rd, tying into existing storm drain and outfalling into channel. Modeled as a flow reduction based on an approximated maximum capacity of the proposed 5' storm drain.

Plan Summary Information:

Number of:	Cross Sections	= 85	Multiple Openings	=	0
	Culverts	= 6	Inline Structures	=	0
	Bridges	= 2	Lateral Structures	=	0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Plumtree_D_Greenway Diversion
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f13

Flow Data (cfs)

River	Reach	RS	1-YR	2-YR	10-YR	50-YR	100-YR	7-30-2016
Plumtree	Plumtree	10286	223	307	596	995	1200	1333
Plumtree	Plumtree	9499	204	321	719	1263	1578	1757
Plumtree	Plumtree	6568	164	267	626	1232	1577	1843
Plumtree	Plumtree	4185	149	228	595	1236	1606	1998
Plumtree	Plumtree	2759	194	295	741	1395	1765	2157
Plumtree	Plumtree	1291	408	581	1316	2351	2995	3782

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Plumtree	Plumtree	1-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	2-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	10-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	50-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	100-YR	Critical	Normal S = 0.0035

GEOMETRY DATA

Geometry Title: Plumtree
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g01

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10286

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	421.06	4.46	420.89	12.57	420.32	16.13	420	21.94	419.29
34.88	418	40.42	417.33	49.09	416.56	55.82	416.21	59.64	416.08
64.03	416.14	69.28	416.31	71.51	416.31	77.01	416.75	78.81	416.76
87.6	416	91.89	415.92	104.16	414	107.04	413.94	110.15	414
119.18	415.05	122.23	414.9	125.21	414.83	141.42	414.84	151.61	414.58
159.6	414.54	167.19	414.69	175.25	414.38	179.96	413.77	184.56	413.83
198.65	413.63	213.29	412.97	221.19	413.06	244.79	412.19	252.86	412
260.69	411.14	268.55	410	275.66	409.1	281.64	408	295.07	406.35
301.98	405.73	324.56	404	331.77	402.81	335.97	402	342.56	400
348.24	398	350.27	397.89	380.47	396.22	384.18	396	392.32	395.09
392.68	395.09	397.28	395.62	402.89	396.12	413.25	396.41	418.97	396.59
431.99	396.41	448.58	396.55	450.96	396.5	456.66	396	465.37	395.79
485.62	395.34	494.65	395.35	513.52	395.9	514.52	396	527.48	398
535.86	400	542.87	402	555.37	406	562.67	408	571.1	410
582.03	412	599.19	414	605.88	414.94	612.34	415.57	635.29	417.19

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	380.47	.04	413.25	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
380.47	413.25	240.46	241.25	237.2	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
418.97	635.29	396.59	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10044

INPUT
Description:

Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	412.61	5.59	412.52	12.02	412	24.56	410	43.68	408
63.32	407.31	82.83	408	95.82	408.67	112.17	408.9	135.95	408
150.67	407.02	155.38	406.93	170.58	407.72	184.39	408.12	187.95	408
198.17	406	207.41	404.64	213.72	403.97	220.01	403.47	230.16	403.33
237.26	402.98	240.08	402.75	253.05	401.3	261.48	400	269.64	398
276.05	396	280.89	394.8	280.91	394.79	283.98	394	296.18	392.49
306.31	393.62	315.4	393.68	315.41	393.68	321.2	393.72	340.79	393.4
357.04	393.75	384.23	394.62	389.34	394.61	409.5	394	417.56	393.18
419.37	393.18	428.98	394	438.91	394.31	451.85	394.26	461.9	394.35
480.45	394.77	489.6	395.18	496.68	395.1	547.82	396	555.48	396.43
564.03	396.66	570.08	396.96	600.19	397.8	605.55	398.35	610.97	398.79
622.38	399.08	632.53	400	658.42	401.23	661.34	401.26	665.82	401.48
679.52	401.73	692.52	401.54	695.05	401.76	701.43	401.68	704.45	401.5
715.06	401.24	723.65	401.19	738.24	400.62	741.08	400.41	748.78	400.57
754.02	400.82	766.27	400.65	779.16	401.67	781.77	402	794.47	404
812.23	408	815.19	408.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	280.91	.04	321.2	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
280.91	321.2	233.9	230.57	222.97	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9814

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	408.67	12.64	408	20.9	407.3	27.53	406.98	42.5	406.44
45.07	406.25	49.58	405.72	78.23	403.56	83.62	402.79	92.79	403.11
109.61	402.4	113.8	402	123.62	401.65	158.68	400.12	170.91	398.99
182.64	398	195.08	396	198.75	395.24	205.66	394	253.13	392
256.5	391.77	269.73	390.59	269.76	390.59	276.29	390	281.78	388.76
287.27	390	300	391.49	302.59	391.81	308.77	392.3	315.09	392.31
322.12	392.41	326.48	392.65	332.87	392.67	336.92	392.57	358.02	392.79
362.67	392.97	366.57	392.83	382.15	392.69	386.15	392.76	408.35	392.69
415.33	392.55	427.21	392.45	466.82	393.37	473.56	393.78	479.56	394
490.09	394.88	500.42	395.03	503.77	395.29	508.66	395.37	510.05	395.29
514.08	395.75	518.53	395.7	538.06	395.23	547.13	395.22	564.37	396
575.99	396.66	593.58	397.53	602.7	396.78	604.57	396.76	609.13	397.48
610.69	398	617.78	398.3	636.1	398.77	690.36	399.64	696.36	399.66
731.55	398.7	739.3	398.59	745.07	398.39	755.19	398.48	767.5	398.81
779.98	399.52	790.91	399.95	806.05	402	818.51	403.5	823.74	404
826.23	404.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	253.13	.04	308.77	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
253.13	308.77	52.19	51.52	50.85	.1	.3

Right Levee Station= 514.08 Elevation= 395.75

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9762

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406.21	1.37	406	14.09	404.95	24.55	404.21	38.68	402.62
47.25	402	67.31	400	71.18	399.81	79.7	399.62	84.43	399.37
117.61	398.32	130.2	398.16	134.88	398	147.37	397.38	157.13	397.03
162.41	397.34	174.01	396.74	180.45	396	203.34	393.86	225.77	392.62
235.15	392	236.85	391.76	246.11	391.05	253.44	390.35	253.48	390.34
256.39	390	260.62	388.92	263.74	388	265.59	389.21	267.49	388
276.02	390	282.13	392	284.2	392.49	284.22	392.49	290.57	394
292.66	393.58	294.75	394	307.3	392.92	329.54	391.59	336.98	391.01

```
  346.17  391.13  351.58  391.28  355.99  391.22  362.72  391.29  365.01  391.44
  375.54  391.54  383.33  391.42  390.57  391.67  406.22     392  413.09  392.62
  427.35  393.41  431.42   393.8  432.21     394  447.82  395.11  449.31  395.15
  470.35  394.72   473.7  395.12  482.31  395.53  496.51  395.21  507.72  395.47
  543.73  396.64  554.26  396.66  559.24  396.89  562.97  396.96  568.76  397.23
  584.75  397.94  589.53  398.31  594.28     398  601.77  397.68  611.77     398
   662.6   399.2  729.79  397.67  753.67  397.86  761.91     398   785.2  399.61
  794.52  400.41  805.84  402.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  235.15     .04  284.22    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.15  284.22            32.64   30.09   27.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9732

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  121.15           145.71  143.47  141.55             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 9650

INPUT
Description: Michaels Way
Distance from Upstream XS =      51
Deck/Roadway Width        =      50
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  396.38            26.1 395.934            49.6 395.582
    91.4 394.914           117.4 394.746           144.9 394.497
   186.3 394.402          211.94 394.376          238.63 394.594
  353.45     396

Upstream Bridge Cross Section Data
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
```

```
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
          82.5  121.15            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  397.96             8.6   397.3            45.6 396.969
    68.8 396.671            92.4  396.38           123.2 395.934
   146.8 395.582           191.3 394.914           209.6 394.746
   232.9 394.497           262.2 394.402           288.2 394.376
  314.98 394.594          417.56     396

Downstream Bridge Cross Section Data
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.96   15.99  396.01   17.57     396   20.76  395.29   25.99  395.01
   29.32  394.71   29.33  394.38   39.55  392.85   60.92  392.22   95.59   390.4
  100.13  389.82  106.73  388.97  116.38  387.66  117.95  386.81  124.68  386.27
  130.57  386.46  134.27   387.9   134.7     388  137.88  388.68  144.79  390.87
  157.88  392.09  174.45  391.81  191.33  392.09  218.95   392.7   229.4  392.07
  229.72  392.09  239.13  392.16  239.87  392.21  251.99  392.37  252.81  392.33
  253.84  392.05  264.78  392.06  265.66  392.35  265.82  392.37  274.13  392.48
  275.38  392.39   275.8  392.37  280.37  392.38  285.74  392.34  288.04  392.35
  289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
  294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
  302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
  336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
  353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
  363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        106.73  137.88            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8   391.2       F
   140.7  417.56   391.2       F

Upstream Embankment side slope             =       3 horiz. to 1.0 vertical
Downstream Embankment side slope           =       3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 13   114.5     .024     .016        0                  .5               1
Upstream   Elevation =  387.74
```

```
          Centerline Station =  102
Downstream Elevation =  386.61
          Centerline Station =  120

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               13   114.6     .024     .016        0                  .5                1
Upstream   Elevation =  387.77
          Centerline Station =  112
Downstream Elevation =  386.6
          Centerline Station =  130
```

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	112.20	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.43
Q Barrel (cfs)	112.20	Culv Vel DS (ft/s)	5.35
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.20
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.24
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.64	Weir Sta Lft (ft)	
E.G. OC (ft)	391.04	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.01	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	146.33	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.10
Q Barrel (cfs)	146.33	Culv Vel DS (ft/s)	5.56
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	390.20	Culv Frctn Ls (ft)	0.44
W.S. DS (ft)	389.99	Culv Exit Loss (ft)	0.27
Delta EG (ft)	1.35	Culv Entr Loss (ft)	0.51
Delta WS (ft)	1.37	Q Weir (cfs)	
E.G. IC (ft)	391.22	Weir Sta Lft (ft)	
E.G. OC (ft)	391.64	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.11	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.99	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.37	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.37	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	298.28	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	298.28	Culv Vel DS (ft/s)	8.93
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	391.43	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	391.04	Culv Exit Loss (ft)	0.85
Delta EG (ft)	2.53	Culv Entr Loss (ft)	0.70
Delta WS (ft)	2.76	Q Weir (cfs)	
E.G. IC (ft)	393.54	Weir Sta Lft (ft)	
E.G. OC (ft)	393.96	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.87	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.98	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	365.61	Culv Full Len (ft)	

# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	365.61	Culv Vel DS (ft/s)	9.43
E.G. US. (ft)	395.25	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.11	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.59	Culv Frctn Ls (ft)	0.24
W.S. DS (ft)	392.07	Culv Exit Loss (ft)	0.86
Delta EG (ft)	2.66	Culv Entr Loss (ft)	0.69
Delta WS (ft)	3.04	Q Weir (cfs)	263.03
E.G. IC (ft)	394.79	Weir Sta Lft (ft)	70.13
E.G. OC (ft)	395.24	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.16	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	392.07	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)	5.05	Weir Flow Area (sq ft)	123.26
Culv Crt Depth (ft)	3.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	352.60	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.81
Q Barrel (cfs)	352.60	Culv Vel DS (ft/s)	8.81
E.G. US. (ft)	395.57	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.40	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	1.15
W.S. DS (ft)	392.60	Culv Exit Loss (ft)	0.69
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.60
Delta WS (ft)	2.80	Q Weir (cfs)	493.18
E.G. IC (ft)	394.49	Weir Sta Lft (ft)	49.49
E.G. OC (ft)	395.55	Weir Sta Rgt (ft)	286.44
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.21
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.83
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	196.32
Culv Crt Depth (ft)	3.86	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	347.45	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.68
Q Barrel (cfs)	347.45	Culv Vel DS (ft/s)	8.68
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.59	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.38	Culv Frctn Ls (ft)	1.11
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.38	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.70	Q Weir (cfs)	637.61
E.G. IC (ft)	394.37	Weir Sta Lft (ft)	43.81
E.G. OC (ft)	395.76	Weir Sta Rgt (ft)	291.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.37
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	237.06
Culv Crt Depth (ft)	3.81	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.80	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.48
Q Barrel (cfs)	110.80	Culv Vel DS (ft/s)	5.26
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.22
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.65	Weir Sta Lft (ft)	
E.G. OC (ft)	391.05	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.74	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.97	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.94	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	160.67	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.38
Q Barrel (cfs)	160.67	Culv Vel DS (ft/s)	6.08
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	390.20	Culv Frctn Ls (ft)	0.55
W.S. DS (ft)	389.99	Culv Exit Loss (ft)	0.36
Delta EG (ft)	1.35	Culv Entr Loss (ft)	0.10
Delta WS (ft)	1.37	Q Weir (cfs)	
E.G. IC (ft)	391.46	Weir Sta Lft (ft)	
E.G. OC (ft)	391.91	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	390.27	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.99	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.49	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.50	Min El Weir Flow (ft)	394.39

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	297.72	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.57
Q Barrel (cfs)	297.72	Culv Vel DS (ft/s)	8.90
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	391.43	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	391.04	Culv Exit Loss (ft)	0.84
Delta EG (ft)	2.53	Culv Entr Loss (ft)	0.71
Delta WS (ft)	2.76	Q Weir (cfs)	
E.G. IC (ft)	393.56	Weir Sta Lft (ft)	
E.G. OC (ft)	393.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.84	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.04	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	366.36	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.50
Q Barrel (cfs)	366.36	Culv Vel DS (ft/s)	9.44
E.G. US. (ft)	395.25	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.11	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.59	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	392.07	Culv Exit Loss (ft)	0.87
Delta EG (ft)	2.66	Culv Entr Loss (ft)	0.70
Delta WS (ft)	3.04	Q Weir (cfs)	263.03
E.G. IC (ft)	394.84	Weir Sta Lft (ft)	70.13
E.G. OC (ft)	395.26	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.15	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	392.07	Weir Avg Depth (ft)	0.60
Culv Nml Depth (ft)	4.90	Weir Flow Area (sq ft)	123.26
Culv Crt Depth (ft)	3.97	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	354.22	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.85
Q Barrel (cfs)	354.22	Culv Vel DS (ft/s)	8.85
E.G. US. (ft)	395.57	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.40	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	1.16
W.S. DS (ft)	392.60	Culv Exit Loss (ft)	0.70
Delta EG (ft)	2.45	Culv Entr Loss (ft)	0.61
Delta WS (ft)	2.80	Q Weir (cfs)	493.18
E.G. IC (ft)	394.55	Weir Sta Lft (ft)	49.49
E.G. OC (ft)	395.58	Weir Sta Rgt (ft)	286.44
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.21
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.83

Culv Nml Depth (ft)		Weir Flow Area (sq ft)	196.32
Culv Crt Depth (ft)	3.87	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	347.95	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.70
Q Barrel (cfs)	347.95	Culv Vel DS (ft/s)	8.70
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.59	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.38	Culv Frctn Ls (ft)	1.12
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.38	Culv Entr Loss (ft)	0.59
Delta WS (ft)	2.70	Q Weir (cfs)	637.61
E.G. IC (ft)	394.41	Weir Sta Lft (ft)	43.81
E.G. OC (ft)	395.77	Weir Sta Rgt (ft)	291.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.37
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	237.06
Culv Crt Depth (ft)	3.82	Min El Weir Flow (ft)	394.39

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01
29.32	394.71	29.33	394.38	39.55	392.85	60.92	392.22	95.59	390.4
100.13	389.82	106.73	388.97	116.38	387.66	117.95	386.81	124.68	386.27
130.57	386.46	134.27	387.9	134.7	388	137.88	388.68	144.79	390.87
157.88	392.09	174.45	391.81	191.33	392.09	218.95	392.7	229.4	392.07
229.72	392.09	239.13	392.16	239.87	392.21	251.99	392.37	252.81	392.33
253.84	392.05	264.78	392.06	265.66	392.35	265.82	392.37	274.13	392.48
275.38	392.39	275.8	392.37	280.37	392.38	285.74	392.34	288.04	392.35
289.04	392.37	289.76	392.35	291.67	392.43	292.2	392.41	293.73	392.52
294.34	392.49	295.48	392.61	297.43	392.5	299.89	392.58	301.52	392.7
302.57	392.72	317.67	393.33	321.58	393.35	323.43	393.4	328.45	393.52
336.04	393.41	337.54	393.43	342.18	393.53	347.45	393.83	351.46	393.93
353.19	394	353.68	394.06	355.32	394.12	356.64	394.21	359.84	394.23
363.57	394.38	408.86	396	412.96	396.28	417.56	396.44		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.73	.04	137.88	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
106.73	137.88	74.95	89.37	103.36	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	104.8	391.2	F
140.7	417.56	391.2	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9499

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.42	1.16	397.39	10.04	396	12.41	395.1	15.2	394
19.89	392.3	20.69	392	30.94	390.03	58.35	389.54	78.64	389.7
91.71	389.72	91.72	389.72	95.66	389.73	106.35	385.4	108.48	385.35
121.85	388.31	126.28	389.29	134.6	389.39	148.99	387.24	154.41	388.47
172.52	389.82	180.01	390	192.12	392	192.21	392.01	204.6	394
211.88	395.17	217.46	396	219.87	396.49	223.11	397.11	227.54	398
230.91	398.56	233.71	399	240.41	400	246.88	400.81		

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   95.66     .04  126.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         95.66  126.28            98.65   101.8  104.92             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9398

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   398.2    5.52  398.06    6.45     398   10.27  396.93   13.95     396
   17.15   395.1   21.18     394   22.21  393.72   23.21  393.45   25.97  392.71
   28.56     392   35.43  391.01   38.29   390.6   43.03     390   43.15  389.99
   46.04  389.74   46.81   389.7   47.09  389.68   47.37  389.65   55.11   389.4
   55.76  389.36   56.28  389.32   56.92  389.26   63.39  388.58   69.33  388.73
    71.4  388.44   71.45  389.03   80.15  389.63   92.99  388.55  114.44  388.98
  120.46  388.94  120.47  388.94  128.65  388.89  134.08  384.53  135.79  384.42
  141.88  384.75  145.59  388.85  150.79  388.83  167.65  388.75  186.81  388.92
  200.79  389.39   202.6     390  212.88  391.15  214.18     392  222.75   392.3
  224.12  392.62  227.87  392.98  232.15  393.19  232.46  393.21  235.68  393.41
  238.89  393.56  241.36  393.69  244.69  393.87  245.13  393.89  247.11     394
   255.3  394.93  262.09  395.66  265.18     396  268.55  396.34  272.92  396.76
  279.66  397.44  280.66  397.53  281.55  397.61  285.79     398   291.8  399.12
  296.37     400   301.1  400.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  128.65     .04  145.59    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        128.65  145.59            97.24   96.47   94.54             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9301

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.19    3.07     400    4.08  399.94     4.2  399.94   13.57  399.39
    15.2  399.29   20.44  399.07   21.01  399.05   21.75  399.02   22.33     399
   33.53  398.93   34.16  398.91   34.62  398.89   50.07  398.18   51.97  398.04
   52.52     398   56.81  396.58   58.64     396   59.61  395.91   64.07  395.25
   72.56     394   73.12  393.94    74.3  393.83    84.4  392.97   90.89  392.65
   97.02  392.35  101.28  392.17  101.59  392.16  101.86  392.14  101.98  392.14
  104.04     392   106.2  392.22  109.76  392.28  110.09  392.26   110.2  392.25
  111.04  392.21   113.1  392.09  140.12  387.83   145.5  387.55  154.95  387.07
  157.77  384.36  160.52  383.31  166.94  384.65  171.14  388.29  175.86  388.27
  175.87  388.27  183.69  388.23  215.21  388.62  222.39   389.2  234.24  392.69
  252.67  392.11  269.21  391.61  287.95  393.96  291.68     394  304.65  395.18
  314.29  395.71  317.24  395.93  317.28  395.93  318.14     396  320.84  396.21
   321.8   396.3  324.25  396.51  326.08  396.68  329.75  397.01  336.95   397.7
  338.16  397.81  340.03     398  341.44  398.43   347.8     400  351.27  400.78
  352.31  401.05

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  154.95     .04  171.14    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        154.95  171.14           109.84     105  100.42             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    42.5    98.1     405

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9196
```

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.06	3.11	399.1	7.66	399.14	8.21	399.14	11.14	399.2
14.16	399.24	15.16	399.23	16.06	399.21	16.45	399.2	16.79	399.18
17.07	399.17	44.77	399	46.3	398.96	57.79	398.17	58.05	398.12
58.52	398.07	59.24	398.01	59.47	398	59.81	397.95	60.63	397.83
60.69	397.82	61.36	397.83	62.34	397.8	62.8	397.77	63.34	397.77
63.74	397.73	73.15	396.86	74.17	396.76	74.98	396.67	80.24	396
91.29	394.71	96.77	394	103.28	393.2	108.02	392.64	109.29	392.48
110.44	392.34	113.4	392	129.6	390	133.01	389.51	134.1	389.41
135.16	389.31	138.39	388.96	141.78	388.59	143.61	388.38	145.61	388.15
146.23	388.08	146.93	388.04	146.98	388	156.92	387	192.18	386.94
214.32	387.26	224.37	387.23	224.38	387.23	230.17	387.21	234.05	385.77
239.97	384.81	241.03	384.18	243	383.81	247.36	387.68	256.1	387.12
258.34	386.98	282.41	388.4	293.08	392.68	309.62	391.47	323.53	392.22
323.58	392.18	354.2	394	361.45	395.27	365.79	396	370.25	397.12
373.9	398	375.39	398.33	383.13	400	386.3	400.73	391.87	402
395.39	402.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	230.17	.04	247.36	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
230.17	247.36	197.07	208.89	195.59	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
11	50.8	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8987

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.15	2.15	402.17	3.39	402.13	6.04	402.17	12.51	402.07
13.01	402.08	14.07	402.07	15.03	402.07	16.62	402.1	16.88	402.09
17.7	402.05	18.67	402	24.82	401.62	50.49	400	71.91	398.02
72.1	398	72.14	397.99	82.9	396	83.83	395.8	92.09	394
100.48	392.04	100.64	392	100.82	391.96	101.02	391.92	110.17	390
121.03	388.29	142.19	386.02	152.75	385.4	161.75	385.92	161.76	385.92
161.94	385.93	170.22	385.8	172.51	383.34	178.25	382.77	183.07	383.36
185.81	386.43	193.25	386.15	202.96	385.78	222.78	385.7	249.39	385.47
263.78	390.18	301.3	390	301.69	390.04	302.4	390.1	313.7	391.1
324.37	392	326.83	392.6	329.22	393.19	332.48	394	335.16	394.95
338.19	396	340.18	396.58	342.55	397.27	344.45	397.82	345.03	398
346.35	398.38	351.77	400	352.66	400.28	356.31	401.47	357.07	401.72
357.94	402	358.9	402.3	364.45	404	365.62	404.4	369.07	405.49

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	170.22	.04	185.81	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
170.22	185.81	233.38	233.77	226.61	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8753

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.84	3.57	392.36	4.48	392.24	6.24	392	14.25	391.04
22.57	390	39.19	388.36	42.66	388	43.14	387.95	44.71	387.76
45.13	387.7	53.93	387	55.07	386.91	55.91	386.89	59.98	386.86
67.22	387.07	71.26	386.74	71.58	386.73	74.94	386.49	75.24	386.48
79.99	386.13	80.09	386.12	81.64	386	140.52	386.79	179.2	384.55
199.15	384.94	212.08	384.65	214.59	384.6	226.78	384.34	229.61	382.96

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  231.97  382.55  232.78  382.41  236.12  381.99  237.03  382.27  237.82  384.79
  243.64  385.02  243.65  385.02   246.4  385.13   254.4  387.48   262.5  388.23
  269.36  387.48  284.51  387.86  284.57  388.25   284.6  388.25  284.74  388.27
  302.51     390  304.49  390.31  314.62     392  318.02  392.86  322.27     394
  323.63  394.41  327.41  395.54  328.32  395.82   328.9     396  329.96  396.36
  334.49     398  337.27  399.01  339.54     400  340.77  400.45  344.57     402
  346.47   402.7     350     404   351.3  404.47  352.94  405.01  353.27  405.12

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  226.78     .04  237.82    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        226.78  237.82           178.41  174.76  168.62             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8579

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.17    3.31     400   17.74  399.07   34.62     398   35.22  397.93
   46.41  397.26   51.75  396.96   59.26   396.5   60.57  396.41   63.23  396.27
   68.83     396   75.46  394.89   76.44  394.72   79.84  394.17   80.17  394.11
   80.95     394   93.93  392.04   94.14     392   94.63  391.88   95.67  391.71
   95.96  391.67   96.13  391.66   102.2  391.37   103.3  391.28  107.14  391.06
  111.25  390.74   112.8  390.64   116.2  390.33  116.74  390.29  119.66     390
  124.86  389.68  126.23  389.59  129.14  389.43  130.57  389.33  132.66  389.17
   135.1  389.03     138  388.83  141.06  388.61  147.32  388.13  148.92     388
  153.19  387.46  172.43  385.68  186.19  383.82  200.87  383.46  218.33  383.53
  227.14  382.25  231.16  382.93  233.37  383.31  235.71  383.61  242.87  381.38
  248.28  381.13  250.03  381.37  251.19  383.67  263.28  383.69  264.68   383.7
  279.14   384.5  298.66  387.04   300.8     387  315.88     390  320.59  391.65
   321.5     392  322.64  392.54  325.53     394   328.7  395.54  329.55     396
  332.04  397.23  333.33     398  334.37  398.44  338.88     400  339.68  400.16
  340.45  400.35  347.58     402  352.32   402.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  235.71     .04  251.19    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.71  251.19           198.29  204.23  206.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8374

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  401.05     .39  401.02   14.71     400   17.51  399.78   17.87  399.76
   18.37  399.72   19.63  399.64   20.25   399.6      22  399.47   31.49  398.77
   42.12     398   43.17  397.92   43.74  397.88   48.54  397.52   49.54  397.46
   51.19  397.35   54.98  397.06   67.52   396.4   67.98  396.37    72.6  396.03
      73     396   77.65  395.72   79.49   395.6   80.67  395.52   82.29  395.41
   83.66  395.31   85.08   395.2  104.07     394  108.69  393.72  110.21  393.61
  111.59  393.51  116.39  393.15  122.53  392.72  129.15  392.19  131.43     392
  140.54  390.76  146.03     390  147.63  389.84  149.67  389.65   158.7  388.75
  166.96     388  174.92  387.31  176.26  387.21  182.29     386  189.22  384.97
  217.89   382.7  254.28  382.69  262.97  382.52  262.98  382.52   272.5  382.34
  274.84   380.5  276.51  380.31  286.75  380.32  292.45  384.62  293.85  384.83
  305.64   386.6  321.38     388  325.59  388.89  331.68     390  334.17  390.71
  336.02   391.3   338.3     392  343.97  393.91  344.22     394  345.13  394.36
  349.46     396  350.95   396.6  354.45     398  356.99  399.37  358.18     400
  359.59  400.71  360.34  401.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   272.5     .04  292.45    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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272.5	292.45		144.9	145.45	146.03	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8229

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.36	5.81	394.06	6.29	394	7.37	393.95	45.41	392
69.28	390.22	72.15	390	72.18	390	72.26	389.98	72.54	389.95
73	389.89	74.69	389.72	75.45	389.65	75.92	389.61	75.99	389.6
79.77	389.37	82.3	389.25	100.97	388.39	107.53	388	110.36	387.9
110.76	387.9	112.75	387.84	132.43	386	139.68	385.1	170.44	382.68
187.75	382.12	197.62	382.13	197.63	382.13	207.39	382.14	209.28	380.1
212.63	379.79	215.85	380.15	217.64	381.75	227.71	382.65	227.84	382.66
243.37	383.19	265.96	384.67	268	384.46	288.88	388	293.09	388.12
308.33	389.98	308.55	389.98	309.46	389.99	310.08	390	315.47	391.1
319.76	391.98	319.9	392	320.02	392.04	321.07	392.37	326	393.9
326.33	394	328.6	394.86						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	207.39	.04	217.64	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
207.39	217.64	135.27	135.16	134.66	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8094

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.62	2.48	394.2	3.72	394	3.8	393.98	4.1	393.92
4.62	393.84	5.04	393.78	5.44	393.73	5.7	393.7	24.53	392.35
27.13	392.1	27.41	392.08	28.22	392	37.38	391.13	48.65	390
55.52	389.55	79.43	388.11	79.45	388.11	79.5	388.1	79.73	388.02
79.79	388	96.53	386.44	99.06	386.2	101.25	386	106.88	385.44
109.08	385.26	113.06	384.89	116.1	384.62	119.34	384.4	120.88	384.28
121.97	384.22	122.35	384.19	122.91	384.14	134.05	383.5	144.72	382.7
163.81	381.63	182.02	380.88	183.82	381.01	183.84	381.01	194.28	381.76
195.27	379.09	198.85	378.24	204.43	378.53	207.68	381.82	215.37	381.59
219.87	381.46	228.39	381.39	231.06	382.03	246.18	381.9	274.41	383.36
311.66	389.55	311.72	389.81	311.73	389.81	329.62	392	337.85	393.59
339.81	394	342.65	394.79	346.84	396	349.21	396.76	352.92	398
358.41	399.96	358.53	400	358.64	400.03	368.44	402	368.97	402.04
369.04	402.04	369.13	402.05	375.87	402.56	376.87	402.63	378.22	402.73
382.48	403.06	386.91	403.38	388.95	403.53	390.87	403.66		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	194.28	.04	207.68	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
194.28	207.68	138.21	139.81	140.01	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7954

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	390.87	1.06	390.76	5.56	390.36	8.09	390.17	9.7	390.06
12.95	389.88	15.86	389.75	20.41	389.55	21.37	389.49	22.17	389.45
26.06	389.27	27.8	389.18	29.65	389.1	31.21	389.02	32.58	388.93
33.19	388.89	40.18	388.65	41.65	388.54	44.29	388.45	47.14	388.32
47.67	388.28	49.22	388.2	50.93	388.11	52.62	388	54.06	387.89

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   58.14  387.52   60.02  387.34   70.48  386.32   73.92     386   75.83  385.87
   81.99  385.49   86.05  385.25   88.16  385.06   94.21  384.69   95.33  384.57
   98.59  384.23   99.42  384.17  100.92     384  114.44  382.88  125.39     382
  130.61  381.95  156.45  380.05  188.73  379.73  199.32  380.23  210.56  380.77
     212   378.9  214.38  377.79  218.13  379.54  221.11  380.65  229.58  380.68
  231.23  380.69  249.42  380.31   281.8  380.49   295.4     380  299.39  381.16
  302.17     382  305.31  382.93  310.71  384.55  316.22     386  323.56  387.01
  330.85     388  342.34   389.5  345.84     390  347.98   390.9  350.48     392
  352.14  392.75  355.01     394  357.39  394.99  359.91     396  362.57  396.94
  365.15  397.64  366.49     398  375.99  398.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  210.56     .04  221.11    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        210.56  221.11           155.28  153.64  152.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7800

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  389.23     6.4  388.77   18.95     388   32.05  387.12   34.38  386.96
   40.95  386.52   41.74  386.47   42.88  386.38   48.62     386   49.93  385.92
   50.74  385.86   62.21   385.1   65.97  384.84    73.9  384.32   75.81   384.2
   77.92  384.08   78.06  384.07   79.37     384   79.61  383.95   79.79  383.92
    79.9  383.91    81.2  383.76   81.59  383.72   81.85  383.71   82.72  383.74
   88.11  383.68   89.08  383.64   89.68  383.58   90.64  383.53   91.54  383.48
   92.48  383.38   93.55  383.29   96.76     383   98.06  382.88   99.04  382.78
  102.88  382.37  106.07     382  129.44  380.05  152.75  378.79  172.94  379.22
  186.27  379.75  187.83  378.84  191.51  378.79  198.74  378.73     200  379.32
  200.83   379.7  211.69     379  223.63  379.27  230.99   379.1  240.48  378.88
  259.49  379.02  278.05  378.97  305.83  379.75  307.52     380  314.08   381.6
  315.71     382  316.56  382.21  318.83  382.81  323.87     384  331.19  385.58
  333.53     386   340.6  386.91  350.42     388  352.19  388.23  353.07  388.36
  356.29  388.87  360.39  389.49  361.84  389.72  363.36     390  364.77  390.43
  366.25  390.85  370.11     392  372.25  392.58

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.27     .04  200.83    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.27  200.83           252.37  252.82  252.55             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7548

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.07     .78     384    5.11  383.66    7.63   383.5   11.97  383.17
   14.64  382.99   17.76  382.76   24.91  382.21   27.52     382   28.85  381.83
   29.51  381.79   32.65  381.46   35.07  381.21   46.63     380   59.52  379.12
   61.36     379   65.17  378.74   75.34  378.13   77.34  378.05   77.62     378
   83.55  378.07   85.43  378.08   88.35  378.07   95.64  378.09  101.54  378.13
  108.95  378.07  110.55  378.08  119.01  378.06  138.28  378.06  168.39  378.45
  198.66  378.25  217.53  377.85  219.53  377.83  219.55  377.83  230.43  377.75
  232.68  376.67  235.51  375.57  238.58  376.37  240.21  377.92  249.56   377.9
  258.68  377.89  288.89  377.64  323.87  376.92   330.2  377.07  336.47     378
  340.56  378.61  343.65  379.04  345.35  379.25  349.52  379.62  352.72  379.89
  353.04  379.92  353.25     380  353.89  380.15   356.3  380.75  360.75     382
  369.15     384  377.97  385.33  382.29     386  383.74  386.27  393.23     388
  398.11     389  402.86     390  406.24  390.27  406.63  390.26  409.53     390
  411.75  389.85   413.2  389.77   418.1  389.46  420.07  389.37  423.04  389.17
  425.75  388.96   431.8   389.4  440.42     390   442.9  390.41  445.97  390.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
       0    .075  230.43     .04  240.21    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        230.43  240.21           174.12  180.41  186.79             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7367

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.88   17.18  384.04   17.79     384   19.31  383.69   27.57     382
   33.56  381.11   40.22     380   72.92     378   75.63  377.86   83.54  377.49
   84.36  377.49    86.2  377.54   86.99  377.54   87.28  377.52   88.37  377.57
   88.81  377.59    98.7  377.77   99.18  377.78   99.84  377.77   153.1  379.18
  184.66  379.38  209.09  379.76  209.11  379.76  216.46  379.87  218.28  379.16
  220.46  378.71  224.14   378.3  227.18   379.5  239.26  379.44  239.27  379.44
  256.12  379.35  283.76  378.85  301.95     376  306.84  375.99  309.51  375.94
  311.37  375.92  312.47  375.93  313.98  375.94  315.54     376  317.31  376.05
  328.94  376.26  339.82  376.48  386.56  377.48  387.24  377.47  389.22  377.48
  389.83  377.49  393.84  377.67  396.67  377.79     398  377.85   399.4  377.89
  400.73  377.95  403.02     378  405.65   378.1  407.78  378.19  409.29  378.26
  410.92  378.34  413.44  378.46  417.48  378.69  420.02  378.83  428.31  379.29
   429.6  379.36  436.31  379.72  436.88  379.75  441.68     380  449.79  380.68
  452.35   380.9  458.41  381.46  460.97  381.69  464.19     382  470.57  382.96
  477.61     384  480.68  384.57  488.87     386  495.27  386.99  498.55  387.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  216.46     .04  227.18    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        216.46  227.18           143.37  150.84   157.8             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7216

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  385.75    1.08  385.65    5.95  385.32   10.54  384.89   18.99  384.19
   19.48  384.13   19.51  384.13   19.72  384.03   19.77  384.03   19.83     384
   21.34   383.6   24.22  382.82   25.18  382.55   27.46     382   33.57  381.07
   41.34  379.98   60.13     379   65.81  378.72   75.73  378.27   77.55  378.18
   79.67  378.07   80.08  378.07   80.17  378.06   81.18     378    81.5  377.95
   81.94  377.89    82.7  377.88  134.09  376.01  134.34     376   135.9  375.99
  142.56  375.98  148.85     376  148.97     376  159.54  375.75  186.07   376.5
  205.76   375.8  205.79   375.8   221.2  375.26  236.22  376.17  236.23  376.17
  243.36  376.61  267.12  376.15  298.57   377.1  324.96     378  344.89  379.72
  346.99   379.9  348.24     380  355.59  380.52  358.24  380.72  369.12  381.55
  372.54   381.8  375.03     382  377.33  382.49  384.79     384  385.68   384.2
  393.83     386  394.81  386.17  399.71  387.05  405.49     388  406.42  388.18
   407.5  388.41  413.63   389.1  417.54   389.6  418.61  389.74  420.77     390
   421.3  390.07  421.95  390.14  429.79  391.08  433.06  391.43  434.12  391.56
  434.45  391.61  438.52     392  445.08  392.32  449.48  392.54  451.09  392.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.07     .04  243.36    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.07  243.36           190.28  186.42  181.46             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
   377.1   439.5     390       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7030
```

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.29	2.41	387	10.05	386	29.45	384.45	32.78	384.15
33.33	384	36.52	383.46	40.31	382.87	43.31	382.38	46.06	382
46.12	381.98	48.59	381.84	49.64	381.82	49.97	381.8	50.4	381.79
50.62	381.77	71.01	380.53	81.91	380	92.52	379.05	103.93	378
123.79	376.72	134.74	376.11	135.07	376.05	135.57	376	135.6	375.99
137.36	375.81	139.35	375.62	140.29	375.67	145.45	375.59	151.15	375.29
153.13	375.29	164.88	375.94	165.28	375.96	165.81	376	175.82	375.48
205.64	375.09	233.21	375.65	248.05	375.46	259.75	375.31	261.56	373.84
262.29	373.43	263.48	373.62	268.09	375.54	278.5	375.62	279.83	375.63
309.7	376.93	312.89	376.93	319.01	378	322.75	379.67	328.88	379.92
332.16	380	333.98	380.26	345.53	382	358.26	384	368.51	385.52
371.9	386	379.53	387.21	385.4	388	395.57	389.56	398	389.92
398.64	390	402.14	390.27	406.61	390.59	410.26	390.83	412.74	390.96
415.65	391.11	416.49	391.16	419.22	391.29	423.04	391.64	423.34	391.66
427.09	392	428.37	392.13	432.56	392.47	446.6	393.09		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	259.75	.04	268.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
259.75	268.09	140.13	137.19	133.92	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
372.8	404.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6893

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.2	2.38	382.99	8.39	382.4	12.65	382	20.07	381.43
21.04	381.32	23.89	381.07	32.28	380	33.24	379.94	36.89	379.63
54.28	378.25	56.67	378	75.57	376.96	78.59	376.8	93.69	376
94.91	375.96	96.44	375.86	117.75	374.81	136.62	374	152.27	373.6
154.13	372.23	157.36	371.8	159.62	372.29	160.73	373.73	187.35	373.86
202.43	373.44	213.2	373.14	214.26	371.39	217.55	370.68	220.85	371.53
222.2	372.36	232.55	373.36	240.97	374.18	259.97	375.25	279.8	378.38
290.19	380	292.23	380.3	302.91	382	311	382.83	315.48	383.17
321.02	383.61	322.67	383.75	325.93	384	327.14	384.17	327.77	384.24
330.51	384.6	331.06	384.66	331.73	384.74	332.6	384.85	333.79	385.01
335.83	385.3	339.56	385.84	340.65	386	353.87	389.13	355.81	389.6
357.43	390	357.61	390.01	361.03	390.33	362.39	390.43	362.61	390.44
365.01	390.49	366.06	390.54	368.05	390.54	368.79	390.56	380.19	390.59
388.25	390.86								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.2	.04	232.55	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.2	232.55	124.46	126.53	128.02	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
333.6	364.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6766

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.56	7.75	380.34	9.62	380.18	11.59	380.1	27.69	379.6
34.11	379.36	42.51	378.88	44.96	378.81	50.68	378.9	55.82	378.75
59.91	378.59	69.06	378.34	72.96	378.1	76.53	377.98	77.17	377.98

```
   78.44  377.94   85.15  377.54  110.99  376.09  111.42     376  115.69  375.87
  158.02  374.36  160.91     374  186.61  372.66  212.26  373.01  237.02   373.1
  242.58  372.73  249.33  372.28  253.11  370.17   254.8  369.76  259.27  370.49
  262.36  373.11  274.27  374.24  274.29  374.25  278.85  374.68  293.57  375.12
  310.54  376.12  337.65     378   341.5  378.38  344.84  378.75  345.88  378.88
  348.32  378.95   351.5  379.16  353.85  379.26   354.2  379.31  358.69  379.46
  365.18  379.62  366.28  379.73  367.47     380  369.55   380.4  370.86  380.58
  373.19  381.02  375.37  381.31  379.99     382  390.01     384   392.8  384.16
   404.5  384.66  418.06  384.49  421.86   384.5  423.36  384.56  430.23  384.62
  434.86  384.68  447.58  385.29  449.06   385.3  453.71  385.19  463.39  384.68
  463.96  384.68  468.82  384.87  472.42  384.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  237.02     .04  262.36    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        237.02  262.36           103.31  103.53  104.46             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   367.4   402.8     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6663

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  387.81    5.71  387.58   42.61  386.42   45.32  386.36   48.81  386.32
   50.39  386.29   52.99  386.11   54.86     386   63.52     384    72.4     382
   77.53  381.09   78.45  381.02   81.39  381.16   82.73  381.16   83.84  381.06
   85.14  381.03   90.04   380.7   91.84  380.48   94.76     380  107.44  379.41
  109.18  379.29  112.44  379.13  115.99  378.92  130.42     378  130.89  377.95
  160.38  376.65  180.56  376.17  184.97  375.98  189.81  375.85  195.23  375.67
  199.49  375.58  206.72  375.37  221.58  374.58  234.91     374  259.85  373.17
  294.97  372.71  311.02  372.56  311.04  372.56  319.15  372.49  321.59  371.64
  322.41  371.16  323.12   369.4  326.04  369.26  336.33  370.36  339.84  373.35
  341.19  373.46  341.21  373.46  355.51  374.57  385.65  374.57  391.75     376
  435.14  377.35  436.73  377.48  438.03   377.5  441.59  377.71  445.02     378
  461.23     380  462.22  380.21  465.24  380.76  470.16  381.69  472.06     382
  479.53  383.54  481.93     384  486.28  384.27  488.32  384.35  505.54  384.31
  515.18  384.49  518.45  384.46   533.6  385.11  535.47  385.12  546.46  384.34
  548.83   384.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  319.15     .04  339.84    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        319.15  339.84            90.58   94.53   97.72             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    49.7    87.5     390   451.6   492.3     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6568

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  387.88   11.84  387.56   41.49  386.42    44.7  386.32   47.75  386.21
    48.2   386.2   51.49  386.19   52.85  386.15   53.93  386.14   56.03  386.06
   57.13     386    62.1  385.38   72.23  384.41   73.61  384.08      74     384
   78.37  383.37   81.15  382.86   83.41  382.52   85.95     382   87.39  381.89
   89.26  381.77  106.91  380.23  109.52  380.12  112.81     380  123.86  379.46
  127.28  379.12  128.69  379.02   131.4  378.74  133.26   378.6  138.52     378
  144.95  377.67  154.93   377.2  167.84  376.57  179.91     376  190.81  375.63
  206.03  375.07  215.11  374.75  231.43  374.02  231.55     374  251.99  373.42
  286.56  372.07  303.48     372   303.5     372  307.17  371.99  309.55  369.54
  314.39  368.65  318.89   369.1  320.63   372.7  333.89  373.01   335.3  373.05
  354.94  374.07     388  376.19  406.97     378  432.51     380  436.02  380.51
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  440.79  381.03  449.38     382  453.12  382.55  464.72  383.92  465.61     384
  472.99  385.68  474.22     386  482.07  387.25  486.94     388  503.32     390
  506.03  390.12  516.08  390.61  558.49  391.41  562.74  391.48  574.89  391.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  307.17     .04  320.63    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        307.17  320.63           112.95  114.27  115.74             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    56.9      70     395     480   528.4     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6454

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.74    7.58  382.41   11.61  382.36   18.35  382.85   20.37  382.77
   21.37  382.79   29.92  382.63   32.76   382.6   39.52  382.39   47.69     382
   53.79  381.37   55.59  381.15   62.67     380   71.51  378.91   77.75     378
   80.09  377.84   81.89  377.87   84.21     378   85.66  378.04   91.88  378.33
   93.96  378.47  103.28  378.95  112.28  379.59  117.21  379.85  119.53     380
  122.79  380.14  126.31  380.18  133.22     380  134.81  379.84  137.81  379.45
  141.48  378.79  145.53     378  155.89     376  166.96  373.47  173.88  373.47
  191.09  372.71   200.3  371.97   201.3  371.89  212.37  370.12  213.27  368.43
  215.67   368.3  218.52  368.67  224.12  371.79  230.68  372.35  245.49   373.6
  269.36  373.99  286.75  373.99  309.85     374  325.09  374.82  342.86  375.85
  347.28  376.79   353.2     378   358.5  378.88  365.42  379.84  366.88     380
   374.5  381.38  377.36     382  383.44  382.65  394.15     384  397.08  384.34
   402.2  384.86  404.24  385.01  407.53   385.3  408.74  385.37  414.73   385.6
  419.68  385.94   428.4  386.28   432.3  386.26  436.12  386.41  452.71  387.66
  457.68     388   470.4  388.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   201.3     .04  224.12    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         201.3  224.12           102.69  103.78  104.74             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   120.4   125.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6350

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.25    2.84  383.98    4.85  383.88   29.21  382.05   29.42     382
   31.52  381.83   32.17   381.8   32.46  381.78   34.04  381.73   35.06  381.64
   53.47   380.4   61.23     380   61.52  379.95    62.6  379.83   66.18  379.72
   67.82  379.63   68.74  379.59  124.99     378  139.11  377.29  159.11  376.32
  161.58  376.22  169.81     376  175.65  375.83  176.25  375.83     201  374.61
  220.13  373.39  226.47  371.43  230.05  370.32  235.85   369.8  238.08  367.36
  241.57  366.97   246.9  368.37  249.25  372.63  256.57  374.75  266.03   377.5
  266.59     378  329.45     378  332.13  377.82  334.24  377.69  335.82  377.59
  339.75  377.35  347.23  377.86  349.56     378  359.53  377.16  360.29  377.08
  378.66     378  382.15  378.35  383.71  378.55  386.87  378.91  388.05  379.05
   394.9     380  395.88  380.18   400.2  380.85  405.44  381.69  407.44     382
  409.21  382.33  411.05   382.5  417.68  383.44  420.21  383.65  423.51  383.96
     426  384.23  427.13   384.2  428.56   384.3  433.67  384.73  437.93  385.11
  441.27  385.38  449.14  386.13  468.97     388

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  220.13     .04  249.25    .075
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        220.13  249.25            52.33   53.78   55.24             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   264.6   271.9     390       F
   325.6   345.5     390       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   271.9   325.6     390
```

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6296

INPUT
Description:

Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.85	5.73	386.49	14.33	386	18.53	385.51	23.71	384.86
25.79	384.56	29.31	384	30.39	383.8	37.57	382.43	39.51	382.02
41.76	381.69	54.85	380	70.55	379.5	94.75	378.51	95.08	378.49
95.41	378.49	98.12	378.36	99.34	378.31	103.26	378.2	106.66	378.14
108.29	378.08	109.53	378.06	141.16	376.68	172.07	375.5	191.67	374.94
202.55	371.87	209.11	370.03	214.77	369.87	215.93	367.68	217.55	367.41
219.25	367.49	221.17	369	223.1	368.24	224.71	368.4	227.95	371.85
232.63	373.42	243.36	377.02	259.81	378.9	289.8	379.01	303.36	379.05
308.59	379.33	337.18	380	341.87	380.42	350.42	381.43	353.73	381.8
355.27	382	358.1	382.65	364.11	384	366.25	384.53	371.48	385.78
372.48	386	389.73	388	393.2	388.71	393.82	388.77	394.89	388.96
396.31	389.18	398.15	389.31	401.07	389.7	406.01	389.86	406.78	389.82
409.23	389.97	409.46	390	423.29	390.45	424.72	390.55	426.95	390.71
438.44	391.5	444.21	391.79	445.96	392	456.32	394	459.74	394.71
466.2	396	479.75	398						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	214.77	.04	227.95	.075

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.77  227.95            98.47   99.02   99.58             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395
```

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 6250

INPUT
Description: Hearthstone Road
Distance from Upstream XS = 41
Deck/Roadway Width = 30
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
109.53	378.06		126.2	378.165		148.4	377.583	
171.8	377.249		194.8	377.026		219.5	377.097	
242.2	377.664		267.9	378.981		291.3	380.656	
311.7	383.135		336.6	385.512		479.75	398	

Upstream Bridge Cross Section Data
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.85	5.73	386.49	14.33	386	18.53	385.51	23.71	384.86
25.79	384.56	29.31	384	30.39	383.8	37.57	382.43	39.51	382.02
41.76	381.69	54.85	380	70.55	379.5	94.75	378.51	95.08	378.49
95.41	378.49	98.12	378.36	99.34	378.31	103.26	378.2	106.66	378.14
108.29	378.08	109.53	378.06	141.16	376.68	172.07	375.5	191.67	374.94
202.55	371.87	209.11	370.03	214.77	369.87	215.93	367.68	217.55	367.41
219.25	367.49	221.17	369	223.1	368.24	224.71	368.4	227.95	371.85

```
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        214.77  227.95            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

Downstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    93.6     378            109 378.165           131.9 377.583
   155.7 377.249          179.1 377.026           204.2 377.097
   227.3 377.664          253.6 378.981           277.3 380.656
   306.1 383.135          331.6 385.512          338.94     386

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.5    2.88  381.26     8.6  380.81   10.21   380.8   18.26  381.42
   23.64  381.72   28.86     382   31.26  382.04   31.91  382.04   38.99     382
   43.19   381.9    43.7  381.88   47.28  381.77   47.53  381.75   49.17   381.7
   49.49  381.68    51.7  381.59   53.73  381.49   76.26  380.56   76.87  380.53
   77.82  380.46   79.53  380.32   83.18     380   86.26  379.56   88.68  379.19
   90.12  378.97   98.61     378  127.05   376.5  131.06   376.5  161.92   376.1
  189.14  374.65  197.54  369.94  197.55  369.93  203.42  366.64  221.43  366.39
  225.24  370.02  227.55  372.22  227.56  372.23  229.54   374.1  255.33   377.5
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        197.54  225.24            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5     373       F
   229.3  443.14     373       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
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Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              24.8   62.23     .013     .013        0                  .5                1
Upstream   Elevation =  367.33
           Centerline Station =  217
Downstream Elevation =  367.76
           Centerline Station =  210

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              24.8   62.41     .013     .013        0                  .5                1
Upstream   Elevation =  367.28
           Centerline Station =  223
Downstream Elevation =  366.19
           Centerline Station =  215

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         76.30    Culv Full Len (ft)
  # Barrels                     1    Culv Vel US (ft/s)          6.16
  Q Barrel (cfs)             76.30    Culv Vel DS (ft/s)          8.20
  E.G. US. (ft)             372.04    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             371.87    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              370.58    Culv Frctn Ls (ft)          0.20
  W.S. DS (ft)              370.54    Culv Exit Loss (ft)         1.00
  Delta EG (ft)               1.45    Culv Entr Loss (ft)         0.29
  Delta WS (ft)               1.33    Q Weir (cfs)
  E.G. IC (ft)              371.51    Weir Sta Lft (ft)
  E.G. OC (ft)              372.05    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        371.16    Weir Max Depth (ft)
  Culv WS Outlet (ft)       370.54    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.64    Min El Weir Flow (ft)     377.04


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        132.45    Culv Full Len (ft)         52.26
  # Barrels                     1    Culv Vel US (ft/s)         10.54
  Q Barrel (cfs)            132.45    Culv Vel DS (ft/s)         10.83
  E.G. US. (ft)             374.72    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             374.65    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              371.58    Culv Frctn Ls (ft)          0.44
  W.S. DS (ft)              371.50    Culv Exit Loss (ft)         1.75
  Delta EG (ft)               3.15    Culv Entr Loss (ft)         0.86
  Delta WS (ft)               3.14    Q Weir (cfs)
  E.G. IC (ft)              374.45    Weir Sta Lft (ft)
  E.G. OC (ft)              374.73    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)
  Culv WS Outlet (ft)       371.50    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         3.44    Min El Weir Flow (ft)     377.04


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        167.59    Culv Full Len (ft)         62.23
  # Barrels                     1    Culv Vel US (ft/s)         13.34
  Q Barrel (cfs)            167.59    Culv Vel DS (ft/s)         13.34
  E.G. US. (ft)             378.29    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             378.21    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              373.49    Culv Frctn Ls (ft)          0.85
  W.S. DS (ft)              373.29    Culv Exit Loss (ft)         2.57
  Delta EG (ft)               4.80    Culv Entr Loss (ft)         1.38
  Delta WS (ft)               4.92    Q Weir (cfs)              290.75
  E.G. IC (ft)              377.10    Weir Sta Lft (ft)          99.83
  E.G. OC (ft)              378.29    Weir Sta Rgt (ft)         254.53
  Culvert Control           Outlet    Weir Submerg                0.00
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)         1.27
  Culv WS Outlet (ft)       371.76    Weir Avg Depth (ft)         0.75
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)    116.03
  Culv Crt Depth (ft)         3.71    Min El Weir Flow (ft)     377.04
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CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	153.86	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.24
Q Barrel (cfs)	153.86	Culv Vel DS (ft/s)	12.24
E.G. US. (ft)	379.21	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.01	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	375.44	Culv Frctn Ls (ft)	0.71
W.S. DS (ft)	374.99	Culv Exit Loss (ft)	1.88
Delta EG (ft)	3.76	Culv Entr Loss (ft)	1.16
Delta WS (ft)	4.02	Q Weir (cfs)	924.09
E.G. IC (ft)	375.99	Weir Sta Lft (ft)	77.28
E.G. OC (ft)	379.20	Weir Sta Rgt (ft)	271.31
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.20
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.42
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	276.35
Culv Crt Depth (ft)	3.63	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	149.32	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.88
Q Barrel (cfs)	149.32	Culv Vel DS (ft/s)	11.88
E.G. US. (ft)	379.61	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.35	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.25	Culv Frctn Ls (ft)	0.67
W.S. DS (ft)	375.64	Culv Exit Loss (ft)	1.58
Delta EG (ft)	3.36	Culv Entr Loss (ft)	1.10
Delta WS (ft)	3.71	Q Weir (cfs)	1278.18
E.G. IC (ft)	375.64	Weir Sta Lft (ft)	67.36
E.G. OC (ft)	379.60	Weir Sta Rgt (ft)	276.57
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.58
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.68
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	352.17
Culv Crt Depth (ft)	3.59	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	145.75	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.60
Q Barrel (cfs)	145.75	Culv Vel DS (ft/s)	11.60
E.G. US. (ft)	379.88	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.57	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.82	Culv Frctn Ls (ft)	0.64
W.S. DS (ft)	376.09	Culv Exit Loss (ft)	1.36
Delta EG (ft)	3.06	Culv Entr Loss (ft)	1.05
Delta WS (ft)	3.48	Q Weir (cfs)	1550.96
E.G. IC (ft)	375.38	Weir Sta Lft (ft)	59.36
E.G. OC (ft)	379.87	Weir Sta Rgt (ft)	280.13
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.83
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.84
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	406.99
Culv Crt Depth (ft)	3.56	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	87.70	Culv Full Len (ft)	25.15
# Barrels	1	Culv Vel US (ft/s)	8.11
Q Barrel (cfs)	87.70	Culv Vel DS (ft/s)	6.98
E.G. US. (ft)	372.04	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	371.87	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	370.58	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	370.54	Culv Exit Loss (ft)	0.71
Delta EG (ft)	1.45	Culv Entr Loss (ft)	0.51
Delta WS (ft)	1.33	Q Weir (cfs)	
E.G. IC (ft)	371.88	Weir Sta Lft (ft)	
E.G. OC (ft)	372.02	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	370.49	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.84	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	134.55	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	10.71
Q Barrel (cfs)	134.55	Culv Vel DS (ft/s)	10.71
E.G. US. (ft)	374.72	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	374.65	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	371.58	Culv Frctn Ls (ft)	0.55
W.S. DS (ft)	371.50	Culv Exit Loss (ft)	1.71
Delta EG (ft)	3.15	Culv Entr Loss (ft)	0.89
Delta WS (ft)	3.14	Q Weir (cfs)	
E.G. IC (ft)	374.49	Weir Sta Lft (ft)	
E.G. OC (ft)	374.72	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.46	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	167.66	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	13.34
Q Barrel (cfs)	167.66	Culv Vel DS (ft/s)	13.34
E.G. US. (ft)	378.29	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.21	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	373.49	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	373.29	Culv Exit Loss (ft)	2.57
Delta EG (ft)	4.80	Culv Entr Loss (ft)	1.38
Delta WS (ft)	4.92	Q Weir (cfs)	290.75
E.G. IC (ft)	377.01	Weir Sta Lft (ft)	99.83
E.G. OC (ft)	378.29	Weir Sta Rgt (ft)	254.53
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	1.27
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	0.75
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	116.03
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	154.04	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.26
Q Barrel (cfs)	154.04	Culv Vel DS (ft/s)	12.26
E.G. US. (ft)	379.21	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.01	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	375.44	Culv Frctn Ls (ft)	0.72
W.S. DS (ft)	374.99	Culv Exit Loss (ft)	1.88
Delta EG (ft)	3.76	Culv Entr Loss (ft)	1.17
Delta WS (ft)	4.02	Q Weir (cfs)	924.09
E.G. IC (ft)	375.91	Weir Sta Lft (ft)	77.28
E.G. OC (ft)	379.21	Weir Sta Rgt (ft)	271.31
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.20
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.42
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	276.35
Culv Crt Depth (ft)	3.63	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	149.50	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.90
Q Barrel (cfs)	149.50	Culv Vel DS (ft/s)	11.90
E.G. US. (ft)	379.61	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.35	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.25	Culv Frctn Ls (ft)	0.68
W.S. DS (ft)	375.64	Culv Exit Loss (ft)	1.59
Delta EG (ft)	3.36	Culv Entr Loss (ft)	1.10
Delta WS (ft)	3.71	Q Weir (cfs)	1278.18
E.G. IC (ft)	375.56	Weir Sta Lft (ft)	67.36
E.G. OC (ft)	379.61	Weir Sta Rgt (ft)	276.57
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.58
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.68
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	352.17

Culv Crt Depth (ft)	3.59	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	146.29	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.64
Q Barrel (cfs)	146.29	Culv Vel DS (ft/s)	11.64
E.G. US. (ft)	379.88	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.57	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.82	Culv Frctn Ls (ft)	0.65
W.S. DS (ft)	376.09	Culv Exit Loss (ft)	1.38
Delta EG (ft)	3.06	Culv Entr Loss (ft)	1.05
Delta WS (ft)	3.48	Q Weir (cfs)	1550.96
E.G. IC (ft)	375.32	Weir Sta Lft (ft)	59.36
E.G. OC (ft)	379.90	Weir Sta Rgt (ft)	280.13
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.83
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.84
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	406.99
Culv Crt Depth (ft)	3.57	Min El Weir Flow (ft)	377.04

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6197

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39
225.24	370.02	227.55	372.22	227.56	372.23	229.54	374.1	255.33	377.5
286.19	380.21	290.61	381.26	291.85	381.66	302.93	382	306.38	382.34
307.8	382.5	315.82	383.3	321.82	384	332.19	385.15	338.94	386
354.08	387.58	358.3	388	361.22	388.32	364.98	388.73	371.17	389.42
376.5	390	377.44	390.09	382.23	390.53	383.73	390.65	389.09	391.12
395.34	391.57	396	391.63	401.1	392	405.04	392.54	406.26	392.72
413.74	394	418.95	394.57	420.55	394.73	421.65	394.84	427.34	395.45
432.93	395.77	433.17	395.8	434.1	395.89	438.66	396.46	441.16	396.79
443.14	397.11								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	197.54	.04	225.24	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.54	225.24	75.78	74.81	73.83	.3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	180.5	373	F
229.3	443.14	373	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
23.7	63.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6122

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.69	8.11	379.53	9.53	379.45	17.27	379.23	20.32	379.02
22.13	378.95	24.3	378.81	31.57	378.41	34.72	378.26	38.27	378.14
47.27	377.96	49.2	377.94	52.81	377.79	56.11	377.88	60.11	377.91
62.59	377.87	64.37	377.81	65.09	377.76	66.54	377.7	67.14	377.65
68.62	377.58	71.62	377.27	75.62	376.99	79.3	376.57	81.7	376.35

```
   84.46     376  105.56  374.69  108.26  374.67  121.47  375.38  123.91   375.3
  125.19  375.41  127.48  375.55  129.74  375.66  131.98  375.57  134.89  375.74
  137.16  375.81  137.87  375.78  140.09  375.81  142.39  375.77  145.17  375.64
     148  375.41   151.1  375.05  154.75  374.52  159.06  373.88  159.11  374.24
   175.4  373.46  185.87  373.46  213.06  372.27  225.58  370.42  231.74  369.51
  232.66  367.04  234.89  366.62  240.64  367.46   244.1  370.65  253.02  370.54
  255.64  371.33  278.66  378.25  302.77  378.97  352.21     380   359.2  381.14
  364.26     382  367.65   382.7  370.16  383.19  373.86     384  378.45  385.21
  381.62     386  383.59  386.52  388.85     388  390.89  388.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  225.58     .04   244.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        225.58   244.1            98.18   94.21   91.92             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
   119.8   162.9     385       F
   185.6   201.5     385       F
   272.4   384.9     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   162.9   185.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6028

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   382.8   19.58  382.41   21.78  382.31   25.29     382   28.82  381.21
   33.73     380   38.53  378.96   47.92  377.02   53.08     376   53.61  375.96
   54.06  375.94    63.8  375.32   75.35  374.08   75.77     374   75.87     374
   79.55   373.5   79.83  373.47   80.44  373.45   80.74   373.5   108.3  372.93
  132.26  372.05  132.53     372  152.08     371  183.23  368.87  204.31   368.6
  204.32   368.6   205.1  368.59  214.72  368.32  216.43  366.61  219.36  365.53
  223.23  366.03  225.53  367.69  234.47  368.82  242.06  369.78  266.05  372.16
  283.38  373.66  295.75  374.49  302.61  375.35  306.21  375.74  307.44   375.9
  308.45     376  309.16  376.16  309.43  376.21  312.19  376.42  326.29  377.09
  336.37  377.85  338.16     378  343.77  379.27  346.84     380  352.57  381.65
  353.72     382  360.42     384  366.91     386  373.75     388  374.25  388.15
  375.39  388.44  376.82  388.77   382.2     390  385.62  390.91   387.5  391.38
  390.05     392  391.18  392.24  393.51   392.7  394.79  392.94   395.7  393.09
  396.68  393.28  398.05   393.5  400.71     394  401.05  394.02  401.31  394.02
  401.89  394.05  402.27  394.05  404.67  394.17

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.72     .04  234.47    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.72  234.47           100.93  101.91  101.19             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
      61   113.9     390       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    19.7      61     390   393.1  404.67     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5926

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.59     5.1     382     9.3  381.27   15.23  380.26   16.79     380
    17.4  379.93   17.99  379.89   25.61  379.19   28.72  378.92   41.87  378.06
   42.14  378.04   42.69  378.01    42.8     378   47.15  377.66   50.35  377.44
   52.95  377.29   54.78  377.18   55.85  377.13   57.24  377.07   58.56  376.99
   61.22   376.9    62.6   376.8   64.49  376.66    65.4  376.61   68.93  376.32
```

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   69.43  376.28   72.62     376   79.17  375.23   79.85  375.13   81.75  374.86
   86.54  374.13    86.9  374.08   87.35     374   97.43   372.6  101.22     372
  101.71  371.98  102.49  371.97  103.31  371.98  103.65     372   103.7  371.95
  108.23  371.29  120.13  371.02  124.98  371.02  148.13   370.3   170.6  369.08
  174.12  367.61  175.06  367.22  180.45  367.62  186.44  367.24   187.3  365.38
  189.41  365.46  192.74  365.89  197.28  368.62  204.41  369.15  222.38  370.47
  248.76  371.19     255     372  274.29   373.9  275.14     374  287.23     376
  292.49  377.34  295.11     378  299.87  379.19  303.25     380  311.49     382
  318.69  383.66  320.08     384  327.45  385.84  328.11     386  335.19  387.48
  337.59     388  343.86  388.94  350.88     390  354.59  390.61   356.8  390.96

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.44     .04  197.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.44  197.28           102.11  102.54  102.93             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    60.6    75.4     385       F
   103.4   163.4     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    75.4   103.4     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5824

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.17    1.53  379.09    3.56  378.96    5.73   378.8    8.65  378.57
   10.86   378.4   11.67  378.34   15.69     378   20.08  377.29   27.83     376
   29.81  375.82   31.38  375.67   39.63  374.92   42.87  374.63   44.59   374.5
   49.91     374   62.23  371.55   92.34  370.63  109.26   369.2  110.94  369.06
  120.72  365.29  124.37  365.08  126.51  365.24  130.92  367.14  139.51  368.75
  157.36   372.1  180.06  370.47  190.05  370.47  216.33     372  219.38  372.57
  223.55  373.34  225.27  373.66  227.19     374  231.58  375.26  234.22     376
  234.79  376.18  240.58     378  243.82  379.15  246.06     380  248.42  380.86
  251.63     382  257.95  383.86   258.4     384  260.44   384.5  266.77     386
  268.22  386.33  275.61     388  278.96   388.7   285.3     390  291.48  391.05
  292.67  391.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  109.26     .04  139.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        109.26  139.51            75.62   79.21   82.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5745

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     380    15.5  378.48   20.71     378    30.8  377.15   37.79  376.64
    40.3  376.44   46.11  376.04   46.38     376    47.1  375.96   69.11     374
    77.1  373.47  103.89  370.86  131.17   369.6  133.12  368.74  140.37  365.55
  143.61     365  144.73  363.71  148.48  363.03  150.47  363.33   159.4  368.15
  163.52  368.56  176.34  369.82  186.31   370.3  194.64  373.03  209.12  373.26
  225.27  372.55   225.6  372.55  225.92  372.54  226.18  372.55   226.7  372.55
   233.5  372.96   233.9  372.98  234.19     373  234.39     373  234.53  373.01
  234.67  373.01  234.83  373.02  242.93  373.56  243.64  373.58  246.98  373.68
  250.97   373.8  257.66     374  263.52  375.65  264.76     376  265.45  376.19
  271.67     378     272  378.09  278.61     380  283.25  381.15  286.54     382
  296.07  383.94  296.19  383.96  296.34     384  296.53  384.04  296.57  384.04
  296.61  384.05  296.75  384.07  297.08  384.12   302.2  384.91  306.31  385.41
  307.97  385.64  308.53  385.72  311.26     386  312.97  386.11  313.27  386.13
   317.7  386.41
```

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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  131.17     .04   159.4    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        131.17   159.4            34.07   34.02   34.04             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   170.3   207.9     385       F
   225.8   247.8     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   207.9   225.8     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5711

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.06  162.62            96.24   96.18   98.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5650

INPUT
Description: Brookemede Road
Distance from Upstream XS =      37
Deck/Roadway Width        =      37
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     101 372.301             151 370.157             188 369.953
   218.7 370.181

Upstream Bridge Cross Section Data
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
```

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  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        136.06  162.62            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  128.33  372.41           152.3 372.301           202.9 370.157
   238.6 369.953           268.9 370.181

Downstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  375.09    1.07  375.04    1.94  375.04    2.62  375.01    3.78  375.02
       5  374.95    6.16  374.97   13.83   374.5   15.25  374.52   31.31  375.33
   32.18  375.35   39.66   374.3   45.41  373.86   50.93  373.59   53.48  373.55
   59.91  373.31    62.6  373.32   81.57  373.51   85.54  373.44   92.18  373.21
   98.33  373.03  102.35  373.09  105.39  372.98  113.27  372.64  128.33  372.41
  164.68   369.2  190.47  367.33  202.12  366.92  205.34  366.81  210.08   364.6
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        205.34   238.7            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8   367.8       F
     239   440.9   367.8       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  361.93
           Centerline Station =  148
Downstream Elevation =  362.09
           Centerline Station =  215

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
```

FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	15	62.66	.013	.013	0	.5	1

Upstream Elevation = 362.32
Centerline Station = 153
Downstream Elevation = 362.32
Centerline Station = 220

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	82.03	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	6.53
Q Barrel (cfs)	82.03	Culv Vel DS (ft/s)	6.53
E.G. US. (ft)	367.43	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	367.33	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	366.30	Culv Frctn Ls (ft)	0.20
W.S. DS (ft)	366.23	Culv Exit Loss (ft)	0.60
Delta EG (ft)	1.14	Culv Entr Loss (ft)	0.33
Delta WS (ft)	1.10	Q Weir (cfs)	
E.G. IC (ft)	366.34	Weir Sta Lft (ft)	
E.G. OC (ft)	367.43	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.74	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	129.45	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	10.30
Q Barrel (cfs)	129.45	Culv Vel DS (ft/s)	10.30
E.G. US. (ft)	370.26	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	370.21	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	367.37	Culv Frctn Ls (ft)	0.51
W.S. DS (ft)	367.29	Culv Exit Loss (ft)	1.56
Delta EG (ft)	2.88	Culv Entr Loss (ft)	0.82
Delta WS (ft)	2.92	Q Weir (cfs)	8.66
E.G. IC (ft)	368.84	Weir Sta Lft (ft)	148.65
E.G. OC (ft)	370.27	Weir Sta Rgt (ft)	188.47
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	0.30
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	0.19
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	7.54
Culv Crt Depth (ft)	3.41	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	72.91	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.80
Q Barrel (cfs)	72.91	Culv Vel DS (ft/s)	5.80
E.G. US. (ft)	372.24	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.14	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	371.36	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	371.31	Culv Exit Loss (ft)	0.47
Delta EG (ft)	0.88	Culv Entr Loss (ft)	0.26
Delta WS (ft)	0.83	Q Weir (cfs)	481.34
E.G. IC (ft)	365.97	Weir Sta Lft (ft)	100.26
E.G. OC (ft)	372.25	Weir Sta Rgt (ft)	252.37
Culvert Control	Outlet	Weir Submerg	0.41
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	2.28
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.17
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	148.32
Culv Crt Depth (ft)	2.58	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	58.62	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.66
Q Barrel (cfs)	58.62	Culv Vel DS (ft/s)	4.66
E.G. US. (ft)	373.18	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.90	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	372.69	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.59	Culv Exit Loss (ft)	0.24

Delta EG (ft)	0.50	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.32	Q Weir (cfs)	1116.20
E.G. IC (ft)	365.40	Weir Sta Lft (ft)	77.10
E.G. OC (ft)	373.20	Weir Sta Rgt (ft)	256.91
Culvert Control	Outlet	Weir Submerg	0.70
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.23
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.66
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	298.30
Culv Crt Depth (ft)	2.31	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	54.75	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.36
Q Barrel (cfs)	54.75	Culv Vel DS (ft/s)	4.36
E.G. US. (ft)	373.56	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.17	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.17	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.04	Culv Exit Loss (ft)	0.16
Delta EG (ft)	0.39	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.13	Q Weir (cfs)	1468.75
E.G. IC (ft)	365.25	Weir Sta Lft (ft)	70.88
E.G. OC (ft)	373.58	Weir Sta Rgt (ft)	258.81
Culvert Control	Outlet	Weir Submerg	0.76
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.62
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.97
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	370.40
Culv Crt Depth (ft)	2.23	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	59.54	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.74
Q Barrel (cfs)	59.54	Culv Vel DS (ft/s)	4.74
E.G. US. (ft)	373.82	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.32	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.37	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	373.20	Culv Exit Loss (ft)	0.18
Delta EG (ft)	0.45	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.12	Q Weir (cfs)	1725.26
E.G. IC (ft)	365.44	Weir Sta Lft (ft)	66.97
E.G. OC (ft)	373.83	Weir Sta Rgt (ft)	260.00
Culvert Control	Outlet	Weir Submerg	0.75
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.86
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	2.16
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	417.34
Culv Crt Depth (ft)	2.32	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	81.97	Culv Full Len (ft)	38.32
# Barrels	1	Culv Vel US (ft/s)	6.52
Q Barrel (cfs)	81.97	Culv Vel DS (ft/s)	6.56
E.G. US. (ft)	367.43	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	367.33	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	366.30	Culv Frctn Ls (ft)	0.12
W.S. DS (ft)	366.23	Culv Exit Loss (ft)	0.60
Delta EG (ft)	1.14	Culv Entr Loss (ft)	0.33
Delta WS (ft)	1.10	Q Weir (cfs)	
E.G. IC (ft)	366.72	Weir Sta Lft (ft)	
E.G. OC (ft)	367.44	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.23	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.74	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	128.89	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	10.26
Q Barrel (cfs)	128.89	Culv Vel DS (ft/s)	10.26
E.G. US. (ft)	370.26	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	370.21	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	367.37	Culv Frctn Ls (ft)	0.50

W.S. DS (ft)	367.29	Culv Exit Loss (ft)	1.55
Delta EG (ft)	2.88	Culv Entr Loss (ft)	0.82
Delta WS (ft)	2.92	Q Weir (cfs)	8.66
E.G. IC (ft)	369.19	Weir Sta Lft (ft)	148.65
E.G. OC (ft)	370.24	Weir Sta Rgt (ft)	188.47
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	0.30
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	0.19
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	7.54
Culv Crt Depth (ft)	3.40	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	71.76	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.71
Q Barrel (cfs)	71.76	Culv Vel DS (ft/s)	5.71
E.G. US. (ft)	372.24	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.14	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	371.36	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	371.31	Culv Exit Loss (ft)	0.46
Delta EG (ft)	0.88	Culv Entr Loss (ft)	0.25
Delta WS (ft)	0.83	Q Weir (cfs)	481.34
E.G. IC (ft)	366.31	Weir Sta Lft (ft)	100.26
E.G. OC (ft)	372.22	Weir Sta Rgt (ft)	252.37
Culvert Control	Outlet	Weir Submerg	0.41
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	2.28
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.17
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	148.32
Culv Crt Depth (ft)	2.56	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	57.18	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.55
Q Barrel (cfs)	57.18	Culv Vel DS (ft/s)	4.55
E.G. US. (ft)	373.18	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.90	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	372.69	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.59	Culv Exit Loss (ft)	0.22
Delta EG (ft)	0.50	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.32	Q Weir (cfs)	1116.20
E.G. IC (ft)	365.73	Weir Sta Lft (ft)	77.10
E.G. OC (ft)	373.17	Weir Sta Rgt (ft)	256.91
Culvert Control	Outlet	Weir Submerg	0.70
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.23
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.66
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	298.30
Culv Crt Depth (ft)	2.28	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	53.49	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.26
Q Barrel (cfs)	53.49	Culv Vel DS (ft/s)	4.26
E.G. US. (ft)	373.56	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.17	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.17	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.04	Culv Exit Loss (ft)	0.15
Delta EG (ft)	0.39	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.13	Q Weir (cfs)	1468.75
E.G. IC (ft)	365.58	Weir Sta Lft (ft)	70.88
E.G. OC (ft)	373.55	Weir Sta Rgt (ft)	258.81
Culvert Control	Outlet	Weir Submerg	0.76
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.62
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.97
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	370.40
Culv Crt Depth (ft)	2.20	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	58.20	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.63
Q Barrel (cfs)	58.20	Culv Vel DS (ft/s)	4.63
E.G. US. (ft)	373.82	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.32	Culv Inv El Dn (ft)	362.32

E.G. DS (ft)	373.37	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	373.20	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.45	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.12	Q Weir (cfs)	1725.26
E.G. IC (ft)	365.77	Weir Sta Lft (ft)	66.97
E.G. OC (ft)	373.80	Weir Sta Rgt (ft)	260.00
Culvert Control	Outlet	Weir Submerg	0.75
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.86
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	2.16
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	417.34
Culv Crt Depth (ft)	2.30	Min El Weir Flow (ft)	369.97

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5614

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	375.09	1.07	375.04	1.94	375.04	2.62	375.01	3.78	375.02
5	374.95	6.16	374.97	13.83	374.5	15.25	374.52	31.31	375.33
32.18	375.35	39.66	374.3	45.41	373.86	50.93	373.59	53.48	373.55
59.91	373.31	62.6	373.32	81.57	373.51	85.54	373.44	92.18	373.21
98.33	373.03	102.35	373.09	105.39	372.98	113.27	372.64	128.33	372.41
164.68	369.2	190.47	367.33	202.12	366.92	205.34	366.81	210.08	364.6
211.22	364.43	215.09	361.81	217.13	362.04	229.59	362.98	238.7	368.44
238.98	368.61	251.44	369.69	268.94	370.18	285.07	369.62	290.27	370.06
298.37	370.04	306.37	370.28	324.69	371.75	335.39	372	342.38	373.55
344.58	374	353.22	376	364.13	378	366.42	378.31	380.54	380.03
386.38	380.25	391.69	380.39	399.18	380.94	403.65	381.15	406.06	381.34
407.91	381.42	410.66	381.64	411.73	381.67	415.82	382	420.24	382.3
421.1	382.39	423.89	382.58	424.39	382.64	428.52	382.91	431.83	383.32
435.07	383.79	435.47	383.82	436.48	384	438.12	384.43	440.9	385.22

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	205.34	.04	238.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
205.34	238.7	60.47	54.67	45.26	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	193.8	367.8	F
239	440.9	367.8	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
72.7	102.2	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5560

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.71	12.44	380.66	20.28	380.48	30.01	380.06	32.55	380
35.14	379.9	40.44	379.76	66.9	378.85	77.73	378.19	86.8	377.53
106.28	376	135.5	374	137.27	373.83	145.55	373.21	146.86	373.14
152.29	373.03	158.19	372.73	169.54	372.53	171.14	372.42	174.7	372
177.92	371.83	200.19	370.97	216.51	371.11	224.54	370.88	233.81	370.74
237.26	370.65	249.92	370	272.36	369.5	305.11	368.25	330.75	367.7
351.63	367.26	351.64	367.26	352.8	367.24	361.62	364.64	365.14	363.68
366.63	362.08	370.12	362.09	377.69	362.11	381.2	366.86	381.86	366.92
381.88	366.92	400.75	368.4	415.84	369.84	428.22	370.13	441.48	370.08
454.62	370.47	468.56	371.58	474.03	371.79	478.41	372	486.49	373.21
492.4	374	496.8	374.72	506.14	376	510.13	376.65	519.35	378
525.84	378.52	527.4	378.56	530.32	378.74	538.47	379.03	541.22	379.02
541.91	379.05	543.2	379.02	545.47	379.17	545.81	379.17	552.05	379.68
557.2	380.19	563.37	380.95	569.96	382	577.27	384	584.9	386

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

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       0    .075   352.8     .04   381.2    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         352.8   381.2            56.62   49.74    41.3             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5510

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        251.67  273.96            36.56   36.42   38.18             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 5500

INPUT
Description: Driveway
Distance from Upstream XS =    8.75
Deck/Roadway Width        =    11.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     245     368           246.3 368.296           251.7 369.922 368.922
   261.7 369.925 368.925   272.1 369.867 368.867   278.5 368.291
     281   367.8

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
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  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        251.67  273.96             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  218.37  367.75           222.9 368.709           228.8 369.891 368.891
   238.9 369.925 368.925     248 369.959 368.959   254.6 368.591
  256.61  368.13

Downstream Bridge Cross Section Data
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.2    5.49  380.43   19.15  378.55   22.99     378   24.44  377.87
    27.6  377.66   28.15  377.66   32.08  377.85   34.11  377.81   34.84  377.86
   36.16  377.76    36.5  377.71   36.95   377.6   37.24  377.63   37.53  377.55
   43.71  377.04   44.96  377.01   53.85  377.19   61.96  376.88   69.36  376.67
    78.2  376.53   80.32  376.46   85.59  376.16   86.54  376.08   87.13     376
   96.16     374  106.12     372  115.26     370  135.49  369.25  142.97   369.5
  155.72     370  160.13  369.38  160.65  369.34  161.19  369.38  161.22  369.44
  161.24  368.96  165.72  368.71  205.57  368.19  226.91  367.45  227.84  367.41
  239.06  361.76  241.96   361.6  245.76  361.52  251.97  367.85  256.98  368.15
  272.47  369.07  292.37  370.16  313.15  370.81  318.99   371.3  321.33   371.4
  339.22  371.96  340.43     372  349.15  373.24   355.3     374  368.27  375.86
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        227.84  251.97             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
```

inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

E.G. US. (ft)	366.08	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	365.76	E.G. Elev (ft)	366.02	365.88
Q Total (cfs)	164.00	W.S. Elev (ft)	365.67	365.72
Q Bridge (cfs)	164.00	Crit W.S. (ft)	364.82	363.87
Q Weir (cfs)		Max Chl Dpth (ft)	3.51	4.20
Weir Sta Lft (ft)		Vel Total (ft/s)	4.74	3.28
Weir Sta Rgt (ft)		Flow Area (sq ft)	34.62	49.92
Weir Submerg		Froude # Chl	0.45	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	70.88	104.68
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.20	2.97
Min El Prs (ft)	368.93	W.P. Total (ft)	17.94	20.62
Delta EG (ft)	0.24	Conv. Total (cfs)	1993.7	3343.6
Delta WS (ft)	0.08	Top Width (ft)	15.71	16.81
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	4.74	C & E Loss (ft)	0.09	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.82	0.36
BR Sel Method	Energy only	Power Total (lb/ft s)	3.86	1.19

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	367.16	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	366.78	E.G. Elev (ft)	367.10	366.96
Q Total (cfs)	267.00	W.S. Elev (ft)	366.68	366.72
Q Bridge (cfs)	267.00	Crit W.S. (ft)	365.53	364.56
Q Weir (cfs)		Max Chl Dpth (ft)	4.52	5.20
Weir Sta Lft (ft)		Vel Total (ft/s)	5.18	3.94
Weir Sta Rgt (ft)		Flow Area (sq ft)	51.51	67.78
Weir Submerg		Froude # Chl	0.43	0.30
Weir Max Depth (ft)		Specif Force (cu ft)	132.92	179.47
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.89	3.61
Min El Prs (ft)	368.93	W.P. Total (ft)	21.32	23.86
Delta EG (ft)	0.25	Conv. Total (cfs)	3445.9	5051.1
Delta WS (ft)	0.09	Top Width (ft)	17.85	18.80
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.05	0.04
BR Open Vel (ft/s)	5.18	C & E Loss (ft)	0.09	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.91	0.50
BR Sel Method	Energy only	Power Total (lb/ft s)	4.69	1.95

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	371.32	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	371.22	E.G. Elev (ft)	371.29	371.27
Q Total (cfs)	626.00	W.S. Elev (ft)	371.23	371.22
Q Bridge (cfs)	249.06	Crit W.S. (ft)	367.22	366.31
Q Weir (cfs)		Max Chl Dpth (ft)	9.07	9.70
Weir Sta Lft (ft)		Vel Total (ft/s)	1.66	1.53
Weir Sta Rgt (ft)		Flow Area (sq ft)	377.55	408.17
Weir Submerg		Froude # Chl	0.11	0.10
Weir Max Depth (ft)		Specif Force (cu ft)	799.81	940.80
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.24	2.36
Min El Prs (ft)	368.93	W.P. Total (ft)	217.13	227.44
Delta EG (ft)	0.07	Conv. Total (cfs)	14040.8	16081.0
Delta WS (ft)	0.05	Top Width (ft)	220.89	172.89
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.01
BR Open Vel (ft/s)	2.61	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.22	0.17

BR Sel Method	Energy only	Power Total (lb/ft s)	0.36	0.26

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.61	Element		
W.S. US. (ft)	372.46	E.G. Elev (ft)	372.56	372.54
Q Total (cfs)	1232.00	W.S. Elev (ft)	372.49	372.47
Q Bridge (cfs)	259.48	Crit W.S. (ft)	369.92	368.96
Q Weir (cfs)		Max Chl Dpth (ft)	10.33	10.95
Weir Sta Lft (ft)		Vel Total (ft/s)	2.02	1.90
Weir Sta Rgt (ft)		Flow Area (sq ft)	609.33	647.29
Weir Submerg		Froude # Chl	0.12	0.12
Weir Max Depth (ft)		Specif Force (cu ft)	1460.92	1641.84
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.07	3.16
Min El Prs (ft)	368.93	W.P. Total (ft)	246.96	261.75
Delta EG (ft)	0.11	Conv. Total (cfs)	26652.9	29099.6
Delta WS (ft)	0.10	Top Width (ft)	250.55	204.52
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.02
BR Open Vel (ft/s)	2.72	C & E Loss (ft)	0.00	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.33	0.28
BR Sel Method	Energy only	Power Total (lb/ft s)	0.67	0.53

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.08	Element		
W.S. US. (ft)	372.89	E.G. Elev (ft)	373.02	372.99
Q Total (cfs)	1577.00	W.S. Elev (ft)	372.93	372.90
Q Bridge (cfs)	272.68	Crit W.S. (ft)	370.58	370.31
Q Weir (cfs)		Max Chl Dpth (ft)	10.77	11.38
Weir Sta Lft (ft)		Vel Total (ft/s)	2.26	2.14
Weir Sta Rgt (ft)		Flow Area (sq ft)	697.56	737.50
Weir Submerg		Froude # Chl	0.13	0.12
Weir Max Depth (ft)		Specif Force (cu ft)	1781.29	1976.53
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.41	3.52
Min El Prs (ft)	368.93	W.P. Total (ft)	253.22	267.92
Delta EG (ft)	0.14	Conv. Total (cfs)	32319.7	34903.6
Delta WS (ft)	0.13	Top Width (ft)	256.75	209.75
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.03	0.02
BR Open Vel (ft/s)	2.85	C & E Loss (ft)	0.00	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.41	0.35
BR Sel Method	Energy only	Power Total (lb/ft s)	0.93	0.75

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #7-30-2016

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.25	Element		
W.S. US. (ft)	373.01	E.G. Elev (ft)	373.25	373.21
Q Total (cfs)	1843.00	W.S. Elev (ft)	373.01	373.00
Q Bridge (cfs)	304.39	Crit W.S. (ft)	370.82	370.55
Q Weir (cfs)	1538.61	Max Chl Dpth (ft)	10.85	11.48
Weir Sta Lft (ft)	122.48	Vel Total (ft/s)	2.41	2.27
Weir Sta Rgt (ft)	384.09	Flow Area (sq ft)	764.12	810.55
Weir Submerg	0.98	Froude # Chl	0.15	0.14
Weir Max Depth (ft)	5.38	Specif Force (cu ft)	1879.06	2086.69
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.72	3.84
Min El Prs (ft)	368.93	W.P. Total (ft)	254.42	269.32
Delta EG (ft)	0.03	Conv. Total (cfs)		
Delta WS (ft)	0.01	Top Width (ft)	257.94	210.93
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	3.19	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5474

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87
27.6	377.66	28.15	377.66	32.08	377.85	34.11	377.81	34.84	377.86
36.16	377.76	36.5	377.71	36.95	377.6	37.24	377.63	37.53	377.55
43.71	377.04	44.96	377.01	53.85	377.19	61.96	376.88	69.36	376.67
78.2	376.53	80.32	376.46	85.59	376.16	86.54	376.08	87.13	376
96.16	374	106.12	372	115.26	370	135.49	369.25	142.97	369.5
155.72	370	160.13	369.38	160.65	369.34	161.19	369.38	161.22	369.44
161.24	368.96	165.72	368.71	205.57	368.19	226.91	367.45	227.84	367.41
239.06	361.76	241.96	361.6	245.76	361.52	251.97	367.85	256.98	368.15
272.47	369.07	292.37	370.16	313.15	370.81	318.99	371.3	321.33	371.4
339.22	371.96	340.43	372	349.15	373.24	355.3	374	368.27	375.86
369.44	376	372.93	376.21	375.85	376.35	378.58	376.44	379.95	376.57
383.94	376.7	387.23	377.09	388.78	377.16	390.64	377.28	394.93	378
401.34	379.4	405.24	380.21	406.53	380.45	414	382	419.84	383.75
427.66	386.31								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	227.84	.04	251.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
227.84	251.97	54.4	54.86	54.94	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	224.3	367.75	F
255.8	292.3	368.13	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev

```
       0    29.9     385   170.3   205.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5419

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.86    3.78  380.71    4.98  380.68    6.09  380.65   17.15  380.11
   18.16     380   18.96  379.91   19.28  379.88   19.92  379.82   26.66  379.12
   33.04  378.58   34.43  378.44   39.87     378   40.43  377.97    45.3  377.68
   47.96  377.57   55.03  377.19   58.61  377.04   63.94  376.76   68.35  376.51
   75.42  376.11   77.27     376   79.39   375.6   88.74     374   95.93  372.25
  103.06  370.55  105.38     370  106.52  369.95   124.3  369.13  143.21  368.92
  147.73  368.65  154.71  368.29  193.74  367.43  212.87  367.11  212.89  367.11
   213.8   367.1  221.32  362.36  228.08  361.46  230.72  362.15  234.51  367.15
  243.11  367.53  243.13  367.53  255.89   368.1  273.39  369.09  289.93  371.07
  313.65  371.93  314.49  371.98   314.7     372  316.49  372.27  319.14  372.61
  322.78  373.12  328.35  373.78  330.34  374.01  330.63  374.04  333.66   374.3
   334.1  374.33  334.72  374.39  338.27  374.58  342.52   374.8  344.74  375.07
   346.7  375.32  347.32  375.37  350.65  375.82  350.83  375.84  351.12  375.87
  351.94     376  361.89     378  362.32  378.12   369.2     380   375.4     382
  381.54     384  387.14     386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   213.8     .04  234.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         213.8  234.51           93.04   95.36   97.65             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    25.8     385       F
   161.5   202.4     385       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5323

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.88   33.33  380.11   40.06     380   44.89   379.5      59     378
   67.02   377.3   71.41  376.93   82.12     376   85.17  375.72   86.89  375.57
  104.57     374  104.96  373.94  105.28  373.89  109.01  373.33  110.74  373.08
  113.95  372.58   116.4  372.26  118.47     372  119.44  371.89  121.49  371.67
  125.25  371.29  126.03  371.19  132.92     370   135.4  369.51  137.55  369.08
  143.39  368.87  152.17  368.34  189.23  365.45  207.94  365.88  213.15     366
  215.76  361.32  219.54  361.54  222.99  361.95  225.61  363.08  227.85  363.55
  233.11  366.26     238  366.82  242.41  367.33  259.77  368.53  278.63  371.43
  280.36     372  318.89     376  320.12  376.01  321.57  376.05  349.64  377.86
  349.73  377.86   349.8  377.87  351.93     378  359.87  379.62  362.53     380
   367.1  381.08  369.42  381.61  370.97     382  374.97  382.95  379.47     384
  383.38   384.6  383.92  384.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  213.15     .04  233.11    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        213.15  233.11          116.69  114.31   111.9             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
       0    28.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5209

INPUT
```

Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.03	.15	378.03	1.95	378	2.36	377.96	6.29	377.85
16.45	377.5	32.34	376.94	33.33	376.83	33.48	376.82	33.68	376.79
33.96	376.77	34.79	376.69	35.57	376.61	36.06	376.58	36.71	376.52
37.31	376.46	37.67	376.43	38.36	376.39	38.61	376.37	39.48	376.31
42.48	376.17	42.92	376.13	45.71	376	45.73	376	49.13	375.52
50	375.39	51.69	375.13	54.05	374.76	55.37	374.56	56.81	374.32
58.6	374	58.66	374	59.06	373.96	84.53	372.91	98.55	372.35
98.82	372.33	99.63	372.28	103.93	372.02	104.29	372	104.3	372
106.14	371.66	116.08	370.04	116.42	370	139.5	368.78	180.51	365.75
201.11	365.1	209.66	364.83	212.88	361.1	216.14	361.11	219.68	361.44
225.21	365.18	231.24	365.5	231.26	365.5	242.79	366.12	270.5	369.12
274.64	369.12	323.97	372.18	340.57	374.96	340.58	375.25	340.59	375.28
344.72	375.7	345.37	375.76	347.71	376	348.59	376.15		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.66	.04	225.21	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.66	225.21	111.42	101.59	91.47	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
298.8	301.6	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	22.5	380	270.4	298.8	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5107

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.01	.24	376	7.07	375.83	9.07	375.73	10.81	375.67
14.62	375.53	15.38	375.51	17.77	375.4	18.91	375.37	34.75	374.53
41.77	374.45	50.79	374.46	55.85	374.46	57.09	374.44	66.02	374.11
71.3	374	75.88	373.97	100.91	373.67	129.38	373.15	147.16	372.84
170.03	372.61	172.25	372.56	172.92	372.55	178.44	372.44	185.81	372.3
200.51	372.07	201.43	371.98	201.7	371.98	202.67	371.92	215.72	371.52
224.6	371.21	235.57	370.77	237.04	370.74	250.15	370.35	252.81	370.32
253.08	370.31	263.87	370.17	266.55	370.18	267.52	370.19	268.58	370.13
278.39	370.23	284.41	370.28	291.18	370.38	294.8	370.34	311.68	370.28
315.54	370.35	315.75	370.35	322.33	370.22	323.94	370.21	332.11	370.09
355.05	371.1	364.88	371.1	382.36	369.28	393.14	367.95	393.15	367.95
397.41	367.43	406.55	360.36	409.03	359.92	412.88	360.59	414.63	362.95
416.03	363.17	422.1	365.13	424.57	365.29	439.58	366.25	464.4	370.03
475.81	370.03	507.28	370.74	534.67	372.32	549.02	374.66	549.03	374.92
549.05	374.92	551.62	375.01	559.75	376	561.38	376.32		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	397.41	.04	422.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.41	422.1	67.29	67.07	66.86	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
295.8	317.3	380	F
445.9	465.3	380	F
474.6	515.9	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
317.3	364.3	380	465.3	474.6	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5040

INPUT
Description:

Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78
60.84	374.76	65.24	374.68	66.8	374.67	69.29	374.63	82.36	374.74
84.96	374.72	94.2	374.58	98.84	374.02	99.09	374	100.29	373.97
104.65	373.88	105.56	373.85	106.59	373.78	109.92	373.71	111.01	373.7
130.98	373.7	135.97	373.62	165.62	372.83	166.72	372.81	174.13	372.86
190.11	373	193.32	373	195.48	372.98	206.16	372.44	206.59	372.42
208.47	372.4	218.24	372.4	219.79	372.28	225.13	372	226.38	371.95
226.58	371.93	245.52	371.43	256.75	371.11	261.14	370.99	264.15	370.9
269.51	370.76	283.05	370.32	296.66	370.06	300.29	370	307.5	369.97
310.36	369.98	336.01	370.03	366.23	369.58	397.63	368.96	412.55	368.2
412.96	367.93	415.6	366.107	424.49	359.97	427.96	359.23	429.97	359.61
432.2	361.31	434.59	361.8	443.41	365.9	443.42	365.91	448.7	368.36
463.33	369.65	490.22	370.98	518.26	372.76	527.06	373.76	535.03	374
548.23	375.55	551.99	376	559.22	376.93	568.7	378	584.52	379.08

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	415.6	.04	443.41	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

415.6	443.41	104.82	108.2	107.53	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	408.3	370.15	F
463.6	584.52	370.15	F

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 5000

INPUT
Description: Longview Drive
Distance from Upstream XS = 38
Deck/Roadway Width = 27
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 14

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
122	374		231	372		346.8	370.217	
363.6	369.987		384.5	369.89		390	370.049	
400.6	370.192		404.7	370.096		417.9	370.146	
433.4	370.53		456.1	371.384		479.9	372.4	
523.7	374		556.9	376				

Upstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78
60.84	374.76	65.24	374.68	66.8	374.67	69.29	374.63	82.36	374.74
84.96	374.72	94.2	374.58	98.84	374.02	99.09	374	100.29	373.97
104.65	373.88	105.56	373.85	106.59	373.78	109.92	373.71	111.01	373.7
130.98	373.7	135.97	373.62	165.62	372.83	166.72	372.81	174.13	372.86
190.11	373	193.32	373	195.48	372.98	206.16	372.44	206.59	372.42
208.47	372.4	218.24	372.4	219.79	372.28	225.13	372	226.38	371.95
226.58	371.93	245.52	371.43	256.75	371.11	261.14	370.99	264.15	370.9
269.51	370.76	283.05	370.32	296.66	370.06	300.29	370	307.5	369.97
310.36	369.98	336.01	370.03	366.23	369.58	397.63	368.96	412.55	368.2
412.96	367.93	415.6	366.107	424.49	359.97	427.96	359.23	429.97	359.61
432.2	361.31	434.59	361.8	443.41	365.9	443.42	365.91	448.7	368.36
463.33	369.65	490.22	370.98	518.26	372.76	527.06	373.76	535.03	374
548.23	375.55	551.99	376	559.22	376.93	568.7	378	584.52	379.08

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	415.6	.04	443.41	.075

Bank Sta: Left Right Coeff Contr. Expan.

415.6	443.41	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	408.3	370.15	F
463.6	584.52	370.15	F

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Downstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  375.75             124     374           270.8     372
   386.7 370.217           403.6 369.987           424.4  369.89
   429.9 370.049           440.5 370.192           444.4 370.096
   457.6 370.146           473.1  370.53           495.7 371.384
   519.5   372.4           561.3     374           594.1     376

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  381.34    1.15  381.36    5.15  381.18    6.14   381.2    7.86  381.16
   10.94  381.18   23.92     381   30.33  380.86   45.55  380.35   51.93  380.07
   65.77   379.6   68.46  379.68   70.71  379.61   75.04  379.33   80.36  379.11
  107.04  378.79  117.65  378.45  125.92     378  132.09  376.99  138.71     376
  142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
  164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
  181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
  210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
   248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
  296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
  405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
  444.02  363.09  449.76  359.84  461.09  359.04  468.33 363.925  475.48  368.75
  476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
  568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
  588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
  633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        442.94  468.33            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442  370.15       F
   476.1  633.02  370.15       F

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   68.79     .024     .024        0                  .5               1
Upstream   Elevation =  359.44
           Centerline Station =  425
Downstream Elevation =  359.83
           Centerline Station =  450

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   70.81     .024     .024        0                  .5               1
Upstream   Elevation =  359.39
           Centerline Station =  432
Downstream Elevation =  359.74
           Centerline Station =  457

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         81.42    Culv Full Len (ft)
  # Barrels                     1    Culv Vel US (ft/s)          4.65
  Q Barrel (cfs)             81.42    Culv Vel DS (ft/s)          6.61
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E.G. US. (ft)	363.13	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	362.70	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	362.24	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	361.97	Culv Exit Loss (ft)	0.40
Delta EG (ft)	0.88	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.73	Q Weir (cfs)	
E.G. IC (ft)	362.35	Weir Sta Lft (ft)	
E.G. OC (ft)	363.14	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.64	Weir Max Depth (ft)	
Culv WS Outlet (ft)	361.97	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.92	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	133.04	Culv Full Len (ft)	36.92
# Barrels	1	Culv Vel US (ft/s)	6.68
Q Barrel (cfs)	133.04	Culv Vel DS (ft/s)	7.20
E.G. US. (ft)	365.04	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	364.82	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	363.51	Culv Frctn Ls (ft)	0.34
W.S. DS (ft)	363.27	Culv Exit Loss (ft)	0.56
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.35
Delta WS (ft)	1.56	Q Weir (cfs)	
E.G. IC (ft)	363.67	Weir Sta Lft (ft)	
E.G. OC (ft)	365.02	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	
Culv WS Outlet (ft)	363.27	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.45	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	168.64	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	8.46
Q Barrel (cfs)	168.64	Culv Vel DS (ft/s)	8.46
E.G. US. (ft)	371.12	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	371.06	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	368.57	Culv Frctn Ls (ft)	1.01
W.S. DS (ft)	368.43	Culv Exit Loss (ft)	0.97
Delta EG (ft)	2.54	Culv Entr Loss (ft)	0.56
Delta WS (ft)	2.63	Q Weir (cfs)	288.80
E.G. IC (ft)	364.92	Weir Sta Lft (ft)	287.66
E.G. OC (ft)	371.10	Weir Sta Rgt (ft)	449.28
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	1.24
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	0.74
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	120.35
Culv Crt Depth (ft)	2.82	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	48.34	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.43
Q Barrel (cfs)	48.34	Culv Vel DS (ft/s)	2.43
E.G. US. (ft)	372.25	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.13	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.12	Culv Frctn Ls (ft)	0.08
W.S. DS (ft)	371.99	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.13	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.13	Q Weir (cfs)	1135.20
E.G. IC (ft)	361.50	Weir Sta Lft (ft)	220.53
E.G. OC (ft)	372.25	Weir Sta Rgt (ft)	476.18
Culvert Control	Outlet	Weir Submerg	0.84
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.35
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.39
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	355.52
Culv Crt Depth (ft)	1.37	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	36.32	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	1.82

Q Barrel (cfs)	36.32	Culv Vel DS (ft/s)	1.82
E.G. US. (ft)	372.61	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.44	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.53	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	372.36	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.07	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.07	Q Weir (cfs)	1504.27
E.G. IC (ft)	361.15	Weir Sta Lft (ft)	202.70
E.G. OC (ft)	372.61	Weir Sta Rgt (ft)	485.78
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.72
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.61
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	456.26
Culv Crt Depth (ft)	1.18	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	33.28	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	1.67
Q Barrel (cfs)	33.28	Culv Vel DS (ft/s)	1.67
E.G. US. (ft)	372.79	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.59	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.73	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	372.52	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.06	Culv Entr Loss (ft)	0.02
Delta WS (ft)	0.07	Q Weir (cfs)	1776.36
E.G. IC (ft)	361.06	Weir Sta Lft (ft)	198.73
E.G. OC (ft)	372.79	Weir Sta Rgt (ft)	491.28
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.93
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.76
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	514.09
Culv Crt Depth (ft)	1.12	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	82.58	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.69
Q Barrel (cfs)	82.58	Culv Vel DS (ft/s)	6.44
E.G. US. (ft)	363.13	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	362.70	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	362.24	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	361.97	Culv Exit Loss (ft)	0.37
Delta EG (ft)	0.88	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.73	Q Weir (cfs)	
E.G. IC (ft)	362.33	Weir Sta Lft (ft)	
E.G. OC (ft)	363.12	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.60	Weir Max Depth (ft)	
Culv WS Outlet (ft)	361.97	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.93	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	133.96	Culv Full Len (ft)	42.68
# Barrels	1	Culv Vel US (ft/s)	6.72
Q Barrel (cfs)	133.96	Culv Vel DS (ft/s)	7.11
E.G. US. (ft)	365.04	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	364.82	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	363.51	Culv Frctn Ls (ft)	0.39
W.S. DS (ft)	363.27	Culv Exit Loss (ft)	0.54
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.35
Delta WS (ft)	1.56	Q Weir (cfs)	
E.G. IC (ft)	363.65	Weir Sta Lft (ft)	
E.G. OC (ft)	365.05	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	
Culv WS Outlet (ft)	363.27	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.46	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	168.56	Culv Full Len (ft)	70.81

# Barrels	1	Culv Vel US (ft/s)	8.46
Q Barrel (cfs)	168.56	Culv Vel DS (ft/s)	8.46
E.G. US. (ft)	371.12	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	371.06	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	368.57	Culv Frctn Ls (ft)	1.04
W.S. DS (ft)	368.43	Culv Exit Loss (ft)	0.97
Delta EG (ft)	2.54	Culv Entr Loss (ft)	0.56
Delta WS (ft)	2.63	Q Weir (cfs)	288.80
E.G. IC (ft)	364.87	Weir Sta Lft (ft)	287.66
E.G. OC (ft)	371.13	Weir Sta Rgt (ft)	449.28
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	1.24
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	0.74
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	120.35
Culv Crt Depth (ft)	2.82	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	48.46	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.43
Q Barrel (cfs)	48.46	Culv Vel DS (ft/s)	2.43
E.G. US. (ft)	372.25	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.13	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.12	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	371.99	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.13	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.13	Q Weir (cfs)	1135.20
E.G. IC (ft)	361.45	Weir Sta Lft (ft)	220.53
E.G. OC (ft)	372.25	Weir Sta Rgt (ft)	476.18
Culvert Control	Outlet	Weir Submerg	0.84
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.35
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.39
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	355.52
Culv Crt Depth (ft)	1.37	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	36.41	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	1.83
Q Barrel (cfs)	36.41	Culv Vel DS (ft/s)	1.83
E.G. US. (ft)	372.61	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.44	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.53	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	372.36	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.07	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.07	Q Weir (cfs)	1504.27
E.G. IC (ft)	361.10	Weir Sta Lft (ft)	202.70
E.G. OC (ft)	372.61	Weir Sta Rgt (ft)	485.78
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.72
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.61
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	456.26
Culv Crt Depth (ft)	1.18	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	33.36	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	1.67
Q Barrel (cfs)	33.36	Culv Vel DS (ft/s)	1.67
E.G. US. (ft)	372.79	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.59	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.73	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	372.52	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.06	Culv Entr Loss (ft)	0.02
Delta WS (ft)	0.07	Q Weir (cfs)	1776.36
E.G. IC (ft)	361.01	Weir Sta Lft (ft)	198.73
E.G. OC (ft)	372.80	Weir Sta Rgt (ft)	491.28
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.93
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.76
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	514.09
Culv Crt Depth (ft)	1.12	Min El Weir Flow (ft)	370.12

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4932

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.34	1.15	381.36	5.15	381.18	6.14	381.2	7.86	381.16
10.94	381.18	23.92	381	30.33	380.86	45.55	380.35	51.93	380.07
65.77	379.6	68.46	379.68	70.71	379.61	75.04	379.33	80.36	379.11
107.04	378.79	117.65	378.45	125.92	378	132.09	376.99	138.71	376
142.75	375.74	145.13	375.77	151.41	375.65	152.99	375.6	162.62	375.4
164.08	375.33	165.89	375.33	172.24	375.73	177.38	376	177.63	376.05
181.27	376.17	185.16	376.34	192.75	376.58	200.87	376.58	208.17	376.57
210.94	376.5	239.9	376	245.1	375.7	245.52	375.7	248.29	375.54
248.6	375.54	250.31	375.45	256.27	375.5	262.18	375.3	281.18	374
296.71	372.3	299.71	372	320.36	371.86	345.94	370.82	375.13	370.26
405.43	368.96	424.73	368.62	429.83	363.66	442.94	363.7	444	363.1
444.02	363.09	449.76	359.84	461.09	359.04	468.33	363.925	475.48	368.75
476.07	368.78	476.1	368.79	501.36	370.51	527.01	371.18	549.43	374
568.87	375.7	572.79	376	583.63	376.6	584.84	376.64	587.35	376.78
588.79	376.83	590.9	376.94	610.8	377.12	614.03	377.22	619.02	377.46
633.02	378.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	442.94	.04	468.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
442.94	468.33	86.54	87.15	87.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	442	370.15	F
476.1	633.02	370.15	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4845

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.58	4.55	380.55	6.68	380.49	9.66	380.28	16.63	379.98
26.33	379.81	62.1	378.84	98.92	378	99.32	377.89	136.94	376
143	375.91	149.44	376	152.28	376.1	156.17	376.13	191.4	376.8
203.32	376.79	209.98	376.63	238.93	376.59	244.45	376.21	250.81	376
261.25	374.62	275.77	372	281.64	371.31	290.21	370.67	304.89	369.51
331.41	367.13	348.83	364.14	380.45	364.27	402.65	363.64	402.68	363.64
406.34	363.53	414.27	358.13	417.64	357.81	425.27	358.61	432.32	365.43
433.19	365.53	433.22	365.53	453.71	367.76	474.07	367.76	485.62	368
502.49	370	503.75	370.14	505.06	370.4	505.48	370.53	507.56	370.13
509	370	513.04	370	518.39	370.19	521.7	370.19	524.91	370.37
537.92	371.65	541.22	371.89	542.32	372.1	545.8	372.19	575.74	373.74
577.08	373.86	599.27	377.01	605.31	377.77	608.04	378.01	611.15	378.12
614.15	378.14	616.12	378.1	621.88	378.21	625.35	378.34	639.16	379.09
657.61	380	661.97	380.57	669.23	381.67	678.71	383.47		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	406.34	.04	433.22	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.34	433.22	89.54	100.49	110.66	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336.4	363.2	385	F
550.5	618	385	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
127.8	235.6	385	296.1	336.4	385	454	504.5	385

CROSS SECTION

RIVER: Plumtree

REACH: Plumtree RS: 4745

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.11	21.9	380.04	28.76	379.88	34.3	379.51	43.1	379.86
53.28	379.9	56.58	379.78	62.04	379.32	72.76	379.37	82.93	379.28
86.47	379.41	92.14	379.33	95.69	379.17	109.62	379.08	135.12	378.66
137.45	378.48	167.42	378.8	171.95	378.72	192.21	378	200.65	377.24
235.54	377.01	241.83	376.74	253.23	377.1	255.58	376.97	271.08	376.62
275.97	376.65	279.99	377.08	282.06	377.08	293.56	376.33	300.79	376.13
316.78	375.92	330.78	375.45	339.87	375.04	353.65	374	362.03	373.25
376.22	371.8	398.14	369.91	398.19	368.67	441.73	364.73	471.43	362.82
491.34	362.87	497.92	361.09	497.93	361.09	503.16	359.68	507.05	359.79
508.57	357.67	513.05	357.45	516.27	357.67	524	363.35	528.02	363.37
528.05	363.37	543.42	363.45	576.59	363.78	580.38	364	587.66	364.1
599.83	364.36	607.95	364.42	639.8	366	660.86	367.5	675.48	368.86
685.51	370	701.05	372.18	718.22	373.29	725.55	373.48	731.12	374.02
748.44	374.98	752.53	375.3	765.7	375.87	778.37	376.85	791.24	378
806.37	380	808.13	380.31	815.79	381.16	824.93	382	831.66	382.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	491.34	.04	524	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
491.34	524	111.08	108.67	106.25	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4636

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.34	6.89	380.72	8.14	380.72	21.8	379.64	39.34	378
67.85	376	132.49	373.43	147.33	374	162.25	376	169.4	376.34
178.16	375.89	185.65	375.64	200.34	375.76	233.4	375.68	239.11	375.36
249.5	375.34	251.25	375.42	257.5	375.35	267.44	374.96	277.67	374.75
315.27	374.57	318.08	374.63	344.76	374	355.8	372	365.77	370
409.43	368	426.89	366.86	461.95	364.11	477.5	361.95	477.88	361.7
477.89	361.69	483.5	357.91	493.33	357.61	499.07	357.85	502.3	362.25
508.59	362.41	508.61	362.41	524.4	362.83	556.76	362.64	588.33	363.03
609.48	362.74	620.82	363.21	643.23	363.52	650.91	363.84	673.28	365.16
690.67	365.89	697.4	365.96	767.85	369.67	776.5	370	791.17	370.91
827.59	374	829.12	374.06	835.04	374	840.77	373.45	865.39	370
874.22	368	886.48	367.07	898.7	368	908.05	370	921.08	372
930.79	374	936.24	376	940.95	378	945.37	380	961.95	388
966.25	390	970.84	392	976.29	394	984.5	396		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	477.5	.04	502.3	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
477.5	502.3	90.09	85.72	81.01	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
829.12	930.96	374.06	T

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
12.5	47.6	385	159.7	233.5	385	289.2	333.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4550

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.61	5.72	380	14.44	379.53	24.98	379.26	49.94	378
51.11	377.81	52.48	377.77	57.27	377.13	65.46	377.09	83.13	376.44

```
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         487.5  517.99           205.67  206.54  206.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 4400

INPUT
Description: US 40
Distance from Upstream XS =      53
Deck/Roadway Width        =     104
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     5.8     380              83     378             165     376
     237     374             324     372             391 371.588
     429 371.157           463.7 370.927           490.9 370.876
   527.4 371.004           560.1 371.263           596.7  371.72
     644     372             732     374             786     376
     860     378             928     380             999     382

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         487.5  517.99             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

Downstream  Deck/Roadway Coordinates
```

```
    num=      11
      Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       13     378              97     376             158     374
    290.3 372.244             328  371.79           354.7 371.615
    387.1 371.555           419.8  371.62           453.4 371.896
    491.3 372.287             600     374

Downstream Bridge Cross Section Data
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.39     3.9  379.26    7.14  379.08    8.79  379.03   11.22  378.89
   14.53  378.78   17.41  378.61   25.86  378.28    32.7   378.1   37.64  377.91
   47.11  377.39    52.1  377.51   58.99  377.54   77.62  377.45   88.21  377.23
   92.02  377.21   95.64  377.34  113.55  377.38  122.03     377  137.03  376.62
  138.43  376.63   139.9  376.54  142.13  376.29  145.36     376  158.31  375.76
  187.11  374.72  198.02   374.5  200.77  374.48  208.31  374.54   212.2  374.51
   224.1     374  231.63  372.98   244.2   372.1  267.66  371.03  274.63  370.67
  284.57     370  294.75  364.77  310.72  364.84   317.5  367.36  326.34  364.31
  347.85  362.45  366.55  361.42  369.78  361.24  371.99  357.69   373.8  356.67
  379.51  351.69   381.6     352  394.25  354.75  396.69  357.39  399.49  360.42
  420.27  362.04  443.45   362.5  460.82  363.19  487.61     366  491.52  366.47
  492.41  366.52  501.31  366.41  508.11  366.82  510.99  366.89  511.84  366.96
  518.45  367.09  530.63  367.88  531.82     368  543.84     370  556.98     372
  567.14  372.99  573.69  373.54  580.03     374  596.09  374.78  599.01  375.01
   603.8  375.23  612.54     376  624.11  376.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  369.78     .04  399.49    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        369.78  399.49            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     369   361.7       F
     400  624.11   361.7       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                32   136.5     .013     .013        0                  .3               1
Upstream   Elevation =  357.575
           Centerline Station =  502.25
Downstream Elevation =  357.07
           Centerline Station =  382

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        164.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          8.70
  Q Barrel (cfs)            164.00    Culv Vel DS (ft/s)          8.93
  E.G. US. (ft)             361.46    Culv Inv El Up (ft)       357.58
  W.S. US. (ft)             361.38    Culv Inv El Dn (ft)       357.07
  E.G. DS (ft)              359.00    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              358.98    Culv Exit Loss (ft)         1.60
  Delta EG (ft)               2.46    Culv Entr Loss (ft)         0.35
  Delta WS (ft)               2.40    Q Weir (cfs)
  E.G. IC (ft)              361.34    Weir Sta Lft (ft)
  E.G. OC (ft)              361.46    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        359.93    Weir Max Depth (ft)
  Culv WS Outlet (ft)       359.37    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.30    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.36    Min El Weir Flow (ft)     371.57
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	267.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.24
Q Barrel (cfs)	267.00	Culv Vel DS (ft/s)	10.27
E.G. US. (ft)	362.95	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	362.87	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	359.79	Culv Frctn Ls (ft)	0.20
W.S. DS (ft)	359.74	Culv Exit Loss (ft)	2.17
Delta EG (ft)	3.16	Culv Entr Loss (ft)	0.49
Delta WS (ft)	3.13	Q Weir (cfs)	
E.G. IC (ft)	362.84	Weir Sta Lft (ft)	
E.G. OC (ft)	362.95	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	360.83	Weir Max Depth (ft)	
Culv WS Outlet (ft)	360.32	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.25	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.26	Min El Weir Flow (ft)	371.57

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
Warning: During the supercritical analysis, the program could not converge on a supercritical answer in the downstream cross
section. The program used the solution with the least error.
Note: During the supercritical analysis, the water surface at the inlet was within 0.01 feet of normal depth. Therefore,
the outlet will be at normal depth.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	626.00	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	15.65
Q Barrel (cfs)	626.00	Culv Vel DS (ft/s)	15.65
E.G. US. (ft)	368.46	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	368.42	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	361.62	Culv Frctn Ls (ft)	1.44
W.S. DS (ft)	361.46	Culv Exit Loss (ft)	4.26
Delta EG (ft)	6.84	Culv Entr Loss (ft)	1.14
Delta WS (ft)	6.96	Q Weir (cfs)	
E.G. IC (ft)	370.36	Weir Sta Lft (ft)	
E.G. OC (ft)	368.46	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	752.09	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.80
Q Barrel (cfs)	752.09	Culv Vel DS (ft/s)	18.80
E.G. US. (ft)	372.03	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.03	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	363.18	Culv Frctn Ls (ft)	2.08

W.S. DS (ft)	362.81	Culv Exit Loss (ft)	5.12
Delta EG (ft)	8.85	Culv Entr Loss (ft)	1.65
Delta WS (ft)	9.22	Q Weir (cfs)	479.91
E.G. IC (ft)	372.08	Weir Sta Lft (ft)	343.80
E.G. OC (ft)	372.03	Weir Sta Rgt (ft)	645.69
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.16
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.67
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	203.16
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	742.71	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.57
Q Barrel (cfs)	742.71	Culv Vel DS (ft/s)	18.57
E.G. US. (ft)	372.42	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.41	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	363.89	Culv Frctn Ls (ft)	2.03
W.S. DS (ft)	363.42	Culv Exit Loss (ft)	4.89
Delta EG (ft)	8.52	Culv Entr Loss (ft)	1.61
Delta WS (ft)	8.99	Q Weir (cfs)	834.29
E.G. IC (ft)	372.41	Weir Sta Lft (ft)	337.80
E.G. OC (ft)	372.42	Weir Sta Rgt (ft)	660.42
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.50
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.95
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	307.64
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	723.47	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.09
Q Barrel (cfs)	723.47	Culv Vel DS (ft/s)	18.09
E.G. US. (ft)	372.59	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.58	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	364.54	Culv Frctn Ls (ft)	1.93
W.S. DS (ft)	364.05	Culv Exit Loss (ft)	4.60
Delta EG (ft)	8.05	Culv Entr Loss (ft)	1.53
Delta WS (ft)	8.53	Q Weir (cfs)	1119.53
E.G. IC (ft)	372.62	Weir Sta Lft (ft)	333.77
E.G. OC (ft)	372.59	Weir Sta Rgt (ft)	670.30
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.72
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	1.13
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	381.66
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet

equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4344

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01
603.8	375.23	612.54	376	624.11	376.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	369.78	.04	399.49	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
369.78	399.49	54.24	54.2	54.21	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	369	361.7	F
400	624.11	361.7	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4289

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.16	4.18	376.93	6.02	376.92	13.94	376.67	20.26	376.2
24.9	376.18	33.24	377.06	38.69	377.12	40.04	377.22	48.07	377.42
60.83	377.6	66.6	377.54	72.7	377.21	85.85	376	95.14	375.32
109.02	374.79	111.75	374.73	114.36	374.6	120.7	374.51	138.66	374
141.06	373.73	149.42	372.56	154.25	372	161.5	371.27	163.79	371.11
170.81	370	173.81	369.84	195.17	369.42	204.6	369.46	213.04	369.62
222.3	370	223.43	370.15	226.4	370.41	227.06	370.31	236.85	369.39
247.27	369.56	249.28	369.5	253.56	369.2	259.27	368.95	271.49	368
281.02	366	283.53	365.58	284.63	365.72	287.61	365.54	294.16	364
296.04	363.42	300.15	363.15	323.16	361.6	346.64	361.49	362.78	361.62
366.58	358.56	372.42	353.86	381.79	352.78	389.78	353.42	392.45	357.73
395.52	357.99	397.76	358.89	397.77	358.9	401.82	360.54	427.65	361.5
461.12	362.68	474.19	364	499.06	364.89	510.36	365.54	512.25	365.53
519.79	366	531.35	367.23	537.87	368	549.98	370	574.53	371.66
580.97	371.69	592.69	371.17	604.52	371.32				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	362.78	.04	401.82	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
362.78	401.82	104.83	104.42	103.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4185

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.48	9.2	369.89	11.88	369.82	17.34	369.84	34.57	369.3
53.84	368.42	59.13	368.23	62.34	368.17	68.09	368.17	70.92	368.38
76.7	368.52	81.21	368.71	88.53	369.21	100.23	369.08	113.03	368.39
118.84	368.28	119.85	368.31	124.69	368.28	130.99	368.32	143.69	368.07
174.23	367.24	184.05	366.87	189.65	366.83	193.83	366.87	199.74	366.51
200.31	366.52	202.71	366.37	206.47	366	222.83	365.23	229.16	365.1
237.63	364.59	245.34	364	270.04	362.83	279.56	362.32	284.22	362
317.36	360.81	352.39	360.17	380.43	360.08	403.96	360.43	405.79	359.32
407.94	358.02	410.35	357.61	417	355.97	420.8	354.77	430.79	360.87
435.8	361.06	435.83	361.06	448.07	361.52	480.45	361.7	518.27	363.36
531.33	364	532.88	364.19	543.89	364.64	551.51	365.01	553.39	365.05
557.04	365.2	562.67	365.52	565.16	365.53	571.76	365.76	589.17	365.65
601.4	365.75	611.19	365.7	613.71	365.74	619.92	366	625.24	366.72
632.9	367.41	636.14	367.76	639.39	368	644.27	368.63	644.65	368.64
646.39	368.9	647.36	368.89	650.3	369.29				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	403.96	.04	430.79	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
403.96	430.79	151.73	151.97	152.24	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4033

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	371.31	6.28	371.09	10.1	370.82	11.41	370.78	13.41	370.65
16.07	370.59	24.34	370.14	26.91	370.09	30.53	370.19	38.94	370.2
41.71	370.32	43.77	370.21	45.82	370	47.56	369.91	61.47	368.93
64.73	368.91	74.46	369.43	84.71	369.4	87.19	369.59	93.43	369.89
94.09	369.89	96.1	370	98.42	370.2	102.15	370.38	104.17	370.4
106.65	370.37	110.1	370.2	112.15	370	115.71	369.82	128.08	369.81
137.68	369.7	151.03	369.46	154.18	369.16	164.93	368.77	175.08	368.49
185.11	368.1	190.59	367.77	192.4	367.74	209.8	366.53	222.55	365.72
229.81	365.17	231.09	365.15	237.47	365.25	254.65	364.85	274.84	362
281.46	361.45	311.04	360.26	324.61	359.69	324.63	359.69	327.57	359.56
332.63	355.53	339.8	355.05	344.88	355.72	350.28	359.03	354.96	359.02
354.99	359.02	368.82	358.97	388.87	359.13	402.39	358.88	463.03	360
463.46	360.12	468.3	360.75	482.77	362	495.13	362.44	501.53	362.51
509.75	362.5	519.32	362.16	523.42	362.13	524.98	362	532.66	361.82
536.09	361.79	548.11	361.82	551.96	362	557.9	362.44	583.12	363.9
596.37	364.95								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	327.57	.04	350.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
327.57	350.28	105.3	103.27	101.24	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3930

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	373.25	5.62	373.04	18.75	372.65	20.05	372.56	51.89	373.28
67.22	372.62	75.52	372.21	81.21	372	82.89	371.8	83.35	371.81
100.65	370.82	104.09	370.51	109.16	370	119.9	369.24	121.3	369.19
125.83	369.28	143.55	369.25	145.3	369.37	145.92	369.31	149.12	369.58
149.56	369.54	151.28	369.67	155.23	369.78	159.52	369.77	162.64	369.66
165.16	369.5	170.48	369	173.88	368.53	174.87	368.43	177.64	368
179.57	367.59	182.98	366.78	185.85	366	189.84	365.01	193.24	364
205.26	362.99	232.35	361.15	264.16	359.45	274.41	358.31	274.42	358.31

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  280.37  357.65  286.95  354.74  289.44  354.49  294.11  355.34  299.09  358.68
  305.18  358.74  305.19  358.74  321.51  358.88  353.18  358.92  436.87     360
  449.41     362  451.92  362.47  457.66  363.46  461.04     364  466.97  364.48
  469.66  364.48   474.3  364.61  476.21  364.58  476.86  364.61  477.78  364.59
  488.71  364.64  490.27  364.68  512.72  365.88  514.21     366  532.64     368
  542.86     370  544.26  370.23   546.1  370.43  549.88  370.48  552.59  370.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  280.37     .04  299.09    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.37  299.09          112.01  113.72  114.59             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
     176   200.4     375       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   163.1     176     375

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3816

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  374.86    10.9     374   35.12     372   42.05  371.48   47.58  371.12
   58.88  370.34   59.53  370.34   78.46   370.9   81.56  371.04   85.42  370.91
    91.5   370.8   96.65  370.74   108.4  370.09  110.41     370  112.14   369.8
  112.78  369.76   116.9  369.37  121.06     369  125.02   368.8  128.66  368.54
  132.43   368.4  135.47  368.11  138.27  368.07  140.86  368.14   143.7  368.03
  150.81   367.6   154.5  367.24  157.37  366.85  163.04     366  174.59  362.82
  217.65  358.92   236.4  357.65  236.42  357.65  237.46  357.58  243.76  354.29
   251.5   353.5  252.56  353.49   255.1  356.69   266.5  357.28  266.52  357.28
  271.38  357.54  301.23  358.52  327.76  358.95  350.57     360  371.84  361.19
  386.87     362  399.91  363.11  404.12  363.54  410.91  364.18  416.03  364.61
  421.73     365  428.74  365.37  429.75  365.39  438.84  365.39  440.51  365.38
  443.31   365.3  444.17  365.29  449.76  365.05  455.01  364.86  460.03   365.2
  465.28  365.49   469.1  365.73  472.03  365.86  472.64  365.86  474.82  366.04
  496.26   366.8  498.97  366.85  515.31  366.69  518.73   366.8  522.16  366.85
  525.33  367.02  526.96  367.04   534.8  367.32  549.03     368  554.32  368.52

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  237.46     .04   255.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        237.46   255.1           128.5  127.87  127.21             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   173.5   186.9     375       F
   373.3   445.4     375       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   142.2   173.5     375

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3688

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.19   12.07  367.61   20.74  367.88   33.44   368.3   35.81  368.34
   36.91  368.35   38.51   368.3    41.9  368.05   42.34     368   46.49  367.62
   57.82  366.07   58.06     366   58.98  365.89   59.73  365.86   61.35  365.74
   62.76  365.59   63.36  365.54   64.65  365.39   65.31  365.33   65.53   365.3
   68.14  364.99   69.06  364.94   77.78  365.17   78.29  365.12   78.87  365.13
   79.51  365.14   81.34  364.92   81.98  364.92   82.64  364.91   84.22  364.72
   85.27  364.68   87.32  364.44   87.96   364.4   91.82     364   92.71  363.94
   94.56   363.8  107.05  361.62  112.03  361.62  156.44  357.41  156.46  357.41
  166.74  356.43  170.56  353.16  171.46  352.86  179.43  353.24  182.46  356.86
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  186.46     357  186.47  357.01  203.22  357.63   227.7   358.5  256.67     360
  261.88  360.34  264.57  360.54  271.14  360.98  283.16  361.89  284.48     362
  293.32  363.31  295.65   363.6  300.63  364.22  302.93  364.48  304.51  364.65
  310.25  365.25  317.77  366.05  320.57  366.39   321.8  366.52  324.49  366.86
  328.15  367.23  329.94  367.46  331.84  367.65  332.96  367.78  334.64     368
  343.14  368.38  353.94  368.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  166.74     .04  182.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        166.74  182.46          137.67  137.99   138.3             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    72.5   108.3     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   309.8   338.6     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3550

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.59   21.83     366   22.15  365.93   22.36  365.91   22.65  365.88
   24.81  365.75   34.15  365.49   36.08  365.41   36.47  365.41   56.33  364.39
   62.74  364.35   64.54  364.35   78.24  364.86   78.82  364.87   80.11   364.9
   92.13  365.45   95.39  365.49   97.19  365.52   98.79  365.54  111.29  364.66
  113.06  364.51  113.63  364.52  115.75  364.34  116.17  364.34  118.14  364.18
  118.26  364.18  120.55     364  125.47  363.66  128.06  363.49  130.87  363.32
  133.62  363.17  137.86  362.93  141.25  362.78  142.84  362.67  144.42  362.54
  144.88  362.52  147.11   362.3   147.6  362.27  150.07     362  168.07  360.18
  202.08  358.28  222.67  356.22  222.69  356.22  229.29  355.55  231.57  353.11
  237.67  352.85  241.52  353.14  245.66  357.02   252.8  357.45  270.01   358.5
  299.86  361.08  320.94  363.87  322.12  363.98  326.43  364.47  335.31     366
  338.09  366.52  340.43  367.05  344.77     368  352.58  368.68  357.63  369.11
  363.94  369.54  366.26  369.71  370.89     370  376.06  370.55  378.66  370.84
  385.91   371.5  387.76   371.7  391.56     372  393.08  372.13  393.26  372.12
  394.51   372.2  396.42  372.27  400.73  372.39  401.46  372.38

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  222.67     .04  245.66    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        222.67  245.66          121.58  121.96  122.09             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     132   172.9     370       F
   358.4  401.46     375       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3428

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.25     .08  366.25     .21  366.24    2.49  366.31    5.55  366.33
     6.5  366.31    6.69   366.3    6.85  366.29    6.95  366.28    7.02  366.27
    7.07  366.26    7.09  366.26    7.37  366.14     7.5  366.11    7.73  366.11
    7.81     366   17.71  365.88   17.76  365.88   35.41  362.54   54.26  359.25
   71.12  356.77   71.14  356.77   72.75  356.53   82.67  355.38    85.4  352.15
   86.22  352.06   88.74  351.86   91.45  352.09   93.89  352.39   98.94  357.17
  101.38  357.43  121.79  359.59   156.9  362.39  164.18  363.89  164.43  364.14
  168.22  363.93  172.23  363.84   172.9  363.86     176  363.96   177.1     364
  178.13   364.1  190.23  365.12  198.83  365.85  199.59  365.91  200.67     366
   208.9  367.19  214.54     368  221.01  368.41  227.99  368.94  228.59  368.95
  229.18  368.96  244.28  369.43
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	82.67	.04	98.94	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

82.67	98.94	131.85	132.32	132.95	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
31.2	57.1	370	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
7.4	31.2	370	207.8	224.4	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3296

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.04	7.44	368.25	8.57	368.2	13.73	368	15.86	367.86
16.24	367.82	20.57	367.48	24.23	367.01	30.3	366.41	32.66	366
34.91	365.82	36.33	365.68	37.74	365.56	39.57	365.37	40.92	365.29
43.15	365.29	43.9	365.26	57.19	365.22	65.98	364.57	67.12	364.52
74.19	364	78.97	363.56	80.16	363.45	86.96	362.83	90.65	362.47
94.56	362.11	95.89	362	97.9	362.2	98.84	362.19	107.93	362.58
109.64	362.69	113.85	362.82	117.37	362.83	135.78	361.77	153.23	361.58
168.24	361.26	168.8	361.63	178.91	362.18	192.98	358.61	195.06	357.92
201.72	355.69	204.53	352.08	205.68	351.83	208.07	351.91	210.45	351.72
213.06	352.1	214.14	351.94	214.68	352.11	218.9	356.65	223.16	358.34
225.56	358.53	225.57	358.53	241.1	359.76	252.96	359.64	253.63	359.34
274.2	360.14	298.22	360.84	338.52	362	345.28	362.49	349.83	362.8
358.24	363.42	360.55	363.61	366.27	364	376.16	364.76	381.02	365.1
384.43	365.36	386.5	365.49	387.73	365.58	388.62	365.62	390.74	365.78
391.33	365.8	393.98	366	397.53	366.12	401.29	366.23		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	195.06	.04	223.16	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

195.06	223.16	117.57	116.94	115.99	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3179

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.99	2.92	366.32	4.49	366	7.03	365.74	10.65	365.61
11.25	365.55	16.84	365.58	20.65	365.55	33.69	365.26	37.05	365.27
37.83	365.19	39.74	365.22	40.57	365.13	41.71	365.14	42.29	365.07
42.83	365.07	44.3	364.91	44.81	364.89	52.54	364.19	59.05	363.73
59.96	363.72	64.43	364	81.81	364.24	90.25	364.43	92.01	364.4
99.97	364	104.37	363.32	108.33	362.78	110.63	362.49	114.3	362.12
115.81	362	120.17	361.84	122.87	361.79	123.54	361.75	128	361.77
128.34	361.74	133.43	361.84	133.74	361.82	143.14	361.87	149.1	361.65
164.07	359.25	179.76	356.13	194.67	355.75	202.4	355.27	206.08	354.62
206.1	354.62	214.08	353.21	222.22	351.72	224.4	350.87	225.57	350.64
226.07	350.5	226.87	350.39	227.28	351.49	228.52	356.98	237.22	357.51
237.24	357.52	245.5	358.02	261.13	358.56	278.43	358.68	287.56	359.19
290.34	359.37	293.7	359.56	297.36	359.67	300.98	359.87	307.03	360
313.84	360.92	321.07	362	329.79	363.01	342	364.37	355.84	366
363.77	366.33	385.35	367.64	391.11	368.04	397.46	368.33		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	179.76	.04	228.52	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

179.76	228.52	101.1	102.24	103.14	.1	.3

Ineffective Flow num= 3

```
   Sta L   Sta R    Elev  Permanent
       0    63.2     370       F
    80.2      98     370       F
   277.5   332.8     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      98     149     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3077

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.18    1.12  364.15    2.53  364.12    3.97   364.1    8.56   364.2
    8.98   364.2   10.31  364.25   11.19  364.24   13.14  364.15    13.5  364.12
   14.57     364   18.43  363.88   21.38  363.78   24.61  363.74   33.92  363.48
   39.77  363.33   48.31  362.93   50.98  362.82   61.21  362.37   63.02  362.31
    70.2     362   74.59   361.6    77.1  361.43   82.58  360.97   83.28  360.94
   95.42  360.41   99.21  360.31  103.01  360.23  103.64  360.21  104.52  360.13
  105.54     360  107.69  359.58  114.03     358  134.95   356.4  140.36     356
  163.01  355.01  179.63  355.11  193.39  354.95  204.81  355.12  210.64  354.59
  210.65  354.59     217  354.02  219.69  351.67  221.67  350.95  222.49  350.87
   223.8  350.87  226.26  350.75  228.21  350.72  229.11  350.89  230.73  354.07
  234.33  355.41   241.4  355.41  250.01  355.42  265.82  356.22  283.13  356.64
  290.94  357.97  293.37  357.99  293.48     358  295.67  358.42  300.65   359.3
   303.5  359.83  304.53     360  320.68  361.37  322.55  361.51  328.44     362
  330.19  362.24  341.42     364  344.14   364.6  349.88     366  354.73  367.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  204.81     .04  234.33    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        204.81  234.33            99.64   98.98   98.39             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2978

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  362.91   26.14   362.3   28.29  362.14    29.8   362.2   30.23  362.16
   30.97     362   35.23  361.59   35.47  361.59   37.04  361.43   37.26  361.43
    38.5   361.3   38.73  361.31   45.76  360.54   80.82  360.96  102.15  360.38
  114.55  360.01  118.88  359.77  161.71  358.87  229.91     358  230.71  357.16
  236.45  357.02  243.79  356.29  243.81  356.29  245.02  356.16  250.07  353.33
  252.35  352.96  254.47  350.89  255.74  350.56  257.29  350.63  259.41  350.68
   261.6  350.53  263.18  350.69  263.71  350.84  265.48  354.05  274.04   355.2
  274.05   355.2  275.87  355.44  297.22  357.18  316.25  361.84   320.6  362.22
  347.97  363.14  347.98  363.82  352.13     364  360.46   364.7  368.43  365.33
   374.4  365.77  378.19     366  379.71  366.15  380.66  366.19  383.79  366.08
  384.49  366.11  386.36     366  389.31  365.95  390.69     366  391.27  366.26
  391.59  366.47  398.39  367.21  402.86     368  410.75     370  415.21  370.52
  417.39  370.39  425.64  370.89  432.78     372  437.01  373.28  442.02  374.48
  446.02  375.38  448.25  375.83  449.28     376  451.72  376.13  455.64  376.24
   456.7  376.24  472.15  376.84  479.93  377.06  491.12  376.37

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  245.02     .04  274.04    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        245.02  274.04            61.85   60.74   60.21             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  141.71  359.42       F
  333.74   436.4  359.42       F
   436.4   487.3     370       F
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
```

```
    23.3    86.1     370   160.1   223.6     370     343     389     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2917

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.13    2.63  368.04    6.35  367.71    9.99  367.48    11.7  367.47
   35.48  366.41    37.6   366.2   47.35     366    53.1  365.63   55.49  365.67
   59.74  365.47   61.17  365.78   62.32   365.9   63.72  365.91   67.25  365.78
      68  365.82    71.7  365.74   87.56  365.03  104.39     364  110.05  363.87
  115.72     364  121.31  364.39  126.33  364.38  131.94  364.63  136.94  363.92
  168.89     362   189.9  361.76   192.5     362  193.52  362.01  197.76   361.7
  204.56  361.38  249.88  360.38  263.45  359.81  270.42  359.65  306.63   359.2
  346.56  358.69  357.45  358.68  370.03  358.66  382.52  358.63  395.46  358.28
  408.81  358.21  431.48  357.13  440.02  355.31  440.05  355.31  441.62  354.97
   449.4  353.04  452.07  350.76  453.48  350.54  456.39  350.36  460.31  350.51
  460.82  350.59  463.55  354.74  471.92  355.74  471.94  355.74  475.59  356.18
  490.04  357.59  503.18  359.84  518.18  361.77  535.05  361.94   560.7  363.42
  591.03  363.84  596.29     364  615.98  366.75  623.66  366.17  626.79  366.33
  628.12  366.32  630.23  366.52  637.46     368  644.61     370  649.83  370.84
  653.46  371.06  662.64  371.32  668.42     372  676.66  372.58  679.51  372.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  440.02     .04  471.92    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        440.02  471.92           89.63   90.26   89.98             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 2900

INPUT
Description: Frederick Road
Distance from Upstream XS =      32
Deck/Roadway Width        =      33
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   368.5              23     368              86     366
     146     364             200     362             259     360
   337.5 359.415           380.1 359.626           407.4 359.923
   427.3 360.169           456.8 360.827           563.7 363.651
     590     364             641     366          679.51     367

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.13    2.63  368.04    6.35  367.71    9.99  367.48    11.7  367.47
   35.48  366.41    37.6   366.2   47.35     366    53.1  365.63   55.49  365.67
   59.74  365.47   61.17  365.78   62.32   365.9   63.72  365.91   67.25  365.78
      68  365.82    71.7  365.74   87.56  365.03  104.39     364  110.05  363.87
  115.72     364  121.31  364.39  126.33  364.38  131.94  364.63  136.94  363.92
  168.89     362   189.9  361.76   192.5     362  193.52  362.01  197.76   361.7
  204.56  361.38  249.88  360.38  263.45  359.81  270.42  359.65  306.63   359.2
  346.56  358.69  357.45  358.68  370.03  358.66  382.52  358.63  395.46  358.28
  408.81  358.21  431.48  357.13  440.02  355.31  440.05  355.31  441.62  354.97
   449.4  353.04  452.07  350.76  453.48  350.54  456.39  350.36  460.31  350.51
  460.82  350.59  463.55  354.74  471.92  355.74  471.94  355.74  475.59  356.18
  490.04  357.59  503.18  359.84  518.18  361.77  535.05  361.94   560.7  363.42
  591.03  363.84  596.29     364  615.98  366.75  623.66  366.17  626.79  366.33
  628.12  366.32  630.23  366.52  637.46     368  644.61     370  649.83  370.84
  653.46  371.06  662.64  371.32  668.42     372  676.66  372.58  679.51  372.87

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  440.02     .04  471.92    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        440.02  471.92            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

Downstream  Deck/Roadway Coordinates
    num=      13
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0     368              60     366              120     364
     174     362             234     360            312.1 359.415
   354.5 359.626           382.1 359.923            401.6 360.169
   431.7 360.827           538.1 363.651              556     364
     615     366

Downstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   369.6    2.79  369.53    7.15  369.53   11.31  369.26   13.16  369.19
   29.03  369.08   30.88     369    36.7  368.66   39.93  368.57   49.72  368.38
   60.81     368    70.9  367.78   72.58  367.64    82.8  367.42   83.97  367.32
   85.38  367.24   87.77  367.18  103.95  366.38  107.73  366.28   112.2     366
   120.8  365.91  127.85  365.89  128.36  365.86  135.62  365.86  136.08  365.83
  142.61  365.76  143.72  365.66  148.33  365.55  150.36  365.39  156.37  365.12
  167.42  364.81  172.69  364.56  182.09  364.16  185.28     364  191.33   363.8
  196.54  363.59  198.83  363.62   204.7  363.42  205.45  363.36   212.4  363.01
  219.55  362.54  226.48     362  235.55  361.62  255.36     360  265.66  359.25
  278.67  358.18  280.71     358  313.84  356.42  337.03  355.63  363.87     355
  377.78   354.9  391.73  354.54   400.8  353.95  402.55  353.74  411.94  352.62
  421.34  350.08  422.54     352  426.28  353.73  432.62   354.3  432.64  354.31
  432.77  354.32  441.96   355.6  462.76  357.08  477.11  359.05  499.49  362.25
  513.76  363.04  527.63     362  539.48  362.57  551.98  362.82  561.27  363.13
  572.05  363.79   574.3     364  591.29  364.92   612.3  365.73  623.32  366.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   400.8     .04  432.64    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         400.8  432.64            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  395.05  356.75       F
   445.1  623.32  356.75       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch    8.25   12.78
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                20    56.5     .024     .024        0                  .5                1
Upstream   Elevation =  350.33
           Centerline Station =  456
Downstream Elevation =  350.16
           Centerline Station =  421

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        149.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          3.21
  Q Barrel (cfs)            149.00    Culv Vel DS (ft/s)          3.09
  E.G. US. (ft)             354.54    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             354.39    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              354.41    Culv Frctn Ls (ft)          0.00
```

W.S. DS (ft)	354.26	Culv Exit Loss (ft)	0.01
Delta EG (ft)	0.13	Culv Entr Loss (ft)	0.08
Delta WS (ft)	0.12	Q Weir (cfs)	
E.G. IC (ft)	353.10	Weir Sta Lft (ft)	
E.G. OC (ft)	354.54	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	354.30	Weir Max Depth (ft)	
Culv WS Outlet (ft)	354.26	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.64	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.96	Min El Weir Flow (ft)	359.43

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	228.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.16
Q Barrel (cfs)	228.00	Culv Vel DS (ft/s)	4.07
E.G. US. (ft)	355.42	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	355.24	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	355.11	Culv Frctn Ls (ft)	0.20
W.S. DS (ft)	354.96	Culv Exit Loss (ft)	0.11
Delta EG (ft)	0.31	Culv Entr Loss (ft)	0.13
Delta WS (ft)	0.28	Q Weir (cfs)	
E.G. IC (ft)	353.91	Weir Sta Lft (ft)	
E.G. OC (ft)	355.42	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	355.02	Weir Max Depth (ft)	
Culv WS Outlet (ft)	354.96	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.44	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.47	Min El Weir Flow (ft)	359.43

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	595.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.64
Q Barrel (cfs)	595.00	Culv Vel DS (ft/s)	8.80
E.G. US. (ft)	358.15	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	357.94	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	356.49	Culv Frctn Ls (ft)	0.44
W.S. DS (ft)	356.10	Culv Exit Loss (ft)	0.81
Delta EG (ft)	1.66	Culv Entr Loss (ft)	0.58
Delta WS (ft)	1.85	Q Weir (cfs)	
E.G. IC (ft)	357.19	Weir Sta Lft (ft)	
E.G. OC (ft)	358.15	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	356.41	Weir Max Depth (ft)	
Culv WS Outlet (ft)	356.10	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	4.23	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	871.24	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.80
Q Barrel (cfs)	871.24	Culv Vel DS (ft/s)	11.20
E.G. US. (ft)	360.56	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.39	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	357.66	Culv Frctn Ls (ft)	0.20
W.S. DS (ft)	357.27	Culv Exit Loss (ft)	1.56
Delta EG (ft)	2.90	Culv Entr Loss (ft)	0.91
Delta WS (ft)	3.12	Q Weir (cfs)	364.76
E.G. IC (ft)	360.49	Weir Sta Lft (ft)	242.11
E.G. OC (ft)	360.56	Weir Sta Rgt (ft)	445.39
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	357.85	Weir Max Depth (ft)	1.16
Culv WS Outlet (ft)	357.27	Weir Avg Depth (ft)	0.75
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	152.95
Culv Crt Depth (ft)	5.38	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	891.56	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.81
Q Barrel (cfs)	891.56	Culv Vel DS (ft/s)	11.01
E.G. US. (ft)	361.01	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.80	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.19	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	357.74	Culv Exit Loss (ft)	1.44
Delta EG (ft)	2.82	Culv Entr Loss (ft)	0.91
Delta WS (ft)	3.06	Q Weir (cfs)	714.44
E.G. IC (ft)	360.93	Weir Sta Lft (ft)	229.02
E.G. OC (ft)	361.01	Weir Sta Rgt (ft)	463.96
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.28	Weir Max Depth (ft)	1.60
Culv WS Outlet (ft)	357.74	Weir Avg Depth (ft)	1.07
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	250.33
Culv Crt Depth (ft)	5.47	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	892.91	Culv Full Len (ft)	27.29
# Barrels	1	Culv Vel US (ft/s)	10.67
Q Barrel (cfs)	892.91	Culv Vel DS (ft/s)	10.78
E.G. US. (ft)	361.40	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	361.15	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.69	Culv Frctn Ls (ft)	0.25
W.S. DS (ft)	358.20	Culv Exit Loss (ft)	1.32
Delta EG (ft)	2.72	Culv Entr Loss (ft)	0.88
Delta WS (ft)	2.95	Q Weir (cfs)	1105.09
E.G. IC (ft)	361.32	Weir Sta Lft (ft)	217.67
E.G. OC (ft)	361.40	Weir Sta Rgt (ft)	478.53
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.58	Weir Max Depth (ft)	1.99
Culv WS Outlet (ft)	358.20	Weir Avg Depth (ft)	1.33
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	345.70
Culv Crt Depth (ft)	5.48	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2827

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         400.8  432.64             59.3   67.61   75.81             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  395.05  356.75       F
   445.1  623.32  356.75       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2759

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  372.77    2.31  372.75    3.21  372.76    3.79   372.7    5.35  372.51
   10.05     372   17.86  370.67   21.54     370   22.94  369.68   29.73     368
   38.04     366   41.31  365.14   46.41     364   49.98  363.37   58.32     362
   62.31  361.29   70.12     360   83.48  358.75   88.76  358.48    93.5  358.22
   94.45  358.15   97.16     358  128.47  356.25  137.97     356  166.97  354.77
  188.46  354.27  206.85  354.18  213.44  353.14  217.92  353.75  217.94  353.75
  221.54  354.24  229.72  353.68  232.16  349.32  242.11  350.03  244.47  353.83
  247.97  353.92  254.64   354.1  273.96   354.9   288.2  354.55   327.4     356
  337.32  356.54  361.29  357.92   361.9     358  364.26  358.17  365.41  358.24
     367  358.37  372.78  358.74  375.31  358.81  388.46  358.79  394.15   358.8
  397.84  358.95  400.41  358.96  402.23  359.06  404.53  359.21  405.49  359.23
  408.57  359.48  408.95  359.49  411.45   359.7  411.87  359.72  415.03  359.99
  415.31     360  417.03   360.2  418.39   360.3   428.8  360.31  433.64   360.4
  438.69  360.56  442.82  360.73  450.11  361.09  466.87     362  474.25  362.98
  481.02     364  491.61     366   492.4  366.16  501.24     368

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  229.72     .04  244.47    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        229.72  244.47           166.79  169.71   170.1             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2589

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   370.5    6.39     370    8.12  369.55    9.88  369.06   13.59     368
   15.68  366.43   16.18     366    16.5  365.69   18.44     364   19.42     363
   20.51     362   21.74  361.02   22.67     360   27.21  358.55   28.42  358.17
   28.89     358    48.8     356   56.94  355.65   62.31  355.06    97.9  354.08
  104.04  353.91  106.64  349.71  112.07   349.9  114.29     352  118.86  352.08
  128.02  352.48  129.83  352.56   142.4  352.11  158.46  352.06  163.77  353.31
  176.98  353.81  195.26  354.09  212.76  355.32  219.91  355.94  220.06  355.97
  220.33     356  220.34     356  220.77  356.04  224.36   356.3   227.8  356.43
  228.59  356.43  235.01  356.02  235.26     356  235.49     356  244.56  356.04
   247.2  356.04  248.45  356.03  254.75  356.02   257.6  356.01   259.1     356
  259.88  356.04  262.22  356.13  262.67  356.15  272.42  356.42  274.41   356.5
  275.87  356.57  277.84  356.65  283.08   356.9  287.67   357.1  289.83   357.2
     291  357.25  295.04  357.45  305.68     358  327.61  359.52  335.25     360
  342.18  360.46  349.91  360.96  357.47  361.46  361.02  361.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  104.04     .04  114.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        104.04  114.29           102.11  104.17  106.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2485

INPUT
```

Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.38	4.47	368.19	8.54	368.03	9.3	368	11.37	367.71
12.69	367.6	12.97	367.59	21.49	367.83	21.72	367.79	24.75	367.98
24.78	367.97	25.94	368.02	27.18	368.02	28.49	367.97	29.82	367.87
30.25	367.77	31.68	367.58	33.56	367.26	35	366.85	38.23	366
38.64	365.88	39.08	365.73	41.93	364.86	44.58	364	51.26	362.13
51.81	362	52.07	361.95	53.08	361.71	59.58	360.24	60.5	360
66.26	358.56	68.19	358	79.86	356.07	80.2	356	108.17	354.1
116.73	353.3	136.32	353.03	148.67	352.95	152.4	351.89	153.8	351.49
156.31	351.59	159.04	352.43	164.74	351.94	168.76	349.2	174.15	349.34
176.14	352.31	183.78	352.86	185.84	353.01	202.53	353.09	228.12	353.77
242.58	354	243.08	354.08	268.03	355.47	271.1	355.65	276.88	356
279.61	356.42	290.09	358	293.7	358.35	295.16	358.52	296.99	358.71
299.04	359.06	299.15	359.06	301.56	358.95	310.74	358.55	311.53	358.57
326.08	360	343.08	362	362.94	363.92	363.84	364	373.86	364.98
379.95	365.59								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	164.74	.04	176.14	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
164.74	176.14	153.6	154.59	153.42	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2331

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.49	6.68	364.41	7.02	364.4	14.19	364.07	14.82	364.03
15.07	364	20.81	363.68	24.25	363.45	29.07	363.13	39.92	362.46
45.16	362.09	46.53	362	47.28	361.49	49.54	360	52.15	358.3
52.62	358	55.48	356.39	56.22	356	57.41	355.85	63.81	354.98
71.45	353.58	95.41	352.52	117.31	352.1	137.93	352.42	139.13	352.39
143.89	352.26	149.2	348.51	154.15	348.1	159.57	348.42	163.74	351.17
170.01	352.12	172.55	352.5	187.7	353.21	192.26	353.51	195.07	354
218.88	355.98	218.91	355.98	219.4	355.99	219.65	356	241.82	357.49
246.88	357.84	249.17	358	261.51	359.33	265.1	359.63	265.64	359.68
269.31	360	281.07	361.43	286.16	362	288.44	362.36	288.85	362.43
290.52	362.72	297.61	364	300.67	364.91	304.17	366	307.87	366.43
309	366.5	310.22	366.57	314.29	366.95	316.04	367.1	316.75	367.15
319.13	367.28								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	143.89	.04	163.74	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
143.89	163.74	179.37	177.6	175.87	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2153

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.32	3.92	364.56	4.01	364.56	8.3	364.3	12.46	364.04
12.76	364.02	13.08	364	13.25	363.87	13.45	363.73	16.05	362
16.68	361.53	18.91	360	20.77	358.61	21.6	358	21.89	357.75
24.09	356	30.84	354.47	33.11	354	52.92	352.32	74.07	351.81
101.65	351.28	120.22	351.43	120.23	351.43	120.5	351.43	127.63	349.88
130.12	350.05	131.34	346.86	142	346.39	144.29	352.45	150.56	352.61
153.23	352.68	168.08	353.97	172.88	354.8	182.71	356	183.66	356.09
183.87	356.11	184.85	356.22	185.07	356.24	187.04	356.46	193.55	357.16
200.75	358	212.41	359.89	213.06	360	217.64	360.89	223.61	362
228.58	363.12	232.74	364	234.97	364.51	241.92	366	244.79	366.58
251.21	368	256.5	369.43	258.4	370	259.7	370.42	264.45	372
269.94	372.39	273.44	372.63						

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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  130.12     .04  144.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.12  144.29           160.15  158.75  157.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1994

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.16    1.03  359.27    6.73  358.67   10.37  358.29   12.97     358
   17.14  356.63      19     356   24.53  354.42   26.07     354   48.12   352.4
   57.17  351.28   75.62  351.28   92.39  351.14  101.12   350.8  106.95  350.57
  106.96  350.57  116.46  350.19   118.2  346.45  127.95  346.81  131.85  351.13
  136.96  351.29  150.75  351.72  165.28  352.31  177.37  352.98  196.01     354
  199.93  354.72  201.85  354.82  202.83  354.87  204.78  354.98  212.96  355.47
  214.68   355.8  216.21  355.53  218.47   355.7  222.42     356  236.41  357.33
  243.08     358  253.87   359.4  258.55     360  260.61  360.31  272.91     362
  275.22  362.56  277.16  363.07  277.31  363.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  116.46     .04  131.85    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        116.46  131.85           108.1  106.05  103.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1888

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354    68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        129.91  142.97            61.13   58.24    54.2             .3       .5

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 1850

INPUT
Description: Private Bridge
Distance from Upstream XS =    18.5
Deck/Roadway Width        =      16
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       8
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    3.66  359.97            81.5  359.87  357.87   101.7 360.452 358.452
   126.6 360.865 358.865     153 360.835 358.835   175.1 360.491 358.491
     201 360.491 358.491  320.31   359.1
```

Upstream Bridge Cross Section Data
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.32	3.66	359.97	3.97	359.97	9.29	359.12	9.61	359.1
10.06	359.05	11.3	358.9	12.39	358.76	16.42	358	26.85	356.12
27.4	356	44.51	354.47	49.85	354	68.2	352.46	81.53	351.35
104.16	350.46	120.73	349.86	122.9	349.65	122.92	349.65	129.91	349
132.99	345.73	137.07	345.92	142.97	349.5	150.38	349.68	153.97	350.05
163.02	350.99	180.43	351.29	195.81	351.74	212.9	353.83	217.47	354.81
227.64	355.42	283.48	356	287.69	356.35	288.71	356.43	290.19	356.54
297.25	357.04	307.21	357.78	310.66	358	311.09	358.05	315.51	358.54
318.4	358.88	320.31	359.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	129.91	.04	142.97	.075

Bank Sta: Left	Right	Coeff Contr.	Expan.
129.91	142.97	.3	.5

Downstream Deck/Roadway Coordinates
num= 7

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	359.24		91.4	359.823	357.823	114.8	360.523	358.523
139.8	360.92	358.92	165	360.892	358.892	189.6	360.465	358.465
211.7	359.771	357.771						

Downstream Bridge Cross Section Data
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left	Right	Coeff Contr.	Expan.
131.1	149.09	.3	.5

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd = .8
Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	350.59	Element		
W.S. US. (ft)	350.34	E.G. Elev (ft)	350.52	350.40
Q Total (cfs)	194.00	W.S. Elev (ft)	350.24	350.28

Q Bridge (cfs)	194.00	Crit W.S. (ft)	348.85	348.91
Q Weir (cfs)		Max Chl Dpth (ft)	4.51	3.67
Weir Sta Lft (ft)		Vel Total (ft/s)	3.36	2.17
Weir Sta Rgt (ft)		Flow Area (sq ft)	57.76	89.58
Weir Submerg		Froude # Chl	0.43	0.25
Weir Max Depth (ft)		Specif Force (cu ft)	106.49	130.09
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.26	1.94
Min El Prs (ft)	358.87	W.P. Total (ft)	48.21	48.10
Delta EG (ft)	0.24	Conv. Total (cfs)	3211.9	4621.8
Delta WS (ft)	0.09	Top Width (ft)	45.71	46.13
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.36	C & E Loss (ft)	0.08	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.27	0.20
BR Sel Method	Energy only	Power Total (lb/ft s)	0.92	0.44

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	351.29	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	351.00	E.G. Elev (ft)	351.21	351.09
Q Total (cfs)	295.00	W.S. Elev (ft)	350.89	350.93
Q Bridge (cfs)	295.00	Crit W.S. (ft)	349.70	349.40
Q Weir (cfs)		Max Chl Dpth (ft)	5.16	4.32
Weir Sta Lft (ft)		Vel Total (ft/s)	3.11	2.33
Weir Sta Rgt (ft)		Flow Area (sq ft)	94.94	126.41
Weir Submerg		Froude # Chl	0.44	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	169.88	210.88
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.38	1.77
Min El Prs (ft)	358.87	W.P. Total (ft)	71.41	74.18
Delta EG (ft)	0.27	Conv. Total (cfs)	4862.5	6624.2
Delta WS (ft)	0.09	Top Width (ft)	68.87	71.27
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.11	C & E Loss (ft)	0.09	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.31	0.21
BR Sel Method	Energy only	Power Total (lb/ft s)	0.95	0.49

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	352.85	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	352.55	E.G. Elev (ft)	352.79	352.69
Q Total (cfs)	741.00	W.S. Elev (ft)	352.45	352.46
Q Bridge (cfs)	741.00	Crit W.S. (ft)	351.71	350.92
Q Weir (cfs)		Max Chl Dpth (ft)	6.72	5.85
Weir Sta Lft (ft)		Vel Total (ft/s)	2.86	2.58
Weir Sta Rgt (ft)		Flow Area (sq ft)	258.85	287.00
Weir Submerg		Froude # Chl	0.32	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	491.20	571.01
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	2.15	2.43
Min El Prs (ft)	358.87	W.P. Total (ft)	124.09	123.03
Delta EG (ft)	0.26	Conv. Total (cfs)	12672.8	15746.4
Delta WS (ft)	0.08	Top Width (ft)	120.34	118.06
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.86	C & E Loss (ft)	0.06	0.05
BR Sluice Coef		Shear Total (lb/sq ft)	0.45	0.32
BR Sel Method	Energy only	Power Total (lb/ft s)	1.27	0.83

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	354.15	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	353.80	E.G. Elev (ft)	354.07	353.98
Q Total (cfs)	1395.00	W.S. Elev (ft)	353.67	353.65
Q Bridge (cfs)	1395.00	Crit W.S. (ft)	352.64	352.13
Q Weir (cfs)		Max Chl Dpth (ft)	7.94	7.04
Weir Sta Lft (ft)		Vel Total (ft/s)	3.44	3.26
Weir Sta Rgt (ft)		Flow Area (sq ft)	405.74	427.57
Weir Submerg		Froude # Chl	0.32	0.31
Weir Max Depth (ft)		Specif Force (cu ft)	997.13	1098.38
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.38	3.62
Min El Prs (ft)	358.87	W.P. Total (ft)	126.54	125.41
Delta EG (ft)	0.29	Conv. Total (cfs)	22970.5	26502.1
Delta WS (ft)	0.13	Top Width (ft)	120.16	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	3.44	C & E Loss (ft)	0.03	0.07

BR Sluice Coef		Shear Total (lb/sq ft)	0.74	0.59
BR Sel Method	Energy only	Power Total (lb/ft s)	2.54	1.92

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	354.74	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.38	E.G. Elev (ft)	354.65	354.57
Q Total (cfs)	1765.00	W.S. Elev (ft)	354.21	354.18
Q Bridge (cfs)	1765.00	Crit W.S. (ft)	353.00	352.54
Q Weir (cfs)		Max Chl Dpth (ft)	8.48	7.57
Weir Sta Lft (ft)		Vel Total (ft/s)	3.76	3.61
Weir Sta Rgt (ft)		Flow Area (sq ft)	469.96	489.39
Weir Submerg		Froude # Chl	0.32	0.32
Weir Max Depth (ft)		Specif Force (cu ft)	1298.22	1406.78
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.91	4.15
Min El Prs (ft)	358.87	W.P. Total (ft)	127.61	126.46
Delta EG (ft)	0.32	Conv. Total (cfs)	28299.4	32018.7
Delta WS (ft)	0.18	Top Width (ft)	120.09	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.06
BR Open Vel (ft/s)	3.76	C & E Loss (ft)	0.03	0.09
BR Sluice Coef		Shear Total (lb/sq ft)	0.89	0.73
BR Sel Method	Energy only	Power Total (lb/ft s)	3.36	2.65

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	355.33	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.96	E.G. Elev (ft)	355.23	355.15
Q Total (cfs)	2157.00	W.S. Elev (ft)	354.74	354.70
Q Bridge (cfs)	2157.00	Crit W.S. (ft)	353.33	352.91
Q Weir (cfs)		Max Chl Dpth (ft)	9.01	8.09
Weir Sta Lft (ft)		Vel Total (ft/s)	4.04	3.91
Weir Sta Rgt (ft)		Flow Area (sq ft)	533.72	551.12
Weir Submerg		Froude # Chl	0.33	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	1639.89	1755.90
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	4.45	4.67
Min El Prs (ft)	358.87	W.P. Total (ft)	128.68	127.51
Delta EG (ft)	0.34	Conv. Total (cfs)	34036.2	37958.7
Delta WS (ft)	0.22	Top Width (ft)	120.01	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.06	0.06
BR Open Vel (ft/s)	4.04	C & E Loss (ft)	0.02	0.10
BR Sluice Coef		Shear Total (lb/sq ft)	1.04	0.87
BR Sel Method	Energy only	Power Total (lb/ft s)	4.20	3.41

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1830

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.1	149.09	183.1	189.46	194.94	.3	.5

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1641

INPUT

Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.1	4.25	358	4.42	357.95	4.44	357.94	5.13	357.91
5.87	357.89	19.69	357.39	35.1	356.79	40.55	356.56	48.51	356.22
50.1	356.16	53.65	356	83.2	353.06	108.43	350.69	126.88	349.28
127.65	348.68	128.6	347.92	138.1	348.36	140.07	345.19	146.51	345.53
151.14	349.6	158.59	349.89	158.6	349.89	162.23	350.02	178.14	350
203.35	350.65	232.7	352	242.28	353.59	244.74	354	245.26	354.15
247.65	354.81	250.51	355.6	252.04	356	253.98	356.59	258.69	358
258.77	358.02	262.44	359.03	266	360	266.2	360.05	268.14	360.44
269.28	360.66	271.48	361.07	272.68	361.28	273.3	361.39		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	138.1	.04	151.14	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.1	151.14	176.17	177.29	178.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1463

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	356.46	5.61	356.33	11.71	356.19	16.33	356.06	18.18	356.02
18.32	356.02	18.54	356	21.8	355.67	22.14	355.65	22.36	355.64
22.69	355.6	22.89	355.58	27.15	355.19	29.24	355.09	30.76	355.02
40.4	354.87	40.86	354.85	41.76	354.8	42.75	354.73	52.82	354
69.61	352.87	75.51	352.42	79.43	352.14	79.72	352.12	81.65	352
84.43	351.86	90.72	351.56	92.09	351.48	94.79	351.34	97.19	351.19
107.32	350.52	111.7	350.26	115.41	350	138.29	349.1	159.11	349.1
178.46	349.47	180.13	349.17	185.3	348.24	187.99	347.08	189.19	343.45
196.87	343.35	197.98	346.06	206.54	348.53	210.52	348.75	210.53	348.75
221.24	349.34	234.53	349.78	266.44	352.56	278.62	358	283.38	359.43
285.38	360	287	360.55	290.28	361.58	291.64	362	294.58	362.89
295.91	363.28	296.57	363.47	298.25	364	302.9	365.77	303.51	366
309.02	367.06	310.22	367.29	310.97	367.42	314.74	368	315.87	368.18
323.73	369.62								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	180.13	.04	206.54	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
180.13	206.54	172.51	172.28	171.74	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1291

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	363.49	2.9	363.09	10.68	362.14	11.86	362	19.26	360.55
22.08	360	26.38	358.97	30.59	358	34.4	357.21	38.91	356
43.26	354.82	46.23	354.17	47.03	354	49.14	353.62	58.14	352
66.85	350.97	70.1	350.58	71.43	350.42	75.07	350	108.53	348.38
120.68	348.74	128.48	348.81	133.87	347.09	136.5	346.81	137.71	345.2
141.95	344.89	151.53	345.15	155.49	348.28	157.84	348.3	161.16	349.47
178.09	349.55	199.34	350.93	214.63	351.7	228.4	351.81	242.53	351.32
264.66	350.52	286.44	349.15	310.41	348.72	338.21	349	371.72	348.77
400.9	348.48	416.8	348.59	427.74	348.67	430.58	344.68	431.8	344.26
436.65	344.85	441.26	344.51	442.29	347.58	447.46	349.08	448.01	349.24
458.85	350.67	471.3	352.75	481.29	354.33	491.23	357.26		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	427.74	.04	447.46	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.

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        427.74  447.46            167.7  167.44  166.86            .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1124

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  365.04    4.51  364.72    9.16  364.27    9.25  364.27   12.12     364
    15.5  363.29   21.22     362   23.39  361.54   30.93     360   35.95  358.97
   39.85  358.17   50.58     356   54.08   355.4   62.03     354   62.65  353.83
   63.34  353.65   73.01   352.9   74.16  352.78   80.64     352   83.69  351.62
   99.16     350   114.6  348.69  124.02  348.63   131.1  347.62  149.71  348.01
  162.72  347.51  168.53  347.49  170.35  344.49  173.71  344.74  179.87  343.88
  182.52  344.16  184.05  346.89  186.24     347  189.68  348.23  195.55  348.19
     207   347.6  214.71  347.82  233.96  347.66  252.64   348.2  276.32   348.2
  304.29  347.84  332.45  347.91  346.81  348.51  347.97   348.3     348   348.3
  350.12  347.92  353.36   347.9  355.26  348.34   360.2  343.58   367.1  344.05
  375.37  349.26  378.03   349.7  378.05   349.7  380.33  350.08  392.73  351.02
  398.58  351.56  403.03  351.81  420.09     354  435.53     356  439.63  356.61
  442.77  357.02  450.32     358  455.33  358.77   457.5  359.06  460.77  359.47
  461.87  359.63  462.18  359.68   465.1     360  473.65  361.11  476.71  361.53
  479.97     362  480.72  362.12  480.94  362.16  483.56  362.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  355.26     .04  375.37    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        355.26  375.37           134.05  129.91   125.5             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     8.7    60.7     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 994

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   359.1    9.62     358   14.71  356.95    19.8     356   30.42  354.45
   33.38     354   36.49   353.7    54.6     352   57.99  351.76   59.66  351.64
   70.88  350.84   72.94   350.7   82.85     350  114.72  348.11  135.81   347.8
  150.43  347.49  170.48  346.43  171.74  343.41  176.87  342.99  186.86  344.33
  188.91  347.54  212.62   347.3  226.74     347  231.31  347.32  247.53  347.69
  256.13   347.8  270.71  347.72  281.14  348.11   284.5   347.5  286.04  347.21
  292.04  347.03  296.33  343.73  302.06  343.28  306.33  342.85  309.85  346.99
  314.78  348.42  315.81  348.64  315.83  348.64  320.17  349.59  333.26  350.57
     351  352.36  364.37     354     373   355.3  375.39  355.67  377.77     356
  383.23  356.87  390.35     358  393.92  358.56   397.2  359.05  403.45     360
  407.85  360.84  413.86     362  417.04  362.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  281.14     .04  315.83    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        281.14  315.83            82.93   82.66    81.8             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 911

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     359    2.24  358.56    3.51  358.32    5.22     358   12.31  356.66
   15.03  356.09   15.46     356   22.75  354.09   23.08     354   23.55  353.96
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   24.83  353.84   24.92  353.83   25.43  353.83   29.76  353.58      30  353.57
   30.58   353.5   31.25  353.48   33.98  353.69    35.3   353.7   36.97  353.98
   37.02  353.98   37.13     354    37.9  354.04   38.06  354.05   38.27  354.04
   38.32  354.04   38.42  354.03   38.82     354   38.99  353.95    39.2  353.82
   44.56  353.53   50.12  353.05   56.89  352.42   59.95  352.14   61.41     352
   82.47  350.57   91.08     350  100.51   349.7  117.56  348.31  130.96  347.87
  157.71  347.03  178.22  347.23  181.99  344.27  189.47  343.55  196.66  344.12
  201.78   347.5  223.44  347.06  243.05  346.93  252.46  346.76   252.6  346.85
  292.54  347.06  306.34  347.38  312.43  347.51  317.18  343.33  321.46  342.92
   325.5  343.21  332.27  348.29  337.05     349  337.06     349  351.26  351.11
  381.21  355.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  312.43     .04  332.27    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        312.43  332.27           138.48  148.66  157.22             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 762

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  357.13    2.35  357.03    6.48  356.67    7.69  356.61    9.39  356.51
   14.41     356   19.83  355.44      21  355.32   22.74  355.12   32.28     354
   34.37   353.8   35.36  353.71   51.57  352.14   52.81  352.02   53.01     352
   61.67  351.41   65.26  351.17   67.97  350.99   73.71  350.62   76.99  350.42
   81.35  350.17   81.78  350.14   84.01  350.03   84.52     350   108.7  348.46
  145.52  346.99  169.46  347.05  186.24  347.42  197.19  345.22  199.28  343.68
  205.18   343.3  208.29  343.86  210.89  346.07  228.95  347.18  235.77   347.3
  240.55  347.28  244.65  347.26  244.66  347.26   252.8  347.23   257.6  343.09
  259.66  342.54  263.98  342.94   271.9  344.77  276.21  346.65  276.24  346.66
  276.97  346.98  298.22  347.67  328.56  347.99  360.33  351.01  370.76  351.97
  371.89     352   373.6  352.14  375.07  352.27  376.35   352.4  384.34  353.82
  384.65  353.87  384.83   353.9  384.94  353.92   385.3     354     392  355.62
  393.35     356  395.32   356.4  403.54     358  408.28  358.51  410.83  358.82
  411.55  358.82  412.84   358.8  416.14  358.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   252.8     .04  276.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         252.8  276.97           101.69  104.14  104.96             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   366.8   407.4     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 658

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  358.95    2.26  358.79     5.3  358.55    9.28   358.2   11.48     358
   14.26  357.65   16.66  357.36   20.41  356.87   26.22  356.16   35.44  355.02
   41.74  354.15   42.79     354   59.31   352.1    59.6  352.07   59.76  352.05
    60.3     352   70.49  351.39    76.4  351.02   86.06  350.44   92.55     350
  118.81     348  200.75  346.51  222.09  346.42  240.58  346.42  240.59  346.42
   245.1  346.43  248.95  343.16  255.63  340.34   262.8   340.2  267.31  342.59
  270.68  343.91  277.89  346.74  301.79  346.57  332.03  346.36  388.47  347.88
  391.63  347.92  394.29  347.92  394.49  347.91  400.05     348  401.61  348.21
  402.93   348.4  404.42  348.65   405.7  348.87  406.58  349.04  407.19  349.17
  412.03     350  415.92  350.98  417.72  351.13  418.47  351.21  420.03  351.39
  422.64  351.75  422.86  351.79  424.26     352  426.31  352.71  429.22  353.83
  429.43  353.91  429.85  354.09  434.45     356  442.51  357.75  442.83  357.83
  443.54     358  450.24  358.39  464.98  359.29  465.18  359.32  466.53  359.48
  470.64     360  471.72  360.06  477.88   360.4  481.52  360.61  490.37  361.08
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	245.1	.04	277.89	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.1	277.89	129.48	132.55	137.52	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 526

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.29	9.33	356.07	9.88	356	15.36	355.41	18.93	355.03
21	354.81	28.17	354	30.46	353.79	34.1	353.48	42.62	352.81
46.05	352.53	47.8	352.4	49.22	352.29	53.02	352	59.04	351.42
61.87	351.16	67.63	350.62	73.95	350	93.12	348.67	121.73	346.39
157.75	346.18	186.76	345.79	188.34	345.18	188.36	345.17	195.28	342.48
203.56	341.63	212.23	342.05	213.87	346.6	218.56	346.44	218.57	346.44
237.47	345.8	275.28	345.64	307.64	346.39	309.73	346.39	311.5	346.41
313.11	346.41	314.75	346.4	329.39	346.38	337.83	346.31	340.98	346.28
350.53	346.19	372.03	346	378.64	346.57	382.54	346.9	390.22	347.56
395.28	348	402.02	349.12	407.12	350	408.46	350.19	409.19	350.29
409.96	350.41	415.16	351.21	417.91	351.63	420.21	352	425.22	352.92
430.26	354	432.81	354.65	434.33	355	437.88	355.74	438.42	355.87
439.17	356	441.01	356.24	446.9	356.96	448.95	357.26	452.86	357.84
453.18	357.89	453.89	358	458.07	358.55	459.62	358.79	462.41	359.19
467.23	360	483.54	360.76						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.76	.04	213.87	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.76	213.87	143.66	145.78	147.57	.1 .3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
443	476.3	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 380

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.67	.48	366.64	10.41	366	17.37	364.74	21.25	364
25.91	363.14	31.6	362	37.28	360.91	41.95	360	46.91	359.56
63.27	358	71.54	357.11	76.74	356.56	81.96	356	84.51	355.63
95.36	354	101.45	352.61	104.07	352	106.08	351.38	110.9	350
116.69	348.33	117.74	348	119.59	347.7	121.4	347.41	126.04	346.65
130	346	133.26	346.1	135.45	346.16	138.15	346.24	146.78	346.47
149.42	346.45	150.34	346.44	151.1	346.43	151.57	346.42	155.44	346.29
164.04	345.66	193.28	345.53	212.79	346.39	212.81	346.39	215.37	346.51
219.06	341.92	227.8	342.05	238.17	343.21	243.49	346.6	243.7	346.6
243.72	346.59	260.79	346.48	291.92	346.27	304.59	346	319.84	347.43
322.97	347.65	328.49	348	330.64	348.16	332.41	348.38	334.7	348.61
337.77	348.94	346.14	350	350.1	350.95	354.1	352	360.75	353.66
362.11	354	365.83	354.84	369.98	355.77	370.39	355.85	371.06	356
372.08	356.17	382.09	358	386.28	358.59	390.61	359.14		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.37	.04	243.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.37	243.7	235.8	234.15	232.25	.1 .3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10	44.6	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 146

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	6.37	358.83	15.88	358.07	16.47	358.02	16.84	358
21.14	357.01	25.77	356	28.06	355.5	30.16	355.06	34.73	354.18
35.2	354.08	35.66	354	37.68	353.72	38.1	353.66	41.6	353.18
44.05	352.85	45.88	352.61	50.58	352.01	50.71	352	52.8	351.88
60.34	351.5	61.05	351.44	66.3	351.17	67.3	351.09	70.18	350.94
72.76	350.72	76.24	350.54	81.27	350	100.43	348.85	105.06	348.54
115.51	348	138.29	346.9	181.73	345.23	210.07	344.41	210.09	344.41
215.13	344.26	220.35	341.19	225.41	340.73	231.22	340.96	236.01	344.28
240.33	344.79	253.16	346.33	258.95	349.49	260.11	349.59	263.96	350.56
267.35	352	269.7	353.13	271.51	354	273.55	355.07	275.21	356
277.09	356.89	279.29	358	283.62	359.32	285.5	359.78	286.47	360
291.06	360.4	294.96	360.73	299.25	361.08	301.38	361.31	304.13	361.54
306.53	361.84	306.74	361.86	307.86	362	314.98	363.37	318.1	364
325.64	365.64	327.27	366	335.18	367.64	336.93	368	339.58	368.18
343.85	368.49	346.34	368.31						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.13	.04	236.01	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.13	236.01	88.09	82.88	77.62	.1 .3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
15.2	56.5	365	296.2	338	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 63

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	354	7.34	353.26	12.41	352.73	16.79	352.29	19.4	352
27.1	350.79	31.84	350	38.59	349.24	50.74	348	57.78	347.37
58.67	347.29	60.21	347.18	62.82	346.94	66.66	346.68	68.29	346.54
76.91	346	79.38	345.88	79.63	345.86	80	345.83	80.68	345.78
83.85	345.58	87.55	345.35	103.02	344	108.36	342.62	114.01	342
118.01	340	138.02	340	142.02	342	147.2	343.25	150.03	344
151.66	344.32	153.16	344.61	153.93	344.74	155.1	344.92	156.66	345.2
158.34	345.42	159.11	345.56	160.97	345.74	161.25	345.79	163.2	345.94
163.62	346	170.72	346	174.59	346.47	175.77	346.56	176.48	346.66
177.66	346.84	178.56	346.94	180.57	347.23	181.89	347.4	182.5	347.49
185.96	348	187.92	348.58	193.03	350	195.4	350.82	198.31	352
201.23	353.21	203.77	354	207.9	355.67	208.87	356	212.01	357.21
214.25	358	216.21	358.46	223.24	360	225.85	360.29	227.5	360.52
231.62	361.04	238.04	362	248.29	363.79	249.46	364	253.46	364.5
253.68	364.53								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	103.02	.04	150.03	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
103.02	150.03	0	0	0 .1	.3

SUMMARY OF MANNING'S N VALUES

River:Plumtree

Reach	River Sta.	n1	n2	n3
Plumtree	10286	.085	.04	.085
Plumtree	10044	.085	.04	.085
Plumtree	9814	.085	.04	.085

Plumtree	9762	.085	.04	.085
Plumtree	9732	.075	.04	.075
Plumtree	9650	Culvert		
Plumtree	9589	.075	.04	.075
Plumtree	9499	.075	.04	.075
Plumtree	9398	.085	.04	.085
Plumtree	9301	.085	.04	.085
Plumtree	9196	.085	.04	.085
Plumtree	8987	.085	.04	.085
Plumtree	8753	.065	.04	.085
Plumtree	8579	.075	.04	.085
Plumtree	8374	.075	.04	.085
Plumtree	8229	.075	.04	.085
Plumtree	8094	.075	.04	.085
Plumtree	7954	.075	.04	.085
Plumtree	7800	.075	.04	.085
Plumtree	7548	.075	.04	.085
Plumtree	7367	.075	.04	.075
Plumtree	7216	.075	.04	.075
Plumtree	7030	.075	.04	.075
Plumtree	6893	.075	.04	.075
Plumtree	6766	.075	.04	.075
Plumtree	6663	.075	.04	.075
Plumtree	6568	.075	.04	.075
Plumtree	6454	.075	.04	.075
Plumtree	6350	.075	.04	.075
Plumtree	6296	.075	.04	.075
Plumtree	6250	Culvert		
Plumtree	6197	.075	.04	.075
Plumtree	6122	.075	.04	.075
Plumtree	6028	.075	.04	.075
Plumtree	5926	.075	.04	.075
Plumtree	5824	.075	.04	.075
Plumtree	5745	.075	.04	.075
Plumtree	5711	.075	.04	.075
Plumtree	5650	Culvert		
Plumtree	5614	.075	.04	.075
Plumtree	5560	.075	.04	.075
Plumtree	5510	.075	.04	.075
Plumtree	5500	Bridge		
Plumtree	5474	.075	.04	.075
Plumtree	5419	.075	.04	.075
Plumtree	5323	.075	.04	.075
Plumtree	5209	.075	.04	.075
Plumtree	5107	.075	.04	.075
Plumtree	5040	.075	.04	.075
Plumtree	5000	Culvert		
Plumtree	4932	.075	.04	.075
Plumtree	4845	.075	.04	.075
Plumtree	4745	.075	.04	.075
Plumtree	4636	.075	.04	.075
Plumtree	4550	.075	.04	.075
Plumtree	4400	Culvert		
Plumtree	4344	.075	.04	.075
Plumtree	4289	.075	.04	.075
Plumtree	4185	.075	.04	.075
Plumtree	4033	.075	.04	.075
Plumtree	3930	.075	.04	.075
Plumtree	3816	.075	.04	.075
Plumtree	3688	.075	.04	.075
Plumtree	3550	.075	.04	.075
Plumtree	3428	.075	.04	.075
Plumtree	3296	.075	.04	.075
Plumtree	3179	.075	.04	.075
Plumtree	3077	.075	.04	.075
Plumtree	2978	.075	.04	.075
Plumtree	2917	.075	.04	.075
Plumtree	2900	Culvert		
Plumtree	2827	.075	.04	.075
Plumtree	2759	.075	.04	.075
Plumtree	2589	.075	.04	.075
Plumtree	2485	.075	.04	.075
Plumtree	2331	.075	.04	.075
Plumtree	2153	.075	.04	.075
Plumtree	1994	.075	.04	.075
Plumtree	1888	.075	.04	.075
Plumtree	1850	Bridge		
Plumtree	1830	.075	.04	.075
Plumtree	1641	.075	.04	.075

Plumtree	1463	.075	.04	.075
Plumtree	1291	.075	.04	.075
Plumtree	1124	.075	.04	.075
Plumtree	994	.075	.04	.075
Plumtree	911	.075	.04	.075
Plumtree	762	.075	.04	.075
Plumtree	658	.075	.04	.075
Plumtree	526	.075	.04	.075
Plumtree	380	.075	.04	.075
Plumtree	146	.075	.04	.075
Plumtree	63	.075	.04	.075

SUMMARY OF REACH LENGTHS

River: Plumtree

Reach	River Sta.	Left	Channel	Right
Plumtree	10286	240.46	241.25	237.2
Plumtree	10044	233.9	230.57	222.97
Plumtree	9814	52.19	51.52	50.85
Plumtree	9762	32.64	30.09	27.57
Plumtree	9732	145.71	143.47	141.55
Plumtree	9650	Culvert		
Plumtree	9589	74.95	89.37	103.36
Plumtree	9499	98.65	101.8	104.92
Plumtree	9398	97.24	96.47	94.54
Plumtree	9301	109.84	105	100.42
Plumtree	9196	197.07	208.89	195.59
Plumtree	8987	233.38	233.77	226.61
Plumtree	8753	178.41	174.76	168.62
Plumtree	8579	198.29	204.23	206.04
Plumtree	8374	144.9	145.45	146.03
Plumtree	8229	135.27	135.16	134.66
Plumtree	8094	138.21	139.81	140.01
Plumtree	7954	155.28	153.64	152.99
Plumtree	7800	252.37	252.82	252.55
Plumtree	7548	174.12	180.41	186.79
Plumtree	7367	143.37	150.84	157.8
Plumtree	7216	190.28	186.42	181.46
Plumtree	7030	140.13	137.19	133.92
Plumtree	6893	124.46	126.53	128.02
Plumtree	6766	103.31	103.53	104.46
Plumtree	6663	90.58	94.53	97.72
Plumtree	6568	112.95	114.27	115.74
Plumtree	6454	102.69	103.78	104.74
Plumtree	6350	52.33	53.78	55.24
Plumtree	6296	98.47	99.02	99.58
Plumtree	6250	Culvert		
Plumtree	6197	75.78	74.81	73.83
Plumtree	6122	98.18	94.21	91.92
Plumtree	6028	100.93	101.91	101.19
Plumtree	5926	102.11	102.54	102.93
Plumtree	5824	75.62	79.21	82.75
Plumtree	5745	34.07	34.02	34.04
Plumtree	5711	96.24	96.18	98.71
Plumtree	5650	Culvert		
Plumtree	5614	60.47	54.67	45.26
Plumtree	5560	56.62	49.74	41.3
Plumtree	5510	36.56	36.42	38.18
Plumtree	5500	Bridge		
Plumtree	5474	54.4	54.86	54.94
Plumtree	5419	93.04	95.36	97.65
Plumtree	5323	116.69	114.31	111.9
Plumtree	5209	111.42	101.59	91.47
Plumtree	5107	67.29	67.07	66.86
Plumtree	5040	104.82	108.2	107.53
Plumtree	5000	Culvert		
Plumtree	4932	86.54	87.15	87.5
Plumtree	4845	89.54	100.49	110.66
Plumtree	4745	111.08	108.67	106.25
Plumtree	4636	90.09	85.72	81.01
Plumtree	4550	205.67	206.54	206.28
Plumtree	4400	Culvert		
Plumtree	4344	54.24	54.2	54.21
Plumtree	4289	104.83	104.42	103.52

Plumtree	4185	151.73	151.97	152.24
Plumtree	4033	105.3	103.27	101.24
Plumtree	3930	112.01	113.72	114.59
Plumtree	3816	128.5	127.87	127.21
Plumtree	3688	137.67	137.99	138.3
Plumtree	3550	121.58	121.96	122.09
Plumtree	3428	131.85	132.32	132.95
Plumtree	3296	117.57	116.94	115.99
Plumtree	3179	101.1	102.24	103.14
Plumtree	3077	99.64	98.98	98.39
Plumtree	2978	61.85	60.74	60.21
Plumtree	2917	89.63	90.26	89.98
Plumtree	2900	Culvert		
Plumtree	2827	59.3	67.61	75.81
Plumtree	2759	166.79	169.71	170.1
Plumtree	2589	102.11	104.17	106.57
Plumtree	2485	153.6	154.59	153.42
Plumtree	2331	179.37	177.6	175.87
Plumtree	2153	160.15	158.75	157.04
Plumtree	1994	108.1	106.05	103.75
Plumtree	1888	61.13	58.24	54.2
Plumtree	1850	Bridge		
Plumtree	1830	183.1	189.46	194.94
Plumtree	1641	176.17	177.29	178.52
Plumtree	1463	172.51	172.28	171.74
Plumtree	1291	167.7	167.44	166.86
Plumtree	1124	134.05	129.91	125.5
Plumtree	994	82.93	82.66	81.8
Plumtree	911	138.48	148.66	157.22
Plumtree	762	101.69	104.14	104.96
Plumtree	658	129.48	132.55	137.52
Plumtree	526	143.66	145.78	147.57
Plumtree	380	235.8	234.15	232.25
Plumtree	146	88.09	82.88	77.62
Plumtree	63	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Plumtree

Reach	River Sta.	Contr.	Expan.
Plumtree	10286	.1	.3
Plumtree	10044	.1	.3
Plumtree	9814	.1	.3
Plumtree	9762	.1	.3
Plumtree	9732	.3	.5
Plumtree	9650	Culvert	
Plumtree	9589	.3	.5
Plumtree	9499	.1	.3
Plumtree	9398	.1	.3
Plumtree	9301	.1	.3
Plumtree	9196	.1	.3
Plumtree	8987	.1	.3
Plumtree	8753	.1	.3
Plumtree	8579	.1	.3
Plumtree	8374	.1	.3
Plumtree	8229	.1	.3
Plumtree	8094	.1	.3
Plumtree	7954	.1	.3
Plumtree	7800	.1	.3
Plumtree	7548	.1	.3
Plumtree	7367	.1	.3
Plumtree	7216	.1	.3
Plumtree	7030	.1	.3
Plumtree	6893	.1	.3
Plumtree	6766	.1	.3
Plumtree	6663	.1	.3
Plumtree	6568	.1	.3
Plumtree	6454	.1	.3
Plumtree	6350	.1	.3
Plumtree	6296	.3	.5
Plumtree	6250	Culvert	
Plumtree	6197	.3	.5
Plumtree	6122	.1	.3
Plumtree	6028	.1	.3

Plumtree	5926		.1	.3
Plumtree	5824		.1	.3
Plumtree	5745		.1	.3
Plumtree	5711		.3	.5
Plumtree	5650	Culvert		
Plumtree	5614		.3	.5
Plumtree	5560		.1	.3
Plumtree	5510		.3	.5
Plumtree	5500	Bridge		
Plumtree	5474		.3	.5
Plumtree	5419		.1	.3
Plumtree	5323		.1	.3
Plumtree	5209		.1	.3
Plumtree	5107		.1	.3
Plumtree	5040		.3	.5
Plumtree	5000	Culvert		
Plumtree	4932		.3	.5
Plumtree	4845		.1	.3
Plumtree	4745		.1	.3
Plumtree	4636		.1	.3
Plumtree	4550		.3	.5
Plumtree	4400	Culvert		
Plumtree	4344		.3	.5
Plumtree	4289		.1	.3
Plumtree	4185		.1	.3
Plumtree	4033		.1	.3
Plumtree	3930		.1	.3
Plumtree	3816		.1	.3
Plumtree	3688		.1	.3
Plumtree	3550		.1	.3
Plumtree	3428		.1	.3
Plumtree	3296		.1	.3
Plumtree	3179		.1	.3
Plumtree	3077		.1	.3
Plumtree	2978		.1	.3
Plumtree	2917		.3	.5
Plumtree	2900	Culvert		
Plumtree	2827		.3	.5
Plumtree	2759		.1	.3
Plumtree	2589		.1	.3
Plumtree	2485		.1	.3
Plumtree	2331		.1	.3
Plumtree	2153		.1	.3
Plumtree	1994		.1	.3
Plumtree	1888		.3	.5
Plumtree	1850	Bridge		
Plumtree	1830		.3	.5
Plumtree	1641		.1	.3
Plumtree	1463		.1	.3
Plumtree	1291		.1	.3
Plumtree	1124		.1	.3
Plumtree	994		.1	.3
Plumtree	911		.1	.3
Plumtree	762		.1	.3
Plumtree	658		.1	.3
Plumtree	526		.1	.3
Plumtree	380		.1	.3
Plumtree	146		.1	.3
Plumtree	63		.1	.3

HEC-RAS Plan: D River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	10286	1-YR	223.00	395.09	396.81	396.59	396.90	0.008138	3.23	121.42	150.01	0.58
Plumtree	10286	2-YR	307.00	395.09	396.98	396.60	397.10	0.008539	3.69	147.05	154.15	0.62
Plumtree	10286	10-YR	596.00	395.09	397.61	396.95	397.76	0.006496	4.33	248.53	169.55	0.58
Plumtree	10286	50-YR	995.00	395.09	398.01	397.34	398.27	0.008537	5.71	319.43	179.33	0.69
Plumtree	10286	100-YR	1200.00	395.09	398.12	397.51	398.46	0.010360	6.50	338.95	180.10	0.76
Plumtree	10286	7-30-2016	1333.00	395.09	398.20	397.62	398.58	0.011255	6.93	353.34	180.66	0.80
Plumtree	10044	1-YR	223.00	392.49	394.38	394.17	394.55	0.012033	4.01	95.57	160.05	0.71
Plumtree	10044	2-YR	307.00	392.49	394.57	394.26	394.76	0.011181	4.31	128.56	181.74	0.71
Plumtree	10044	10-YR	596.00	392.49	394.81	394.81	395.21	0.019905	6.42	174.65	200.40	0.97
Plumtree	10044	50-YR	995.00	392.49	395.39		395.77	0.013024	6.57	298.64	234.35	0.83
Plumtree	10044	100-YR	1200.00	392.49	395.74		396.07	0.009632	6.31	384.48	255.67	0.74
Plumtree	10044	7-30-2016	1333.00	392.49	395.95		396.26	0.008317	6.22	439.55	268.46	0.69
Plumtree	9814	1-YR	223.00	388.76	391.65	391.32	391.94	0.010722	4.30	51.91	43.53	0.69
Plumtree	9814	2-YR	307.00	388.76	392.01	391.61	392.32	0.010099	4.47	68.69	52.13	0.69
Plumtree	9814	10-YR	596.00	388.76	393.97	392.33	394.04	0.000995	2.52	424.51	272.22	0.25
Plumtree	9814	50-YR	995.00	388.76	395.24	393.16	395.30	0.000598	2.45	789.28	304.39	0.20
Plumtree	9814	100-YR	1200.00	388.76	395.55	393.38	395.62	0.000647	2.66	886.00	315.10	0.21
Plumtree	9814	7-30-2016	1333.00	388.76	395.75	393.50	395.82	0.000664	2.77	948.65	317.79	0.22
Plumtree	9762	1-YR	223.00	388.00	390.84		391.29	0.014434	5.36	41.63	30.27	0.81
Plumtree	9762	2-YR	307.00	388.00	391.35	390.95	391.76	0.011216	5.15	64.37	69.10	0.73
Plumtree	9762	10-YR	596.00	388.00	393.94		394.00	0.000648	2.21	479.19	228.01	0.20
Plumtree	9762	50-YR	995.00	388.00	395.21		395.27	0.000538	2.45	796.82	286.89	0.19
Plumtree	9762	100-YR	1200.00	388.00	395.52		395.59	0.000598	2.69	890.44	322.86	0.21
Plumtree	9762	7-30-2016	1333.00	388.00	395.71		395.79	0.000658	2.89	954.17	331.68	0.22
Plumtree	9732	1-YR	223.00	387.00	390.89	389.66	391.03	0.002737	3.09	72.07	34.50	0.38
Plumtree	9732	2-YR	307.00	387.00	391.35	390.00	391.54	0.002876	3.45	88.95	37.47	0.39
Plumtree	9732	10-YR	596.00	387.00	393.80	390.90	393.96	0.000990	3.21	193.76	166.87	0.26
Plumtree	9732	50-YR	995.00	387.00	395.11	391.81	395.24	0.000766	3.32	527.07	223.95	0.24
Plumtree	9732	100-YR	1200.00	387.00	395.40	392.17	395.56	0.000880	3.68	593.43	235.24	0.26
Plumtree	9732	7-30-2016	1333.00	387.00	395.59	392.41	395.76	0.000934	3.86	638.78	241.96	0.27
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	223.00	386.27	389.31	388.43	389.52	0.004152	3.67	61.60	35.83	0.46
Plumtree	9589	2-YR	307.00	386.27	389.99	388.79	390.20	0.002856	3.72	85.70	43.20	0.40
Plumtree	9589	10-YR	596.00	386.27	391.04	389.65	391.43	0.003384	5.07	123.56	63.32	0.47
Plumtree	9589	50-YR	995.00	386.27	392.07	390.53	392.59	0.003515	6.09	227.25	135.97	0.50
Plumtree	9589	100-YR	1200.00	386.27	392.60	390.93	393.12	0.003223	6.26	327.48	245.13	0.48
Plumtree	9589	7-30-2016	1333.00	386.27	392.89	391.32	393.38	0.002996	6.26	402.44	267.37	0.47
Plumtree	9499	1-YR	204.00	385.35	388.97		389.15	0.003898	3.51	70.65	50.97	0.44
Plumtree	9499	2-YR	321.00	385.35	389.75		389.92	0.002934	3.58	125.38	124.78	0.40
Plumtree	9499	10-YR	719.00	385.35	390.88		391.08	0.002582	4.32	294.26	158.77	0.40
Plumtree	9499	50-YR	1263.00	385.35	391.97		392.20	0.002314	4.88	474.75	171.09	0.40
Plumtree	9499	100-YR	1578.00	385.35	392.51		392.74	0.002216	5.13	567.74	175.97	0.40
Plumtree	9499	7-30-2016	1757.00	385.35	392.79		393.03	0.002177	5.27	617.40	178.49	0.40
Plumtree	9398	1-YR	204.00	384.42	388.37		388.70	0.004701	4.54	44.89	15.87	0.48
Plumtree	9398	2-YR	321.00	384.42	388.92	387.78	389.45	0.006779	5.86	65.41	97.70	0.58
Plumtree	9398	10-YR	719.00	384.42	390.45		390.76	0.003626	5.57	289.42	167.13	0.45
Plumtree	9398	50-YR	1263.00	384.42	391.67		391.93	0.002885	5.79	503.70	182.79	0.42
Plumtree	9398	100-YR	1578.00	384.42	392.22		392.49	0.002794	6.05	606.79	192.69	0.42
Plumtree	9398	7-30-2016	1757.00	384.42	392.51		392.78	0.002729	6.16	664.04	196.97	0.42
Plumtree	9301	1-YR	204.00	383.31	388.11		388.33	0.002680	3.80	62.04	32.60	0.37
Plumtree	9301	2-YR	321.00	383.31	388.50		388.89	0.004323	5.16	81.35	69.83	0.48
Plumtree	9301	10-YR	719.00	383.31	389.23	389.18	390.17	0.009143	8.49	142.78	91.28	0.72
Plumtree	9301	50-YR	1263.00	383.31	390.17	390.17	391.36	0.010478	10.35	232.10	100.36	0.80
Plumtree	9301	100-YR	1578.00	383.31	390.59	390.59	391.91	0.011035	11.19	275.72	104.50	0.83
Plumtree	9301	7-30-2016	1757.00	383.31	390.79	390.79	392.19	0.011514	11.69	296.68	106.44	0.85
Plumtree	9196	1-YR	204.00	383.81	387.40	387.40	387.81	0.010238	5.48	61.09	107.80	0.69
Plumtree	9196	2-YR	321.00	383.81	387.74	387.73	388.20	0.010946	6.21	99.99	121.59	0.73
Plumtree	9196	10-YR	719.00	383.81	388.82		389.17	0.006723	6.33	246.23	143.82	0.61
Plumtree	9196	50-YR	1263.00	383.81	389.79	389.01	390.16	0.005917	7.03	390.74	154.81	0.60
Plumtree	9196	100-YR	1578.00	383.81	390.24	389.28	390.64	0.005766	7.42	461.97	159.38	0.60
Plumtree	9196	7-30-2016	1757.00	383.81	390.48	389.44	390.89	0.005701	7.62	500.52	161.92	0.60
Plumtree	8987	1-YR	204.00	382.77	386.54	385.23	386.67	0.002345	3.34	119.75	115.30	0.34
Plumtree	8987	2-YR	321.00	382.77	387.00		387.15	0.002549	3.84	174.45	121.03	0.37
Plumtree	8987	10-YR	719.00	382.77	387.95		388.19	0.003433	5.25	295.29	132.81	0.44
Plumtree	8987	50-YR	1263.00	382.77	388.79		389.13	0.004364	6.66	410.83	141.71	0.52
Plumtree	8987	100-YR	1578.00	382.77	389.19		389.58	0.004762	7.31	467.81	145.45	0.54
Plumtree	8987	7-30-2016	1757.00	382.77	389.40		389.82	0.004958	7.64	498.21	147.40	0.56

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	8753	1-YR	204.00	381.99	385.24	385.24	385.66	0.009692	5.85	60.16	79.52	0.66
Plumtree	8753	2-YR	321.00	381.99	385.62	385.55	386.06	0.010043	6.55	91.63	87.32	0.69
Plumtree	8753	10-YR	719.00	381.99	386.73		387.08	0.006968	6.81	225.01	174.86	0.61
Plumtree	8753	50-YR	1263.00	381.99	387.83		388.07	0.004512	6.46	448.27	231.04	0.51
Plumtree	8753	100-YR	1578.00	381.99	388.33		388.55	0.003768	6.29	569.25	245.93	0.47
Plumtree	8753	7-30-2016	1757.00	381.99	388.59		388.80	0.003460	6.22	634.06	251.24	0.46
Plumtree	8579	1-YR	204.00	381.13	384.21	383.48	384.40	0.004728	4.12	88.21	90.48	0.48
Plumtree	8579	2-YR	321.00	381.13	384.75		384.94	0.003945	4.34	141.08	101.78	0.46
Plumtree	8579	10-YR	719.00	381.13	385.97		386.19	0.003546	5.22	276.06	121.09	0.46
Plumtree	8579	50-YR	1263.00	381.13	387.05		387.34	0.003765	6.30	417.89	143.41	0.49
Plumtree	8579	100-YR	1578.00	381.13	387.55		387.87	0.003821	6.76	491.56	151.07	0.50
Plumtree	8579	7-30-2016	1757.00	381.13	387.81		388.15	0.003835	6.98	531.31	154.43	0.51
Plumtree	8374	1-YR	204.00	380.31	383.79		383.88	0.001467	2.73	125.40	87.23	0.28
Plumtree	8374	2-YR	321.00	380.31	384.29		384.40	0.001770	3.25	170.67	94.20	0.32
Plumtree	8374	10-YR	719.00	380.31	385.42		385.60	0.002339	4.48	286.79	111.54	0.38
Plumtree	8374	50-YR	1263.00	380.31	386.39		386.67	0.002922	5.73	401.35	123.87	0.44
Plumtree	8374	100-YR	1578.00	380.31	386.83		387.17	0.003216	6.33	456.77	130.00	0.47
Plumtree	8374	7-30-2016	1757.00	380.31	387.05		387.42	0.003372	6.65	486.33	133.64	0.48
Plumtree	8229	1-YR	204.00	379.79	382.85	382.85	383.38	0.010607	6.43	55.07	65.24	0.72
Plumtree	8229	2-YR	321.00	379.79	383.45	383.29	383.89	0.008132	6.50	101.18	86.73	0.65
Plumtree	8229	10-YR	719.00	379.79	384.50		385.00	0.008159	7.90	207.07	116.52	0.68
Plumtree	8229	50-YR	1263.00	379.79	385.40		385.97	0.008374	9.13	323.88	136.34	0.72
Plumtree	8229	100-YR	1578.00	379.79	385.82		386.43	0.008442	9.66	381.90	142.15	0.73
Plumtree	8229	7-30-2016	1757.00	379.79	386.02		386.65	0.008655	10.01	410.04	144.93	0.74
Plumtree	8094	1-YR	204.00	378.24	381.72	380.86	382.12	0.007249	5.29	52.91	63.22	0.57
Plumtree	8094	2-YR	321.00	378.24	382.06	381.98	382.66	0.010033	6.70	79.41	93.32	0.68
Plumtree	8094	10-YR	719.00	378.24	382.97	382.97	383.69	0.011307	8.47	178.49	125.63	0.75
Plumtree	8094	50-YR	1263.00	378.24	383.69	383.69	384.56	0.012929	10.14	277.14	145.63	0.83
Plumtree	8094	100-YR	1578.00	378.24	384.01	384.01	384.96	0.013794	10.94	324.44	153.05	0.87
Plumtree	8094	7-30-2016	1757.00	378.24	384.19	384.19	385.16	0.013852	11.24	353.17	157.07	0.87
Plumtree	7954	1-YR	204.00	377.79	381.03	380.76	381.13	0.005744	3.86	126.49	155.83	0.50
Plumtree	7954	2-YR	321.00	377.79	381.31	380.96	381.43	0.006207	4.41	171.27	160.64	0.53
Plumtree	7954	10-YR	719.00	377.79	382.00	381.39	382.18	0.007341	5.77	285.97	176.81	0.60
Plumtree	7954	50-YR	1263.00	377.79	382.67	381.85	382.91	0.007888	6.89	408.32	187.44	0.65
Plumtree	7954	100-YR	1578.00	377.79	383.00	382.11	383.28	0.008071	7.39	470.73	192.59	0.66
Plumtree	7954	7-30-2016	1757.00	377.79	383.18	382.22	383.47	0.008143	7.65	504.53	195.27	0.67
Plumtree	7800	1-YR	204.00	378.73	379.84		379.92	0.011083	3.70	118.96	173.24	0.67
Plumtree	7800	2-YR	321.00	378.73	380.07		380.17	0.011140	4.28	159.11	178.65	0.70
Plumtree	7800	10-YR	719.00	378.73	380.70		380.86	0.010112	5.42	274.43	188.75	0.71
Plumtree	7800	50-YR	1263.00	378.73	381.37		381.59	0.009338	6.43	404.56	199.53	0.72
Plumtree	7800	100-YR	1578.00	378.73	381.71		381.96	0.008979	6.87	473.46	205.01	0.72
Plumtree	7800	7-30-2016	1757.00	378.73	381.90		382.16	0.008748	7.08	512.15	208.02	0.72
Plumtree	7548	1-YR	204.00	375.57	378.60		378.65	0.002820	3.01	196.78	273.00	0.37
Plumtree	7548	2-YR	321.00	375.57	378.91		378.95	0.002633	3.18	281.31	279.96	0.36
Plumtree	7548	10-YR	719.00	375.57	379.67		379.72	0.002428	3.67	501.48	298.60	0.36
Plumtree	7548	50-YR	1263.00	375.57	380.47		380.54	0.002205	4.06	748.35	313.07	0.36
Plumtree	7548	100-YR	1578.00	375.57	380.84		380.91	0.002203	4.30	863.90	318.00	0.36
Plumtree	7548	7-30-2016	1757.00	375.57	381.06		381.14	0.002130	4.38	935.80	320.95	0.36
Plumtree	7367	1-YR	204.00	378.30	377.68		377.74	0.010675		102.16	116.88	0.00
Plumtree	7367	2-YR	321.00	378.30	378.00		378.08	0.010875		144.59	149.00	0.00
Plumtree	7367	10-YR	719.00	378.30	378.92		379.01	0.007196	1.51	320.67	233.97	0.46
Plumtree	7367	50-YR	1263.00	378.30	379.90		379.97	0.004776	2.55	637.68	398.03	0.44
Plumtree	7367	100-YR	1578.00	378.30	380.35		380.41	0.003455	2.76	818.91	407.78	0.40
Plumtree	7367	7-30-2016	1757.00	378.30	380.63		380.69	0.002846	2.81	933.54	412.79	0.37
Plumtree	7216	1-YR	204.00	375.26	377.08	376.50	377.12	0.002071	1.89	168.67	193.23	0.31
Plumtree	7216	2-YR	321.00	375.26	377.38	376.67	377.43	0.002166	2.25	229.61	210.45	0.33
Plumtree	7216	10-YR	719.00	375.26	378.61	377.10	378.66	0.001065	2.35	524.96	263.76	0.25
Plumtree	7216	50-YR	1263.00	375.26	379.63	377.53	379.69	0.000958	2.76	809.52	295.66	0.25
Plumtree	7216	100-YR	1578.00	375.26	380.09	377.75	380.16	0.000948	2.97	950.09	308.96	0.26
Plumtree	7216	7-30-2016	1757.00	375.26	380.39	377.86	380.47	0.000895	3.02	1043.47	315.32	0.25
Plumtree	7030	1-YR	204.00	373.43	376.01	376.01	376.26	0.015350	5.98	89.12	153.12	0.82
Plumtree	7030	2-YR	321.00	373.43	376.17	376.17	376.50	0.019508	7.18	114.64	158.76	0.94
Plumtree	7030	10-YR	719.00	373.43	378.42		378.45	0.001085	2.89	555.10	220.55	0.25
Plumtree	7030	50-YR	1263.00	373.43	379.44		379.49	0.001166	3.47	786.85	234.03	0.27
Plumtree	7030	100-YR	1578.00	373.43	379.89		379.96	0.001258	3.82	895.79	245.16	0.29
Plumtree	7030	7-30-2016	1757.00	373.43	380.20		380.27	0.001255	3.95	972.20	255.73	0.29

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	6893	1-YR	204.00	370.68	374.18	373.50	374.36	0.004782	3.91	91.90	108.43	0.49
Plumtree	6893	2-YR	321.00	370.68	375.05	373.69	375.15	0.001928	3.16	202.54	143.64	0.33
Plumtree	6893	10-YR	719.00	370.68	378.37		378.39	0.000245	1.87	826.25	226.88	0.13
Plumtree	6893	50-YR	1263.00	370.68	379.36		379.40	0.000379	2.57	1061.62	245.81	0.17
Plumtree	6893	100-YR	1578.00	370.68	379.81		379.86	0.000449	2.91	1172.81	254.13	0.19
Plumtree	6893	7-30-2016	1757.00	370.68	380.11		380.16	0.000466	3.05	1250.35	259.49	0.19
Plumtree	6766	1-YR	204.00	369.76	373.41		373.64	0.006789	4.15	71.81	93.23	0.56
Plumtree	6766	2-YR	321.00	369.76	374.91		374.97	0.000957	2.38	244.64	144.06	0.24
Plumtree	6766	10-YR	719.00	369.76	378.34		378.36	0.000159	1.58	980.34	272.23	0.11
Plumtree	6766	50-YR	1263.00	369.76	379.33		379.36	0.000265	2.24	1271.99	320.00	0.14
Plumtree	6766	100-YR	1578.00	369.76	379.76		379.81	0.000321	2.56	1417.73	344.04	0.16
Plumtree	6766	7-30-2016	1757.00	369.76	380.07		380.11	0.000332	2.67	1522.91	354.70	0.16
Plumtree	6663	1-YR	204.00	369.26	372.89		373.13	0.003799	3.93	59.19	58.01	0.44
Plumtree	6663	2-YR	321.00	369.26	374.83		374.89	0.000620	2.29	272.44	169.98	0.19
Plumtree	6663	10-YR	719.00	369.26	378.33		378.35	0.000125	1.52	1131.00	322.49	0.10
Plumtree	6663	50-YR	1263.00	369.26	379.31		379.33	0.000196	2.06	1456.61	342.69	0.12
Plumtree	6663	100-YR	1578.00	369.26	379.74		379.77	0.000234	2.32	1607.56	351.34	0.13
Plumtree	6663	7-30-2016	1757.00	369.26	380.04		380.08	0.000244	2.42	1714.04	357.11	0.14
Plumtree	6568	1-YR	164.00	368.65	372.57		372.79	0.003193	3.80	55.24	46.93	0.38
Plumtree	6568	2-YR	267.00	368.65	374.80		374.83	0.000456	2.06	284.24	152.47	0.16
Plumtree	6568	10-YR	626.00	368.65	378.32		378.33	0.000109	1.42	1062.03	275.41	0.08
Plumtree	6568	50-YR	1232.00	368.65	379.29		379.31	0.000226	2.19	1338.75	297.86	0.12
Plumtree	6568	100-YR	1577.00	368.65	379.72		379.75	0.000291	2.56	1468.75	310.31	0.14
Plumtree	6568	7-30-2016	1843.00	368.65	380.01		380.05	0.000341	2.82	1561.08	320.06	0.15
Plumtree	6454	1-YR	164.00	368.30	372.18		372.38	0.003932	3.53	47.74	31.07	0.44
Plumtree	6454	2-YR	267.00	368.30	374.75		374.79	0.000360	1.84	273.33	162.41	0.15
Plumtree	6454	10-YR	626.00	368.30	378.31		378.32	0.000092	1.37	957.35	226.90	0.08
Plumtree	6454	50-YR	1232.00	368.30	379.25		379.29	0.000208	2.21	1188.00	261.13	0.13
Plumtree	6454	100-YR	1577.00	368.30	379.67		379.72	0.000274	2.61	1299.71	276.52	0.15
Plumtree	6454	7-30-2016	1843.00	368.30	379.95		380.01	0.000325	2.90	1379.70	288.52	0.16
Plumtree	6350	1-YR	164.00	366.97	372.04	369.59	372.13	0.001306	2.42	67.91	24.41	0.26
Plumtree	6350	2-YR	267.00	366.97	374.70	370.48	374.75	0.000351	1.83	163.24	57.21	0.15
Plumtree	6350	10-YR	626.00	366.97	378.26	371.98	378.31	0.000192	1.95	554.55	211.75	0.12
Plumtree	6350	50-YR	1232.00	366.97	379.13	373.68	379.25	0.000454	3.20	732.79	250.10	0.18
Plumtree	6350	100-YR	1577.00	366.97	379.51	374.49	379.67	0.000603	3.79	819.40	266.08	0.21
Plumtree	6350	7-30-2016	1843.00	366.97	379.76	375.09	379.95	0.000714	4.19	881.07	274.70	0.23
Plumtree	6296	1-YR	164.00	367.41	371.87	370.22	372.03	0.002355	3.37	59.62	25.46	0.33
Plumtree	6296	2-YR	267.00	367.41	374.65	370.92	374.72	0.000571	2.51	155.50	43.58	0.18
Plumtree	6296	10-YR	626.00	367.41	378.21	372.49	378.29	0.000390	2.83	489.12	151.06	0.16
Plumtree	6296	50-YR	1232.00	367.41	379.01	374.32	379.21	0.000991	4.76	622.02	207.24	0.26
Plumtree	6296	100-YR	1577.00	367.41	379.35	374.94	379.61	0.001323	5.61	698.18	234.96	0.30
Plumtree	6296	7-30-2016	1843.00	367.41	379.57	376.01	379.88	0.001574	6.21	752.51	250.48	0.33
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	164.00	366.39	370.54	367.84	370.58	0.000473	1.73	94.96	29.30	0.17
Plumtree	6197	2-YR	267.00	366.39	371.50	368.33	371.58	0.000541	2.19	124.65	32.05	0.18
Plumtree	6197	10-YR	626.00	366.39	373.29	369.60	373.49	0.000922	3.60	186.52	37.12	0.26
Plumtree	6197	50-YR	1232.00	366.39	374.99	371.09	375.44	0.001547	5.48	257.28	53.57	0.34
Plumtree	6197	100-YR	1577.00	366.39	375.64	371.82	376.25	0.001907	6.41	297.46	70.63	0.39
Plumtree	6197	7-30-2016	1843.00	366.39	376.09	372.35	376.82	0.002137	7.03	332.02	82.52	0.41
Plumtree	6122	1-YR	164.00	366.62	369.58	369.25	370.28	0.016147	6.73	24.36	11.65	0.82
Plumtree	6122	2-YR	267.00	366.62	370.34	370.20	371.22	0.019840	7.51	35.53	17.64	0.93
Plumtree	6122	10-YR	626.00	366.62	372.06	371.83	373.08	0.011437	8.46	93.23	43.57	0.78
Plumtree	6122	50-YR	1232.00	366.62	373.42	373.42	374.89	0.011992	10.71	167.93	75.85	0.85
Plumtree	6122	100-YR	1577.00	366.62	374.01	374.01	375.65	0.012083	11.59	204.63	79.88	0.86
Plumtree	6122	7-30-2016	1843.00	366.62	374.41	374.41	376.18	0.012227	12.21	230.18	87.73	0.88
Plumtree	6028	1-YR	164.00	365.53	369.44	368.40	369.58	0.002847	3.21	72.65	64.41	0.38
Plumtree	6028	2-YR	267.00	365.53	370.60	369.13	370.68	0.001208	2.77	163.37	92.35	0.27
Plumtree	6028	10-YR	626.00	365.53	372.49	370.10	372.59	0.000911	3.23	388.78	149.72	0.25
Plumtree	6028	50-YR	1232.00	365.53	373.67	371.11	373.82	0.001266	4.36	579.72	205.25	0.30
Plumtree	6028	100-YR	1577.00	365.53	374.19	371.59	374.38	0.001403	4.83	670.63	217.07	0.32
Plumtree	6028	7-30-2016	1843.00	365.53	374.56	371.91	374.76	0.001489	5.15	735.81	225.37	0.34
Plumtree	5926	1-YR	164.00	365.38	368.89	368.22	369.17	0.005610	4.65	48.26	29.90	0.51
Plumtree	5926	2-YR	267.00	365.38	370.35	368.74	370.51	0.002198	3.93	114.51	74.16	0.35
Plumtree	5926	10-YR	626.00	365.38	372.29	370.25	372.46	0.001701	4.50	271.75	154.50	0.33
Plumtree	5926	50-YR	1232.00	365.38	373.27	371.63	373.62	0.003033	6.65	369.62	164.48	0.45
Plumtree	5926	100-YR	1577.00	365.38	373.69	372.07	374.13	0.003711	7.65	414.12	168.72	0.50
Plumtree	5926	7-30-2016	1843.00	365.38	373.97	372.39	374.49	0.004204	8.35	445.15	171.47	0.53

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5824	1-YR	164.00	365.08	367.42	367.40	368.12	0.021412	6.67	24.58	17.25	0.99
Plumtree	5824	2-YR	267.00	365.08	370.23		370.34	0.001112	2.65	110.76	50.40	0.26
Plumtree	5824	10-YR	626.00	365.08	372.19		372.32	0.000879	3.22	324.96	158.35	0.25
Plumtree	5824	50-YR	1232.00	365.08	373.13		373.37	0.001471	4.66	478.33	168.13	0.33
Plumtree	5824	100-YR	1577.00	365.08	373.53		373.84	0.001757	5.31	546.63	172.32	0.37
Plumtree	5824	7-30-2016	1843.00	365.08	373.80		374.15	0.001964	5.77	593.78	175.18	0.39
Plumtree	5745	1-YR	164.00	363.03	367.35	365.79	367.51	0.002532	3.15	52.03	21.65	0.36
Plumtree	5745	2-YR	267.00	363.03	370.21	366.45	370.27	0.000460	2.03	147.03	66.54	0.17
Plumtree	5745	10-YR	626.00	363.03	372.14	367.99	372.26	0.000626	3.01	278.84	101.15	0.21
Plumtree	5745	50-YR	1232.00	363.03	372.91	369.74	373.25	0.001522	5.06	343.12	118.25	0.33
Plumtree	5745	100-YR	1577.00	363.03	373.17	370.50	373.66	0.002152	6.16	366.12	134.34	0.40
Plumtree	5745	7-30-2016	1843.00	363.03	373.30	371.06	373.94	0.002727	7.02	378.37	142.35	0.45
Plumtree	5711	1-YR	164.00	362.51	367.33	364.96	367.43	0.001272	2.50	65.69	22.83	0.26
Plumtree	5711	2-YR	267.00	362.51	370.21	365.70	370.26	0.000298	1.80	181.71	63.28	0.14
Plumtree	5711	10-YR	626.00	362.51	372.14	367.32	372.24	0.000469	2.78	338.13	123.53	0.18
Plumtree	5711	50-YR	1232.00	362.51	372.90	369.16	373.18	0.001173	4.70	451.95	170.27	0.29
Plumtree	5711	100-YR	1577.00	362.51	373.17	370.01	373.57	0.001646	5.69	498.43	179.46	0.35
Plumtree	5711	7-30-2016	1843.00	362.51	373.32	370.51	373.82	0.002033	6.41	525.76	182.63	0.39
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	164.00	361.81	366.23	363.90	366.30	0.000815	2.03	80.86	28.44	0.21
Plumtree	5614	2-YR	267.00	361.81	367.29	364.43	367.37	0.000818	2.36	115.89	45.07	0.22
Plumtree	5614	10-YR	626.00	361.81	371.31	365.80	371.36	0.000227	2.01	520.38	178.37	0.13
Plumtree	5614	50-YR	1232.00	361.81	372.59	367.45	372.69	0.000409	3.00	772.82	221.27	0.18
Plumtree	5614	100-YR	1577.00	361.81	373.04	368.23	373.17	0.000518	3.49	877.56	236.43	0.20
Plumtree	5614	7-30-2016	1843.00	361.81	373.20	368.68	373.37	0.000644	3.93	915.49	238.61	0.23
Plumtree	5560	1-YR	164.00	362.08	366.14		366.23	0.001353	2.47	66.27	24.12	0.26
Plumtree	5560	2-YR	267.00	362.08	367.18		367.30	0.001395	2.85	94.21	32.14	0.28
Plumtree	5560	10-YR	626.00	362.08	371.30		371.34	0.000226	1.96	676.22	273.40	0.13
Plumtree	5560	50-YR	1232.00	362.08	372.59		372.65	0.000328	2.63	1058.88	316.00	0.16
Plumtree	5560	100-YR	1577.00	362.08	373.05		373.12	0.000398	3.00	1209.00	333.91	0.17
Plumtree	5560	7-30-2016	1843.00	362.08	373.21		373.30	0.000491	3.37	1263.39	340.87	0.19
Plumtree	5510	1-YR	164.00	362.16	365.76	364.83	366.08	0.006054	4.54	36.12	16.14	0.54
Plumtree	5510	2-YR	267.00	362.16	366.78	365.54	367.16	0.005373	4.94	54.06	19.26	0.52
Plumtree	5510	10-YR	626.00	362.16	371.22	367.24	371.32	0.000574	2.91	414.87	220.73	0.20
Plumtree	5510	50-YR	1232.00	362.16	372.46	369.36	372.61	0.000864	3.99	643.12	250.18	0.25
Plumtree	5510	100-YR	1577.00	362.16	372.89	369.92	373.08	0.001049	4.55	729.55	256.28	0.28
Plumtree	5510	7-30-2016	1843.00	362.16	373.01	370.81	373.25	0.001324	5.16	753.69	257.94	0.31
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	164.00	361.52	365.68	363.87	365.84	0.002328	3.21	51.03	18.57	0.34
Plumtree	5474	2-YR	267.00	361.52	366.69	364.58	366.91	0.002509	3.75	71.22	21.56	0.36
Plumtree	5474	10-YR	626.00	361.52	371.17	366.29	371.25	0.000409	2.57	450.99	172.17	0.17
Plumtree	5474	50-YR	1232.00	361.52	372.36	368.49	372.50	0.000697	3.71	676.56	203.28	0.22
Plumtree	5474	100-YR	1577.00	361.52	372.76	369.38	372.94	0.000880	4.30	759.03	208.09	0.25
Plumtree	5474	7-30-2016	1843.00	361.52	373.00	370.09	373.21	0.001038	4.75	808.60	210.93	0.28
Plumtree	5419	1-YR	164.00	361.46	365.49	363.92	365.69	0.002972	3.57	45.92	16.90	0.38
Plumtree	5419	2-YR	267.00	361.46	366.46	364.61	366.73	0.003263	4.21	63.36	19.16	0.41
Plumtree	5419	10-YR	626.00	361.46	371.15	366.35	371.22	0.000398	2.58	465.86	191.70	0.16
Plumtree	5419	50-YR	1232.00	361.46	372.33	368.75	372.46	0.000719	3.80	663.08	221.31	0.22
Plumtree	5419	100-YR	1577.00	361.46	372.72	369.67	372.89	0.000922	4.43	734.23	225.87	0.26
Plumtree	5419	7-30-2016	1843.00	361.46	372.94	370.12	373.16	0.001099	4.92	776.19	228.41	0.28
Plumtree	5323	1-YR	164.00	361.32	365.14		365.37	0.003780	3.79	43.29	17.32	0.42
Plumtree	5323	2-YR	267.00	361.32	366.14		366.41	0.003471	4.18	75.00	52.56	0.42
Plumtree	5323	10-YR	626.00	361.32	371.15		371.19	0.000218	1.98	614.48	150.56	0.12
Plumtree	5323	50-YR	1232.00	361.32	372.31		372.39	0.000440	3.07	799.06	167.41	0.18
Plumtree	5323	100-YR	1577.00	361.32	372.69		372.80	0.000595	3.66	863.95	173.84	0.21
Plumtree	5323	7-30-2016	1843.00	361.32	372.91		373.05	0.000729	4.12	902.14	177.33	0.23
Plumtree	5209	1-YR	164.00	361.10	364.37	363.52	364.76	0.007363	5.04	32.53	13.95	0.58
Plumtree	5209	2-YR	267.00	361.10	365.44	364.27	365.88	0.005831	5.41	54.97	39.54	0.54
Plumtree	5209	10-YR	626.00	361.10	371.13	366.38	371.16	0.000178	1.89	705.08	169.35	0.11
Plumtree	5209	50-YR	1232.00	361.10	372.28	367.65	372.34	0.000360	2.92	911.12	196.58	0.16
Plumtree	5209	100-YR	1577.00	361.10	372.65	368.15	372.73	0.000499	3.52	984.19	207.31	0.19
Plumtree	5209	7-30-2016	1843.00	361.10	372.86	368.49	372.96	0.000621	3.98	1026.98	213.70	0.22
Plumtree	5107	1-YR	164.00	359.92	363.32	362.69	363.84	0.011244	5.76	28.48	13.78	0.71
Plumtree	5107	2-YR	267.00	359.92	364.96	363.58	365.30	0.005085	4.69	56.88	20.96	0.50
Plumtree	5107	10-YR	626.00	359.92	371.07	365.33	371.13	0.000280	2.30	427.37	227.77	0.14

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5107	50-YR	1232.00	359.92	372.14	367.27	372.29	0.000586	3.60	610.80	279.36	0.21
Plumtree	5107	100-YR	1577.00	359.92	372.45	367.89	372.66	0.000810	4.33	676.28	301.50	0.25
Plumtree	5107	7-30-2016	1843.00	359.92	372.61	368.34	372.87	0.001014	4.90	711.27	310.26	0.28
Plumtree	5040	1-YR	164.00	359.23	362.70	362.12	363.12	0.009314	5.23	31.34	15.99	0.66
Plumtree	5040	2-YR	267.00	359.23	364.82	362.81	365.03	0.002474	3.64	73.37	23.63	0.36
Plumtree	5040	10-YR	626.00	359.23	371.06	364.45	371.12	0.000219	2.16	519.63	232.69	0.13
Plumtree	5040	50-YR	1232.00	359.23	372.13	366.21	372.25	0.000425	3.25	797.99	285.53	0.18
Plumtree	5040	100-YR	1577.00	359.23	372.44	366.95	372.60	0.000579	3.87	888.62	306.91	0.21
Plumtree	5040	7-30-2016	1843.00	359.23	372.59	367.48	372.79	0.000716	4.35	936.75	312.43	0.24
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	164.00	359.04	361.97	361.14	362.24	0.005579	4.20	39.01	19.43	0.52
Plumtree	4932	2-YR	267.00	359.04	363.27	361.74	363.51	0.003245	3.99	66.94	23.65	0.42
Plumtree	4932	10-YR	626.00	359.04	368.43	363.21	368.57	0.000509	3.09	217.00	50.08	0.20
Plumtree	4932	50-YR	1232.00	359.04	371.99	364.85	372.12	0.000344	3.26	754.47	232.37	0.17
Plumtree	4932	100-YR	1577.00	359.04	372.36	365.60	372.53	0.000462	3.86	842.45	240.26	0.20
Plumtree	4932	7-30-2016	1843.00	359.04	372.52	366.15	372.73	0.000581	4.37	879.85	242.91	0.22
Plumtree	4845	1-YR	164.00	357.81	361.77	359.95	361.91	0.001922	2.99	54.87	19.61	0.32
Plumtree	4845	2-YR	267.00	357.81	363.12	360.58	363.28	0.001592	3.19	83.57	22.99	0.30
Plumtree	4845	10-YR	626.00	357.81	368.45	362.18	368.50	0.000227	2.06	449.24	117.60	0.13
Plumtree	4845	50-YR	1232.00	357.81	372.00	364.55	372.06	0.000188	2.38	843.47	175.26	0.12
Plumtree	4845	100-YR	1577.00	357.81	372.37	365.29	372.46	0.000269	2.91	900.16	184.85	0.15
Plumtree	4845	7-30-2016	1843.00	357.81	372.53	365.71	372.64	0.000347	3.33	924.92	188.71	0.17
Plumtree	4745	1-YR	164.00	357.45	361.59		361.71	0.001998	2.74	59.79	25.53	0.32
Plumtree	4745	2-YR	267.00	357.45	363.01		363.12	0.001238	2.63	104.91	55.12	0.26
Plumtree	4745	10-YR	626.00	357.45	368.46		368.48	0.000059	1.12	1145.50	270.77	0.07
Plumtree	4745	50-YR	1232.00	357.45	372.03		372.04	0.000041	1.18	2200.12	326.02	0.06
Plumtree	4745	100-YR	1577.00	357.45	372.41		372.43	0.000058	1.43	2326.74	334.46	0.07
Plumtree	4745	7-30-2016	1843.00	357.45	372.58		372.60	0.000075	1.64	2383.19	338.70	0.08
Plumtree	4636	1-YR	164.00	357.61	361.47		361.55	0.000985	2.28	72.07	23.50	0.23
Plumtree	4636	2-YR	267.00	357.61	362.93		363.02	0.000718	2.43	130.93	127.31	0.21
Plumtree	4636	10-YR	626.00	357.61	368.46		368.47	0.000039	0.97	1495.70	374.26	0.05
Plumtree	4636	50-YR	1232.00	357.61	372.03		372.04	0.000026	0.99	2950.26	519.06	0.05
Plumtree	4636	100-YR	1577.00	357.61	372.41		372.42	0.000037	1.19	3123.82	530.30	0.06
Plumtree	4636	7-30-2016	1843.00	357.61	372.58		372.59	0.000047	1.36	3200.47	535.22	0.06
Plumtree	4550	1-YR	164.00	357.24	361.38	359.17	361.46	0.001056	2.26	72.44	26.40	0.24
Plumtree	4550	2-YR	267.00	357.24	362.87	359.76	362.95	0.000694	2.28	123.15	92.81	0.21
Plumtree	4550	10-YR	626.00	357.24	368.42	361.20	368.46	0.000128	1.78	485.62	384.36	0.10
Plumtree	4550	50-YR	1232.00	357.24	372.03	362.89	372.03	0.000021	0.90	3238.47	498.92	0.04
Plumtree	4550	100-YR	1577.00	357.24	372.41	363.54	372.42	0.000030	1.09	3431.85	529.49	0.05
Plumtree	4550	7-30-2016	1843.00	357.24	372.58	364.01	372.59	0.000038	1.24	3517.53	572.97	0.06
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	164.00	351.69	358.98	354.48	359.00	0.000202	1.31	125.14	26.96	0.11
Plumtree	4344	2-YR	267.00	351.69	359.74	355.06	359.79	0.000344	1.83	146.27	28.15	0.14
Plumtree	4344	10-YR	626.00	351.69	361.46	356.53	361.62	0.000784	3.19	197.05	46.98	0.22
Plumtree	4344	50-YR	1232.00	351.69	362.81	358.29	363.18	0.001509	5.01	304.92	107.55	0.31
Plumtree	4344	100-YR	1577.00	351.69	363.42	359.09	363.89	0.001784	5.72	377.46	126.46	0.34
Plumtree	4344	7-30-2016	1843.00	351.69	364.05	359.65	364.54	0.001745	5.93	461.19	139.73	0.34
Plumtree	4289	1-YR	164.00	352.78	358.96		358.99	0.000213	1.27	129.57	31.85	0.11
Plumtree	4289	2-YR	267.00	352.78	359.73		359.77	0.000349	1.72	154.89	34.68	0.14
Plumtree	4289	10-YR	626.00	352.78	361.44		361.56	0.000704	2.85	229.36	62.89	0.21
Plumtree	4289	50-YR	1232.00	352.78	362.80		363.05	0.001148	4.19	401.82	156.95	0.28
Plumtree	4289	100-YR	1577.00	352.78	363.43		363.73	0.001259	4.65	505.85	172.55	0.30
Plumtree	4289	7-30-2016	1843.00	352.78	364.07		364.36	0.001161	4.71	619.67	182.42	0.29
Plumtree	4185	1-YR	149.00	354.77	358.71		358.92	0.004336	3.67	40.65	20.44	0.46
Plumtree	4185	2-YR	228.00	354.77	359.41		359.67	0.004098	4.08	55.89	22.76	0.46
Plumtree	4185	10-YR	595.00	354.77	360.86	359.76	361.37	0.005651	5.95	139.72	114.74	0.57
Plumtree	4185	50-YR	1236.00	354.77	362.49		362.85	0.003284	5.88	420.85	222.11	0.46
Plumtree	4185	100-YR	1606.00	354.77	363.24		363.54	0.002566	5.70	600.02	254.33	0.42
Plumtree	4185	7-30-2016	1998.00	354.77	363.93		364.19	0.002151	5.62	783.69	282.98	0.39
Plumtree	4033	1-YR	149.00	355.05	358.17		358.35	0.003114	3.38	44.15	19.57	0.40
Plumtree	4033	2-YR	228.00	355.05	358.87		359.11	0.003306	3.90	58.46	21.58	0.42
Plumtree	4033	10-YR	595.00	355.05	360.51		360.74	0.002445	4.47	249.59	161.69	0.38
Plumtree	4033	50-YR	1236.00	355.05	362.30		362.47	0.001495	4.43	606.35	259.42	0.32
Plumtree	4033	100-YR	1606.00	355.05	363.05		363.22	0.001409	4.65	822.09	301.15	0.32
Plumtree	4033	7-30-2016	1998.00	355.05	363.78		363.92	0.001175	4.55	1045.42	318.70	0.29

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	3930	1-YR	149.00	354.49	357.50	356.85	357.85	0.007797	4.76	31.33	16.62	0.61
Plumtree	3930	2-YR	228.00	354.49	358.18	357.40	358.61	0.006952	5.26	44.48	22.76	0.60
Plumtree	3930	10-YR	595.00	354.49	360.06	359.52	360.42	0.003771	5.58	221.56	184.47	0.48
Plumtree	3930	50-YR	1236.00	354.49	362.19	360.57	362.32	0.001265	4.25	668.36	233.31	0.30
Plumtree	3930	100-YR	1606.00	354.49	362.96	360.89	363.08	0.001115	4.31	853.86	248.97	0.29
Plumtree	3930	7-30-2016	1998.00	354.49	363.68	361.19	363.80	0.001006	4.37	1038.57	262.00	0.28
Plumtree	3816	1-YR	149.00	353.49	356.99	355.76	357.21	0.003810	3.77	40.36	22.33	0.43
Plumtree	3816	2-YR	228.00	353.49	357.75	356.32	358.01	0.003507	4.18	63.84	42.89	0.43
Plumtree	3816	10-YR	595.00	353.49	359.86	358.35	360.07	0.001956	4.46	264.40	140.18	0.35
Plumtree	3816	50-YR	1236.00	353.49	362.04	359.81	362.18	0.001090	4.23	635.17	204.22	0.28
Plumtree	3816	100-YR	1606.00	353.49	362.82	360.26	362.96	0.001025	4.39	779.31	221.85	0.27
Plumtree	3816	7-30-2016	1998.00	353.49	363.54	360.66	363.68	0.000989	4.56	914.12	230.62	0.27
Plumtree	3688	1-YR	149.00	352.86	356.61	354.99	356.79	0.002745	3.45	43.38	17.34	0.36
Plumtree	3688	2-YR	228.00	352.86	357.35	355.56	357.61	0.002846	4.07	62.77	38.74	0.38
Plumtree	3688	10-YR	595.00	352.86	359.56	357.78	359.81	0.002010	4.74	236.67	114.40	0.35
Plumtree	3688	50-YR	1236.00	352.86	361.83	359.51	362.02	0.001338	4.83	565.56	176.50	0.30
Plumtree	3688	100-YR	1606.00	352.86	362.61	360.08	362.80	0.001276	5.03	704.79	187.25	0.30
Plumtree	3688	7-30-2016	1998.00	352.86	363.34	360.54	363.54	0.001235	5.22	838.41	196.42	0.30
Plumtree	3550	1-YR	149.00	352.85	356.12	354.80	356.32	0.004292	3.58	41.61	21.02	0.45
Plumtree	3550	2-YR	228.00	352.85	356.96	355.36	357.18	0.003209	3.74	63.31	30.37	0.41
Plumtree	3550	10-YR	595.00	352.85	359.29	357.16	359.54	0.001920	4.40	205.80	95.07	0.35
Plumtree	3550	50-YR	1236.00	352.85	361.61	359.00	361.84	0.001293	4.67	479.83	149.96	0.30
Plumtree	3550	100-YR	1606.00	352.85	362.36	359.68	362.62	0.001347	5.09	580.52	163.09	0.32
Plumtree	3550	7-30-2016	1998.00	352.85	363.07	360.31	363.35	0.001389	5.46	678.66	179.46	0.33
Plumtree	3428	1-YR	149.00	351.86	355.70	354.08	355.90	0.002849	3.54	42.45	17.49	0.37
Plumtree	3428	2-YR	228.00	351.86	356.55	354.67	356.81	0.002877	4.07	60.87	25.70	0.38
Plumtree	3428	10-YR	595.00	351.86	358.83	356.77	359.24	0.002883	5.56	151.07	57.44	0.41
Plumtree	3428	50-YR	1236.00	351.86	361.10	359.04	361.59	0.002609	6.63	309.42	97.01	0.42
Plumtree	3428	100-YR	1606.00	351.86	361.73	359.73	362.34	0.003053	7.54	364.61	108.53	0.46
Plumtree	3428	7-30-2016	1998.00	351.86	362.33	360.40	363.05	0.003403	8.33	421.79	119.49	0.49
Plumtree	3296	1-YR	149.00	351.72	355.35		355.53	0.002675	3.39	44.01	15.70	0.36
Plumtree	3296	2-YR	228.00	351.72	356.17		356.41	0.003106	3.95	57.68	18.15	0.39
Plumtree	3296	10-YR	595.00	351.72	358.28		358.76	0.004618	5.58	106.83	29.02	0.50
Plumtree	3296	50-YR	1236.00	351.72	360.43		361.15	0.003986	6.97	228.30	98.52	0.50
Plumtree	3296	100-YR	1606.00	351.72	360.82	359.28	361.79	0.005149	8.26	268.89	113.19	0.58
Plumtree	3296	7-30-2016	1998.00	351.72	361.13	360.46	362.39	0.006421	9.53	306.33	125.32	0.65
Plumtree	3179	1-YR	149.00	350.39	355.09	353.49	355.21	0.002399	2.76	53.95	24.69	0.33
Plumtree	3179	2-YR	228.00	350.39	355.89	354.03	356.02	0.002912	2.93	77.75	39.13	0.37
Plumtree	3179	10-YR	595.00	350.39	358.27	355.69	358.41	0.001222	3.01	217.96	83.73	0.27
Plumtree	3179	50-YR	1236.00	350.39	360.64	357.06	360.80	0.000845	3.43	483.27	156.34	0.24
Plumtree	3179	100-YR	1606.00	350.39	361.11	357.62	361.33	0.001064	4.04	541.94	162.68	0.27
Plumtree	3179	7-30-2016	1998.00	350.39	361.53	358.15	361.81	0.001292	4.63	595.08	168.12	0.30
Plumtree	3077	1-YR	149.00	350.72	354.80		354.94	0.002966	3.00	49.65	24.33	0.37
Plumtree	3077	2-YR	228.00	350.72	355.67		355.78	0.001925	2.81	109.78	106.89	0.31
Plumtree	3077	10-YR	595.00	350.72	358.26		358.31	0.000456	2.20	504.76	181.87	0.17
Plumtree	3077	50-YR	1236.00	350.72	360.66		360.71	0.000347	2.48	974.17	222.66	0.16
Plumtree	3077	100-YR	1606.00	350.72	361.15		361.22	0.000450	2.94	1086.48	237.61	0.18
Plumtree	3077	7-30-2016	1998.00	350.72	361.58		361.67	0.000551	3.37	1192.46	248.62	0.20
Plumtree	2978	1-YR	149.00	350.53	354.54	352.58	354.67	0.002370	2.94	50.65	21.21	0.34
Plumtree	2978	2-YR	228.00	350.53	355.41	353.23	355.57	0.002322	3.14	72.69	29.31	0.34
Plumtree	2978	10-YR	595.00	350.53	358.03	355.21	358.22	0.001285	3.65	209.53	73.46	0.28
Plumtree	2978	50-YR	1236.00	350.53	360.40	356.94	360.64	0.001111	4.37	452.22	145.55	0.28
Plumtree	2978	100-YR	1606.00	350.53	360.79	357.74	361.12	0.001485	5.23	511.95	161.45	0.33
Plumtree	2978	7-30-2016	1998.00	350.53	361.12	358.39	361.55	0.001882	6.05	566.00	163.72	0.37
Plumtree	2917	1-YR	149.00	350.36	354.39	352.47	354.53	0.002328	3.03	49.23	19.35	0.33
Plumtree	2917	2-YR	228.00	350.36	355.24	353.06	355.41	0.002779	3.34	68.34	27.33	0.37
Plumtree	2917	10-YR	595.00	350.36	357.94	355.15	358.14	0.001367	3.66	195.61	77.73	0.29
Plumtree	2917	50-YR	1236.00	350.36	360.39	356.83	360.56	0.000861	3.82	636.09	258.06	0.25
Plumtree	2917	100-YR	1606.00	350.36	360.80	357.61	361.01	0.001075	4.42	744.79	279.53	0.28
Plumtree	2917	7-30-2016	1998.00	350.36	361.15	358.38	361.40	0.001293	5.00	845.96	298.13	0.31
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	149.00	350.08	354.26	353.22	354.41	0.004000	3.04	49.71	36.22	0.43
Plumtree	2827	2-YR	228.00	350.08	354.96	353.72	355.11	0.002633	3.14	77.43	67.92	0.37
Plumtree	2827	10-YR	595.00	350.08	356.10	354.97	356.49	0.004179	5.20	130.50	125.62	0.50
Plumtree	2827	50-YR	1236.00	350.08	357.27	356.30	357.66	0.003628	5.91	370.75	168.26	0.49
Plumtree	2827	100-YR	1606.00	350.08	357.74	356.76	358.19	0.003871	6.52	452.08	181.40	0.51
Plumtree	2827	7-30-2016	1998.00	350.08	358.20	357.17	358.69	0.003950	6.98	537.72	192.43	0.53

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	2759	1-YR	194.00	349.32	354.01		354.20	0.002303	3.53	60.63	38.10	0.32
Plumtree	2759	2-YR	295.00	349.32	354.65		354.90	0.002644	4.21	105.51	102.66	0.36
Plumtree	2759	10-YR	741.00	349.32	355.89		356.20	0.003356	5.61	292.40	183.88	0.42
Plumtree	2759	50-YR	1395.00	349.32	357.12		357.39	0.002978	6.04	552.04	234.40	0.41
Plumtree	2759	100-YR	1765.00	349.32	357.60		357.88	0.002992	6.34	669.71	251.48	0.41
Plumtree	2759	7-30-2016	2157.00	349.32	358.08		358.35	0.002928	6.54	793.97	267.31	0.41
Plumtree	2589	1-YR	194.00	349.71	353.61		353.74	0.002925	3.59	99.38	67.53	0.36
Plumtree	2589	2-YR	295.00	349.71	354.29		354.42	0.002643	3.83	157.33	107.81	0.35
Plumtree	2589	10-YR	741.00	349.71	355.38		355.57	0.003679	5.37	303.05	153.99	0.43
Plumtree	2589	50-YR	1395.00	349.71	356.49		356.77	0.004617	6.91	508.37	230.38	0.50
Plumtree	2589	100-YR	1765.00	349.71	357.03		357.28	0.004134	6.92	635.35	247.37	0.48
Plumtree	2589	7-30-2016	2157.00	349.71	357.55		357.79	0.003720	6.92	769.08	263.57	0.46
Plumtree	2485	1-YR	194.00	349.20	352.27	352.17	353.06	0.016590	7.27	30.07	22.59	0.85
Plumtree	2485	2-YR	295.00	349.20	352.96	352.80	353.81	0.013429	7.80	51.13	38.34	0.80
Plumtree	2485	10-YR	741.00	349.20	354.61		355.05	0.006343	7.21	240.23	152.00	0.59
Plumtree	2485	50-YR	1395.00	349.20	355.97		356.29	0.004374	7.11	476.91	195.79	0.51
Plumtree	2485	100-YR	1765.00	349.20	356.57		356.86	0.003799	7.06	596.21	203.74	0.49
Plumtree	2485	7-30-2016	2157.00	349.20	357.13		357.41	0.003453	7.11	712.00	210.83	0.47
Plumtree	2331	1-YR	194.00	348.10	351.56		351.81	0.003863	4.04	48.42	21.42	0.45
Plumtree	2331	2-YR	295.00	348.10	352.38		352.69	0.003579	4.54	73.39	64.53	0.45
Plumtree	2331	10-YR	741.00	348.10	353.98		354.35	0.003255	5.66	239.48	125.68	0.45
Plumtree	2331	50-YR	1395.00	348.10	355.28		355.71	0.003258	6.65	418.02	148.91	0.47
Plumtree	2331	100-YR	1765.00	348.10	355.84		356.30	0.003329	7.12	504.14	159.72	0.49
Plumtree	2331	7-30-2016	2157.00	348.10	356.39		356.87	0.003306	7.48	594.77	169.96	0.49
Plumtree	2153	1-YR	194.00	346.39	351.13		351.30	0.002037	3.41	61.97	21.90	0.30
Plumtree	2153	2-YR	295.00	346.39	351.90		352.15	0.002475	4.11	100.30	73.87	0.33
Plumtree	2153	10-YR	741.00	346.39	353.46		353.77	0.003077	5.44	257.98	122.71	0.38
Plumtree	2153	50-YR	1395.00	346.39	354.74		355.09	0.003391	6.47	429.96	142.84	0.42
Plumtree	2153	100-YR	1765.00	346.39	355.28		355.67	0.003548	6.93	509.05	149.50	0.43
Plumtree	2153	7-30-2016	2157.00	346.39	355.83		356.23	0.003575	7.27	593.34	156.45	0.44
Plumtree	1994	1-YR	194.00	346.45	350.69		350.92	0.002877	3.81	53.72	27.63	0.37
Plumtree	1994	2-YR	295.00	346.45	351.33		351.66	0.003627	4.72	79.90	81.53	0.42
Plumtree	1994	10-YR	741.00	346.45	352.86		353.23	0.003655	5.90	246.07	133.39	0.45
Plumtree	1994	50-YR	1395.00	346.45	354.14		354.53	0.003654	6.79	442.60	171.19	0.46
Plumtree	1994	100-YR	1765.00	346.45	354.72		355.11	0.003450	6.97	544.64	176.56	0.45
Plumtree	1994	7-30-2016	2157.00	346.45	355.30		355.68	0.003318	7.19	649.26	188.61	0.45
Plumtree	1888	1-YR	194.00	345.73	350.34	348.84	350.59	0.003215	4.17	62.39	49.34	0.40
Plumtree	1888	2-YR	295.00	345.73	351.00	349.69	351.29	0.003216	4.71	102.75	73.28	0.42
Plumtree	1888	10-YR	741.00	345.73	352.55	351.73	352.85	0.003116	5.77	278.83	135.25	0.43
Plumtree	1888	50-YR	1395.00	345.73	353.80	352.63	354.15	0.003278	6.79	464.37	160.47	0.46
Plumtree	1888	100-YR	1765.00	345.73	354.38	353.02	354.74	0.003247	7.14	560.70	170.01	0.46
Plumtree	1888	7-30-2016	2157.00	345.73	354.96	353.34	355.33	0.003190	7.44	661.28	180.95	0.47
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	194.00	346.61	350.25		350.35	0.001595	2.87	108.32	72.27	0.29
Plumtree	1830	2-YR	295.00	346.61	350.92		351.02	0.001553	3.13	163.67	98.15	0.30
Plumtree	1830	10-YR	741.00	346.61	352.47		352.60	0.001499	3.92	375.28	152.68	0.31
Plumtree	1830	50-YR	1395.00	346.61	353.67		353.86	0.001791	4.96	562.31	157.05	0.35
Plumtree	1830	100-YR	1765.00	346.61	354.21		354.42	0.001949	5.47	646.65	160.33	0.37
Plumtree	1830	7-30-2016	2157.00	346.61	354.74		354.99	0.002076	5.94	733.31	165.72	0.39
Plumtree	1641	1-YR	194.00	345.19	349.67		349.90	0.003214	4.03	60.67	31.21	0.39
Plumtree	1641	2-YR	295.00	345.19	350.10		350.47	0.004626	5.24	79.12	65.80	0.48
Plumtree	1641	10-YR	741.00	345.19	351.34		351.94	0.006536	7.53	195.70	116.71	0.60
Plumtree	1641	50-YR	1395.00	345.19	352.60		353.18	0.005962	8.36	365.80	148.16	0.59
Plumtree	1641	100-YR	1765.00	345.19	353.18		353.74	0.005567	8.58	455.21	157.83	0.58
Plumtree	1641	7-30-2016	2157.00	345.19	353.80		354.33	0.004984	8.60	556.44	167.82	0.56
Plumtree	1463	1-YR	194.00	343.35	349.50		349.57	0.000925	2.19	108.95	98.09	0.22
Plumtree	1463	2-YR	295.00	343.35	349.89		350.00	0.001284	2.79	151.37	117.70	0.26
Plumtree	1463	10-YR	741.00	343.35	350.98		351.20	0.002198	4.35	296.10	147.91	0.35
Plumtree	1463	50-YR	1395.00	343.35	352.13		352.42	0.002596	5.46	484.84	181.84	0.40
Plumtree	1463	100-YR	1765.00	343.35	352.72		353.03	0.002525	5.74	596.80	195.20	0.40
Plumtree	1463	7-30-2016	2157.00	343.35	353.39		353.69	0.002250	5.80	732.26	206.47	0.38
Plumtree	1291	1-YR	408.00	344.26	349.04		349.21	0.003520	4.08	193.90	220.05	0.41
Plumtree	1291	2-YR	581.00	344.26	349.38		349.56	0.003912	4.59	270.83	239.14	0.44
Plumtree	1291	10-YR	1316.00	344.26	350.50		350.68	0.003558	5.29	588.35	314.30	0.44
Plumtree	1291	50-YR	2351.00	344.26	351.76		351.92	0.002747	5.47	1032.24	396.89	0.40
Plumtree	1291	100-YR	2995.00	344.26	352.42		352.57	0.002276	5.35	1304.94	413.55	0.37

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	1291	7-30-2016	3782.00	344.26	353.15		353.29	0.001931	5.29	1608.39	422.07	0.35
Plumtree	1124	1-YR	408.00	343.58	348.35		348.57	0.004100	4.55	207.91	243.41	0.46
Plumtree	1124	2-YR	581.00	343.58	348.81		348.96	0.003188	4.30	323.04	261.49	0.41
Plumtree	1124	10-YR	1316.00	343.58	350.07		350.19	0.002297	4.40	663.42	281.73	0.36
Plumtree	1124	50-YR	2351.00	343.58	351.41		351.53	0.001865	4.71	1061.23	311.21	0.34
Plumtree	1124	100-YR	2995.00	343.58	352.10		352.23	0.001742	4.91	1282.29	325.49	0.34
Plumtree	1124	7-30-2016	3782.00	343.58	352.85		352.99	0.001658	5.14	1529.32	337.57	0.33
Plumtree	994	1-YR	408.00	342.85	347.96		348.08	0.003020	3.47	217.30	183.00	0.39
Plumtree	994	2-YR	581.00	342.85	348.47		348.58	0.002459	3.40	320.58	206.46	0.36
Plumtree	994	10-YR	1316.00	342.85	349.75		349.89	0.002182	4.09	602.67	235.38	0.36
Plumtree	994	50-YR	2351.00	342.85	351.11		351.28	0.001954	4.70	947.57	271.54	0.36
Plumtree	994	100-YR	2995.00	342.85	351.81		351.99	0.001883	5.01	1142.33	288.19	0.36
Plumtree	994	7-30-2016	3782.00	342.85	352.55		352.75	0.001825	5.33	1363.37	303.86	0.36
Plumtree	911	1-YR	408.00	342.92	347.65		347.82	0.003134	4.12	214.38	193.54	0.40
Plumtree	911	2-YR	581.00	342.92	348.27		348.39	0.002179	3.76	340.96	213.59	0.34
Plumtree	911	10-YR	1316.00	342.92	349.59		349.71	0.002009	4.41	638.16	239.09	0.35
Plumtree	911	50-YR	2351.00	342.92	350.96		351.11	0.001899	5.04	992.45	273.53	0.35
Plumtree	911	100-YR	2995.00	342.92	351.66		351.83	0.001852	5.33	1190.22	288.71	0.35
Plumtree	911	7-30-2016	3782.00	342.92	352.42		352.60	0.001816	5.65	1413.08	303.31	0.36
Plumtree	762	1-YR	408.00	342.54	347.00		347.27	0.004547	4.67	123.45	66.72	0.49
Plumtree	762	2-YR	581.00	342.54	347.52		347.89	0.005295	5.60	187.99	161.19	0.55
Plumtree	762	10-YR	1316.00	342.54	349.12		349.36	0.002899	5.41	528.88	242.04	0.43
Plumtree	762	50-YR	2351.00	342.54	350.58		350.81	0.002265	5.70	912.56	281.55	0.40
Plumtree	762	100-YR	2995.00	342.54	351.31		351.54	0.002109	5.91	1124.41	300.48	0.39
Plumtree	762	7-30-2016	3782.00	342.54	352.09		352.32	0.001979	6.14	1363.28	314.67	0.39
Plumtree	658	1-YR	408.00	340.20	346.92		347.04	0.000944	2.81	191.04	174.69	0.24
Plumtree	658	2-YR	581.00	340.20	347.48		347.62	0.001039	3.21	302.33	225.88	0.26
Plumtree	658	10-YR	1316.00	340.20	349.02		349.16	0.001028	3.84	730.33	301.02	0.27
Plumtree	658	50-YR	2351.00	340.20	350.49		350.64	0.000974	4.29	1193.92	328.76	0.27
Plumtree	658	100-YR	2995.00	340.20	351.22		351.38	0.000975	4.56	1438.89	345.31	0.27
Plumtree	658	7-30-2016	3782.00	340.20	351.99		352.16	0.000985	4.86	1712.84	363.75	0.28
Plumtree	526	1-YR	408.00	341.63	346.78		346.90	0.001213	2.99	267.08	264.39	0.26
Plumtree	526	2-YR	581.00	341.63	347.38		347.47	0.000981	2.94	428.29	278.77	0.24
Plumtree	526	10-YR	1316.00	341.63	348.94		349.02	0.000822	3.28	891.18	311.73	0.23
Plumtree	526	50-YR	2351.00	341.63	350.41		350.50	0.000804	3.74	1371.74	340.24	0.24
Plumtree	526	100-YR	2995.00	341.63	351.14		351.24	0.000812	3.99	1623.66	352.63	0.24
Plumtree	526	7-30-2016	3782.00	341.63	351.91		352.02	0.000828	4.27	1900.65	365.72	0.25
Plumtree	380	1-YR	408.00	341.92	346.39		346.63	0.002737	4.07	136.62	138.09	0.39
Plumtree	380	2-YR	581.00	341.92	347.04	345.26	347.25	0.002220	4.07	255.24	192.08	0.36
Plumtree	380	10-YR	1316.00	341.92	348.66		348.84	0.001693	4.47	590.20	219.66	0.33
Plumtree	380	50-YR	2351.00	341.92	350.13		350.33	0.001622	5.11	923.92	236.20	0.34
Plumtree	380	100-YR	2995.00	341.92	350.84		351.06	0.001632	5.46	1094.45	241.67	0.35
Plumtree	380	7-30-2016	3782.00	341.92	351.59		351.84	0.001669	5.88	1277.89	247.14	0.36
Plumtree	146	1-YR	408.00	340.73	343.98	343.98	345.17	0.019900	8.74	46.71	19.97	1.01
Plumtree	146	2-YR	581.00	340.73	344.79	344.79	346.05	0.015185	9.06	69.34	43.36	0.92
Plumtree	146	10-YR	1316.00	340.73	346.75	346.75	347.96	0.009277	9.88	226.83	111.86	0.78
Plumtree	146	50-YR	2351.00	340.73	348.05	348.05	349.45	0.009370	11.57	391.46	141.74	0.81
Plumtree	146	100-YR	2995.00	340.73	348.63	348.63	350.16	0.009716	12.50	477.06	153.62	0.84
Plumtree	146	7-30-2016	3782.00	340.73	349.23	349.23	350.91	0.010101	13.47	572.07	164.30	0.87
Plumtree	63	1-YR	408.00	340.00	343.55	342.21	343.79	0.003500	3.88	105.20	43.59	0.44
Plumtree	63	2-YR	581.00	340.00	344.18	342.75	344.47	0.003507	4.34	134.24	50.01	0.45
Plumtree	63	10-YR	1316.00	340.00	345.91	344.22	346.45	0.003506	5.95	247.63	84.16	0.49
Plumtree	63	50-YR	2351.00	340.00	347.54	345.72	348.29	0.003501	7.28	427.06	127.03	0.52
Plumtree	63	100-YR	2995.00	340.00	348.33	346.61	349.17	0.003500	7.89	532.16	139.56	0.53
Plumtree	63	7-30-2016	3782.00	340.00	349.16	347.39	350.11	0.003503	8.50	652.88	150.66	0.54

HEC-RAS Plan: D River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	10286	1-YR	396.90	396.81	0.09	2.35	0.01	2.21	100.81	119.97	150.01	0.48
Plumtree	10286	2-YR	397.10	396.98	0.12	2.33	0.01	4.42	135.53	167.05	154.15	0.59
Plumtree	10286	10-YR	397.76	397.61	0.15	2.52	0.03	19.19	248.06	328.76	169.55	0.71
Plumtree	10286	50-YR	398.27	398.01	0.26	2.49	0.01	43.78	402.92	548.31	179.33	1.14
Plumtree	10286	100-YR	398.46	398.12	0.34	2.39	0.00	57.95	481.79	660.25	180.10	1.46
Plumtree	10286	7-30-2016	398.58	398.20	0.38	2.30	0.02	68.34	532.05	732.61	180.66	1.64
Plumtree	10044	1-YR	394.55	394.38	0.18	2.60	0.01		152.30	70.70	160.05	0.73
Plumtree	10044	2-YR	394.76	394.57	0.19	2.43	0.01		195.94	111.06	181.74	0.80
Plumtree	10044	10-YR	395.21	394.81	0.41	0.61	0.10	0.00	352.99	243.01	200.40	1.68
Plumtree	10044	50-YR	395.77	395.39	0.38	0.37	0.10	0.61	514.78	479.61	234.35	1.57
Plumtree	10044	100-YR	396.07	395.74	0.34	0.37	0.08	1.81	583.55	614.64	255.67	1.37
Plumtree	10044	7-30-2016	396.26	395.95	0.32	0.37	0.07	2.89	627.52	702.59	268.46	1.29
Plumtree	9814	1-YR	391.94	391.65	0.29	0.64	0.02		223.00		43.53	0.79
Plumtree	9814	2-YR	392.32	392.01	0.31	0.55	0.01	0.00	307.00		52.13	0.83
Plumtree	9814	10-YR	394.04	393.97	0.08	0.04	0.01	25.02	446.62	124.36	272.22	0.20
Plumtree	9814	50-YR	395.30	395.24	0.06	0.03	0.00	75.79	606.58	312.63	304.39	0.16
Plumtree	9814	100-YR	395.62	395.55	0.07	0.03	0.00	98.45	706.39	395.16	315.10	0.19
Plumtree	9814	7-30-2016	395.82	395.75	0.07	0.03	0.00	113.34	765.72	453.95	317.79	0.20
Plumtree	9762	1-YR	391.29	390.84	0.45	0.16	0.09		223.00		30.27	1.18
Plumtree	9762	2-YR	391.76	391.35	0.41	0.15	0.07		303.99	3.01	69.10	1.05
Plumtree	9762	10-YR	394.00	393.94	0.05	0.02	0.01	13.36	401.79	180.85	228.01	0.14
Plumtree	9762	50-YR	395.27	395.21	0.06	0.02	0.01	47.85	598.78	348.37	286.89	0.16
Plumtree	9762	100-YR	395.59	395.52	0.07	0.02	0.01	63.60	697.60	438.80	322.86	0.19
Plumtree	9762	7-30-2016	395.79	395.71	0.08	0.02	0.01	76.36	777.04	479.60	331.68	0.22
Plumtree	9732	1-YR	391.03	390.89	0.15				223.00		34.50	0.34
Plumtree	9732	2-YR	391.54	391.35	0.19				307.00		37.47	0.41
Plumtree	9732	10-YR	393.96	393.80	0.16			3.48	589.52	2.99	166.87	0.28
Plumtree	9732	50-YR	395.24	395.11	0.14			35.62	777.35	182.03	223.95	0.28
Plumtree	9732	100-YR	395.56	395.40	0.16			49.77	900.87	249.35	235.24	0.33
Plumtree	9732	7-30-2016	395.76	395.59	0.17			60.62	974.97	297.41	241.96	0.37
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	389.52	389.31	0.21	0.36	0.02	0.20	222.44	0.37	35.83	0.49
Plumtree	9589	2-YR	390.20	389.99	0.21	0.26	0.02	1.69	303.05	2.26	43.20	0.46
Plumtree	9589	10-YR	391.43	391.04	0.39	0.26	0.09	6.73	579.96	9.31	63.32	0.76
Plumtree	9589	50-YR	392.59	392.07	0.52	0.25	0.15	71.72	891.33	31.95	135.97	1.01
Plumtree	9589	100-YR	393.12	392.60	0.52	0.23	0.14	109.22	1018.77	72.02	245.13	1.03
Plumtree	9589	7-30-2016	393.38	392.89	0.49	0.22	0.12	135.67	1074.75	122.59	267.37	1.01
Plumtree	9499	1-YR	389.15	388.97	0.18	0.44	0.01		186.11	17.89	50.97	0.45
Plumtree	9499	2-YR	389.92	389.75	0.17	0.44	0.04	0.93	271.86	48.21	124.78	0.44
Plumtree	9499	10-YR	391.08	390.88	0.20	0.31	0.01	83.22	476.71	159.07	158.77	0.56
Plumtree	9499	50-YR	392.20	391.97	0.23	0.26	0.00	241.62	702.09	319.29	171.09	0.65
Plumtree	9499	100-YR	392.74	392.51	0.24	0.25	0.00	342.65	822.44	412.91	175.97	0.70
Plumtree	9499	7-30-2016	393.03	392.79	0.25	0.25	0.00	401.05	889.30	466.65	178.49	0.72
Plumtree	9398	1-YR	388.70	388.37	0.32	0.34	0.03		204.00		15.87	0.70
Plumtree	9398	2-YR	389.45	388.92	0.53	0.52	0.04	3.60	316.02	1.38	97.70	1.12
Plumtree	9398	10-YR	390.76	390.45	0.31	0.53	0.06	157.50	444.27	117.23	167.13	0.89
Plumtree	9398	50-YR	391.93	391.67	0.26	0.48	0.09	396.08	581.21	285.71	182.79	0.89
Plumtree	9398	100-YR	392.49	392.22	0.27	0.48	0.10	541.61	663.78	372.61	192.69	0.94
Plumtree	9398	7-30-2016	392.78	392.51	0.27	0.48	0.11	624.90	706.22	425.88	196.97	0.96
Plumtree	9301	1-YR	388.33	388.11	0.22	0.49	0.02	6.54	197.46		32.60	0.46
Plumtree	9301	2-YR	388.89	388.50	0.39	0.69	0.01	18.16	300.68	2.16	69.83	0.83
Plumtree	9301	10-YR	390.17	389.23	0.94	0.82	0.18	67.49	595.00	56.51	91.28	2.11
Plumtree	9301	50-YR	391.36	390.17	1.19	0.82	0.25	159.72	881.60	221.69	100.36	2.94
Plumtree	9301	100-YR	391.91	390.59	1.32	0.82	0.28	218.07	1030.05	329.88	104.50	3.34
Plumtree	9301	7-30-2016	392.19	390.79	1.40	0.83	0.30	251.64	1114.14	391.22	106.44	3.61
Plumtree	9196	1-YR	387.81	387.40	0.42	0.89	0.09	21.05	181.15	1.80	107.80	1.13
Plumtree	9196	2-YR	388.20	387.74	0.46	0.95	0.09	70.58	241.26	9.16	121.59	1.38
Plumtree	9196	10-YR	389.17	388.82	0.34	0.95	0.03	283.70	363.76	71.53	143.82	1.26
Plumtree	9196	50-YR	390.16	389.79	0.37	1.02	0.01	567.90	521.03	174.06	154.81	1.43
Plumtree	9196	100-YR	390.64	390.24	0.39	1.05	0.00	735.39	607.63	234.98	159.38	1.54
Plumtree	9196	7-30-2016	390.89	390.48	0.41	1.07	0.00	831.04	655.76	270.20	161.92	1.59
Plumtree	8987	1-YR	386.67	386.54	0.13	0.98	0.03	16.01	152.73	35.26	115.30	0.37
Plumtree	8987	2-YR	387.15	387.00	0.15	1.05	0.03	36.74	203.26	81.00	121.03	0.47
Plumtree	8987	10-YR	388.19	387.95	0.23	1.10	0.01	116.82	356.06	246.12	132.81	0.80
Plumtree	8987	50-YR	389.13	388.79	0.34	1.03	0.03	243.69	538.75	480.56	141.71	1.22
Plumtree	8987	100-YR	389.58	389.19	0.39	0.98	0.05	323.10	636.32	618.58	145.45	1.43
Plumtree	8987	7-30-2016	389.82	389.40	0.42	0.95	0.06	369.48	689.99	697.53	147.40	1.54
Plumtree	8753	1-YR	385.66	385.24	0.42	1.15	0.07	44.58	157.65	1.76	79.52	1.22

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	8753	2-YR	386.06	385.62	0.45	1.05	0.08	109.65	203.90	7.45	87.32	1.46
Plumtree	8753	10-YR	387.08	386.73	0.35	0.85	0.04	388.16	295.62	35.22	174.86	1.42
Plumtree	8753	50-YR	388.07	387.83	0.24	0.72	0.00	838.10	358.54	66.36	231.04	1.17
Plumtree	8753	100-YR	388.55	388.33	0.22	0.67	0.01	1114.25	384.34	79.40	245.93	1.08
Plumtree	8753	7-30-2016	388.80	388.59	0.21	0.64	0.01	1259.31	397.65	100.04	251.24	1.04
Plumtree	8579	1-YR	384.40	384.21	0.19	0.49	0.03	52.18	145.55	6.26	90.48	0.60
Plumtree	8579	2-YR	384.94	384.75	0.19	0.51	0.02	108.00	190.09	22.91	101.78	0.62
Plumtree	8579	10-YR	386.19	385.97	0.22	0.57	0.01	294.81	326.95	97.24	121.09	0.80
Plumtree	8579	50-YR	387.34	387.05	0.29	0.67	0.00	554.02	500.11	208.87	143.41	1.08
Plumtree	8579	100-YR	387.87	387.55	0.33	0.71	0.00	703.84	588.35	285.81	151.07	1.20
Plumtree	8579	7-30-2016	388.15	387.81	0.34	0.72	0.00	791.63	635.54	329.83	154.43	1.26
Plumtree	8374	1-YR	383.88	383.79	0.09	0.45	0.04	54.74	149.26		87.23	0.24
Plumtree	8374	2-YR	384.40	384.29	0.11	0.48	0.03	112.10	208.90		94.20	0.33
Plumtree	8374	10-YR	385.60	385.42	0.19	0.58	0.03	329.51	388.54	0.96	111.54	0.57
Plumtree	8374	50-YR	386.67	386.39	0.29	0.67	0.03	646.21	607.80	9.00	123.87	0.88
Plumtree	8374	100-YR	387.17	386.83	0.34	0.71	0.03	834.08	727.45	16.47	130.00	1.05
Plumtree	8374	7-30-2016	387.42	387.05	0.37	0.74	0.03	941.50	793.82	21.68	133.64	1.14
Plumtree	8229	1-YR	383.38	382.85	0.53	1.17	0.04	31.07	165.38	7.55	65.24	1.44
Plumtree	8229	2-YR	383.89	383.45	0.44	1.22	0.02	87.03	206.90	27.07	86.73	1.37
Plumtree	8229	10-YR	385.00	384.50	0.50	1.29	0.02	267.02	335.99	115.98	116.52	1.84
Plumtree	8229	50-YR	385.97	385.40	0.57	1.39	0.03	519.16	473.34	270.50	136.34	2.30
Plumtree	8229	100-YR	386.43	385.82	0.61	1.44	0.03	668.78	542.25	366.97	142.15	2.51
Plumtree	8229	7-30-2016	386.65	386.02	0.64	1.46	0.03	753.29	582.19	421.52	144.93	2.67
Plumtree	8094	1-YR	382.12	381.72	0.40	0.90	0.09	12.66	189.36	1.97	63.22	0.98
Plumtree	8094	2-YR	382.66	382.06	0.59	1.08	0.14	38.77	271.27	10.95	93.32	1.51
Plumtree	8094	10-YR	383.69	382.97	0.72	1.25	0.16	165.12	445.07	108.81	125.63	2.22
Plumtree	8094	50-YR	384.56	383.69	0.87	1.39	0.19	351.85	630.88	280.28	145.63	3.00
Plumtree	8094	100-YR	384.96	384.01	0.95	1.44	0.20	461.02	727.35	389.63	153.05	3.42
Plumtree	8094	7-30-2016	385.16	384.19	0.97	1.45	0.20	527.26	774.79	454.95	157.07	3.56
Plumtree	7954	1-YR	381.13	381.03	0.10	1.20	0.01	84.35	76.39	43.27	155.83	0.58
Plumtree	7954	2-YR	381.43	381.31	0.12	1.25	0.01	135.00	100.37	85.63	160.64	0.72
Plumtree	7954	10-YR	382.18	382.00	0.18	1.32	0.01	301.73	173.18	244.10	176.81	1.12
Plumtree	7954	50-YR	382.91	382.67	0.24	1.32	0.01	547.72	255.56	459.72	187.44	1.49
Plumtree	7954	100-YR	383.28	383.00	0.27	1.31	0.01	692.79	299.98	585.23	192.59	1.66
Plumtree	7954	7-30-2016	383.47	383.18	0.29	1.30	0.01	776.04	324.42	656.54	195.27	1.75
Plumtree	7800	1-YR	379.92	379.84	0.08	1.26	0.01	47.75	51.02	105.23	173.24	0.64
Plumtree	7800	2-YR	380.17	380.07	0.10	1.20	0.02	79.11	73.26	168.63	178.65	0.79
Plumtree	7800	10-YR	380.86	380.70	0.16	1.10	0.03	194.56	142.39	382.05	188.75	1.10
Plumtree	7800	50-YR	381.59	381.37	0.22	1.01	0.05	361.02	231.67	670.30	199.53	1.40
Plumtree	7800	100-YR	381.96	381.71	0.25	1.00	0.05	460.92	281.67	835.41	205.01	1.53
Plumtree	7800	7-30-2016	382.16	381.90	0.26	0.96	0.06	518.81	309.55	928.63	208.02	1.59
Plumtree	7548	1-YR	378.65	378.60	0.05	0.91	0.00	45.79	61.91	96.30	273.00	0.33
Plumtree	7548	2-YR	378.95	378.91	0.05	0.87	0.00	103.55	74.97	142.48	279.96	0.35
Plumtree	7548	10-YR	379.72	379.67	0.05	0.71	0.00	318.10	113.76	287.14	298.60	0.43
Plumtree	7548	50-YR	380.54	380.47	0.07	0.57	0.00	626.20	157.96	478.84	313.07	0.49
Plumtree	7548	100-YR	380.91	380.84	0.07	0.49	0.00	805.59	182.86	589.54	318.00	0.53
Plumtree	7548	7-30-2016	381.14	381.06	0.08	0.44	0.01	909.85	195.60	651.56	320.95	0.54
Plumtree	7367	1-YR	377.74	377.68	0.06	0.61	0.01	0.60		203.40	116.88	
Plumtree	7367	2-YR	378.08	378.00	0.08	0.64	0.01	8.21		312.79	149.00	
Plumtree	7367	10-YR	379.01	378.92	0.09	0.34	0.01	92.47	3.24	623.29	233.97	0.15
Plumtree	7367	50-YR	379.97	379.90	0.07	0.28	0.00	285.00	28.05	949.95	398.03	0.29
Plumtree	7367	100-YR	380.41	380.35	0.06	0.25	0.00	423.43	43.66	1110.92	407.78	0.31
Plumtree	7367	7-30-2016	380.69	380.63	0.06	0.22	0.00	505.29	52.89	1198.82	412.79	0.30
Plumtree	7216	1-YR	377.12	377.08	0.04	0.83	0.02	57.13	127.74	19.12	193.23	0.15
Plumtree	7216	2-YR	377.43	377.38	0.05	0.92	0.03	92.39	190.89	37.72	210.45	0.20
Plumtree	7216	10-YR	378.66	378.61	0.05	0.20	0.00	222.56	365.66	130.78	263.76	0.18
Plumtree	7216	50-YR	379.69	379.63	0.07	0.20	0.00	407.57	589.67	265.76	295.66	0.22
Plumtree	7216	100-YR	380.16	380.09	0.07	0.20	0.00	520.13	713.42	344.45	308.96	0.25
Plumtree	7216	7-30-2016	380.47	380.39	0.08	0.20	0.00	590.38	777.53	389.08	315.32	0.25
Plumtree	7030	1-YR	376.26	376.01	0.25	1.09	0.02	113.17	83.09	7.73	153.12	1.42
Plumtree	7030	2-YR	376.50	376.17	0.32	0.62	0.07	195.29	109.54	16.17	158.76	1.98
Plumtree	7030	10-YR	378.45	378.42	0.04	0.06	0.00	506.57	98.04	114.39	220.55	0.25
Plumtree	7030	50-YR	379.49	379.44	0.05	0.09	0.00	889.34	147.51	226.15	234.03	0.33
Plumtree	7030	100-YR	379.96	379.89	0.06	0.10	0.00	1121.60	176.86	279.54	245.16	0.39
Plumtree	7030	7-30-2016	380.27	380.20	0.07	0.10	0.00	1252.92	193.04	311.04	255.73	0.41
Plumtree	6893	1-YR	374.36	374.18	0.18	0.71	0.01	48.20	153.22	2.57	108.43	0.56
Plumtree	6893	2-YR	375.15	375.05	0.09	0.17	0.01	131.35	177.23	12.41	143.64	0.32
Plumtree	6893	10-YR	378.39	378.37	0.02	0.02	0.00	406.03	224.99	87.99	226.88	0.09
Plumtree	6893	50-YR	379.40	379.36	0.04	0.04	0.00	736.57	358.43	168.01	245.81	0.16

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	6893	100-YR	379.86	379.81	0.05	0.05	0.00	930.24	431.31	216.45	254.13	0.20
Plumtree	6893	7-30-2016	380.16	380.11	0.05	0.05	0.00	1042.89	468.69	245.42	259.49	0.22
Plumtree	6766	1-YR	373.64	373.41	0.23	0.51	0.00	27.38	176.41	0.21	93.23	0.67
Plumtree	6766	2-YR	374.97	374.91	0.06	0.08	0.00	119.93	192.31	8.76	144.06	0.18
Plumtree	6766	10-YR	378.36	378.34	0.02	0.01	0.00	356.51	265.23	97.26	272.23	0.06
Plumtree	6766	50-YR	379.36	379.33	0.03	0.02	0.00	632.60	431.59	198.81	320.00	0.12
Plumtree	6766	100-YR	379.81	379.76	0.04	0.03	0.00	802.00	520.98	255.02	344.04	0.15
Plumtree	6766	7-30-2016	380.11	380.07	0.04	0.03	0.00	893.70	563.58	299.72	354.70	0.16
Plumtree	6663	1-YR	373.13	372.89	0.24	0.33	0.01	3.66	200.34		58.01	0.53
Plumtree	6663	2-YR	374.89	374.83	0.06	0.05	0.01	105.83	208.73	6.43	169.98	0.15
Plumtree	6663	10-YR	378.35	378.33	0.01	0.01	0.00	354.16	248.32	116.52	322.49	0.05
Plumtree	6663	50-YR	379.33	379.31	0.03	0.02	0.00	639.81	377.90	245.29	342.69	0.10
Plumtree	6663	100-YR	379.77	379.74	0.03	0.02	0.00	804.74	447.51	325.75	351.34	0.12
Plumtree	6663	7-30-2016	380.08	380.04	0.03	0.03	0.00	900.44	481.28	375.28	357.11	0.13
Plumtree	6568	1-YR	372.79	372.57	0.21	0.40	0.01	9.31	154.69		46.93	0.49
Plumtree	6568	2-YR	374.83	374.80	0.04	0.05	0.00	93.86	145.51	27.63	152.47	0.12
Plumtree	6568	10-YR	378.33	378.32	0.01	0.01	0.00	318.63	167.43	139.94	275.41	0.05
Plumtree	6568	50-YR	379.31	379.29	0.02	0.02	0.00	654.87	287.30	289.84	297.86	0.11
Plumtree	6568	100-YR	379.75	379.72	0.03	0.03	0.00	846.24	350.33	380.43	310.31	0.15
Plumtree	6568	7-30-2016	380.05	380.01	0.04	0.04	0.00	992.74	397.46	452.80	320.06	0.18
Plumtree	6454	1-YR	372.38	372.18	0.19	0.22	0.03	0.18	163.44	0.38	31.07	0.46
Plumtree	6454	2-YR	374.79	374.75	0.04	0.04	0.00	34.57	193.21	39.22	162.41	0.09
Plumtree	6454	10-YR	378.32	378.31	0.01	0.01	0.00	116.55	254.43	255.02	226.90	0.04
Plumtree	6454	50-YR	379.29	379.25	0.03	0.03	0.01	242.51	458.66	530.83	261.13	0.11
Plumtree	6454	100-YR	379.72	379.67	0.05	0.04	0.01	318.55	567.28	691.17	276.52	0.15
Plumtree	6454	7-30-2016	380.01	379.95	0.06	0.05	0.01	378.31	648.92	815.77	288.52	0.18
Plumtree	6350	1-YR	372.13	372.04	0.09	0.09	0.01		164.00		24.41	0.20
Plumtree	6350	2-YR	374.75	374.70	0.05	0.02	0.00	3.72	260.55	2.73	57.21	0.09
Plumtree	6350	10-YR	378.31	378.26	0.05	0.01	0.00	109.67	480.06	36.26	211.75	0.09
Plumtree	6350	50-YR	379.25	379.13	0.12	0.03	0.01	262.82	868.86	100.32	250.10	0.23
Plumtree	6350	100-YR	379.67	379.51	0.16	0.05	0.01	363.27	1069.91	143.82	266.08	0.32
Plumtree	6350	7-30-2016	379.95	379.76	0.19	0.05	0.01	448.61	1215.12	179.27	274.70	0.39
Plumtree	6296	1-YR	372.03	371.87	0.16			19.91	144.09	0.00	25.46	0.38
Plumtree	6296	2-YR	374.72	374.65	0.08			61.28	199.05	6.67	43.58	0.17
Plumtree	6296	10-YR	378.29	378.21	0.07			223.31	357.35	45.34	151.06	0.18
Plumtree	6296	50-YR	379.21	379.01	0.20			510.80	650.58	70.62	207.24	0.51
Plumtree	6296	100-YR	379.61	379.35	0.26			680.47	792.48	104.05	234.96	0.70
Plumtree	6296	7-30-2016	379.88	379.57	0.31			811.67	894.82	136.51	250.48	0.85
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	370.58	370.54	0.05	0.10	0.20	0.06	163.93	0.02	29.30	0.09
Plumtree	6197	2-YR	371.58	371.50	0.07	0.12	0.24	0.78	265.87	0.35	32.05	0.14
Plumtree	6197	10-YR	373.49	373.29	0.20	0.17	0.25	7.77	614.45	3.79	37.12	0.33
Plumtree	6197	50-YR	375.44	374.99	0.45	0.25	0.30	24.03	1194.06	13.91	53.57	0.70
Plumtree	6197	100-YR	376.25	375.64	0.61	0.29	0.31	38.80	1512.15	26.05	70.63	0.94
Plumtree	6197	7-30-2016	376.82	376.09	0.73	0.32	0.31	58.81	1744.90	39.29	82.52	1.10
Plumtree	6122	1-YR	370.28	369.58	0.70	0.53	0.17		164.00		11.65	1.72
Plumtree	6122	2-YR	371.22	370.34	0.88	0.29	0.24		267.00		17.64	2.13
Plumtree	6122	10-YR	373.08	372.06	1.02	0.21	0.28	16.72	569.15	40.13	43.57	2.22
Plumtree	6122	50-YR	374.89	373.42	1.47	0.27	0.39	103.55	991.37	137.08	75.85	3.20
Plumtree	6122	100-YR	375.65	374.01	1.64	0.30	0.44	180.22	1199.06	197.72	79.88	3.61
Plumtree	6122	7-30-2016	376.18	374.41	1.77	0.31	0.47	242.48	1353.80	246.72	87.73	3.91
Plumtree	6028	1-YR	369.58	369.44	0.14	0.40	0.01	22.39	140.89	0.72	64.41	0.37
Plumtree	6028	2-YR	370.68	370.60	0.09	0.16	0.01	74.04	184.92	8.04	92.35	0.24
Plumtree	6028	10-YR	372.59	372.49	0.09	0.12	0.01	236.21	336.98	52.81	149.72	0.28
Plumtree	6028	50-YR	373.82	373.67	0.15	0.19	0.02	541.44	555.84	134.72	205.25	0.47
Plumtree	6028	100-YR	374.38	374.19	0.18	0.22	0.03	724.40	666.25	186.35	217.07	0.57
Plumtree	6028	7-30-2016	374.76	374.56	0.20	0.24	0.03	865.15	746.82	231.03	225.37	0.63
Plumtree	5926	1-YR	369.17	368.89	0.27	1.01	0.04	34.97	128.83	0.20	29.90	0.76
Plumtree	5926	2-YR	370.51	370.35	0.17	0.16	0.02	79.02	171.00	16.98	74.16	0.47
Plumtree	5926	10-YR	372.46	372.29	0.17	0.12	0.01	198.74	290.01	137.25	154.50	0.53
Plumtree	5926	50-YR	373.62	373.27	0.35	0.21	0.03	378.55	499.78	353.67	164.48	1.11
Plumtree	5926	100-YR	374.13	373.69	0.44	0.25	0.04	477.15	609.50	490.35	168.72	1.44
Plumtree	5926	7-30-2016	374.49	373.97	0.52	0.28	0.05	551.59	690.69	600.72	171.47	1.69
Plumtree	5824	1-YR	368.12	367.42	0.69	0.44	0.16		164.00		17.25	1.82
Plumtree	5824	2-YR	370.34	370.23	0.11	0.05	0.01	2.69	261.17	3.14	50.40	0.22
Plumtree	5824	10-YR	372.32	372.19	0.13	0.06	0.00	54.53	508.52	62.95	158.35	0.27
Plumtree	5824	50-YR	373.37	373.13	0.24	0.12	0.01	157.55	866.81	207.64	168.13	0.54
Plumtree	5824	100-YR	373.84	373.53	0.30	0.15	0.02	222.69	1052.77	301.54	172.32	0.69

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5824	7-30-2016	374.15	373.80	0.35	0.18	0.03	274.96	1190.72	377.32	175.18	0.80
Plumtree	5745	1-YR	367.51	367.35	0.15	0.06	0.02		164.00		21.65	0.35
Plumtree	5745	2-YR	370.27	370.21	0.06	0.01	0.00	0.78	256.93	9.29	66.54	0.12
Plumtree	5745	10-YR	372.26	372.14	0.12	0.02	0.01	39.16	544.43	42.41	101.15	0.23
Plumtree	5745	50-YR	373.25	372.91	0.34	0.05	0.02	114.25	1025.27	92.49	118.25	0.62
Plumtree	5745	100-YR	373.66	373.17	0.50	0.06	0.03	162.10	1293.44	121.47	134.34	0.91
Plumtree	5745	7-30-2016	373.94	373.30	0.64	0.08	0.04	199.02	1500.31	143.67	142.35	1.17
Plumtree	5711	1-YR	367.43	367.33	0.10				164.00		22.83	0.21
Plumtree	5711	2-YR	370.26	370.21	0.05			1.29	249.67	16.03	63.28	0.09
Plumtree	5711	10-YR	372.24	372.14	0.10			26.64	528.18	71.18	123.53	0.19
Plumtree	5711	50-YR	373.18	372.90	0.28			76.21	990.01	165.78	170.27	0.52
Plumtree	5711	100-YR	373.57	373.17	0.40			112.10	1238.96	225.93	179.46	0.75
Plumtree	5711	7-30-2016	373.82	373.32	0.50			140.32	1419.42	283.26	182.63	0.95
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	366.30	366.23	0.06	0.06	0.01		164.00		28.44	0.13
Plumtree	5614	2-YR	367.37	367.29	0.09	0.06	0.01	0.77	266.23		45.07	0.17
Plumtree	5614	10-YR	371.36	371.31	0.05	0.01	0.00	93.56	493.26	39.18	178.37	0.10
Plumtree	5614	50-YR	372.69	372.59	0.10	0.02	0.02	212.33	864.25	155.42	221.27	0.20
Plumtree	5614	100-YR	373.17	373.04	0.13	0.02	0.03	282.70	1059.53	234.78	236.43	0.27
Plumtree	5614	7-30-2016	373.37	373.20	0.16	0.03	0.04	340.51	1215.58	286.92	238.61	0.34
Plumtree	5560	1-YR	366.23	366.14	0.10	0.12	0.02		164.00		24.12	0.21
Plumtree	5560	2-YR	367.30	367.18	0.13	0.12	0.03		266.87	0.13	32.14	0.26
Plumtree	5560	10-YR	371.34	371.30	0.04	0.02	0.01	143.57	413.35	69.08	273.40	0.09
Plumtree	5560	50-YR	372.65	372.59	0.06	0.03	0.01	389.03	650.34	192.63	316.00	0.16
Plumtree	5560	100-YR	373.12	373.05	0.07	0.03	0.01	526.73	779.84	270.43	333.91	0.20
Plumtree	5560	7-30-2016	373.30	373.21	0.09	0.04	0.01	625.65	892.38	324.97	340.87	0.25
Plumtree	5510	1-YR	366.08	365.76	0.32	0.06	0.01		164.00		16.14	0.74
Plumtree	5510	2-YR	367.16	366.78	0.38	0.05	0.01		267.00		19.26	0.82
Plumtree	5510	10-YR	371.32	371.22	0.09	0.01	0.02	91.96	440.74	93.30	220.73	0.21
Plumtree	5510	50-YR	372.61	372.46	0.15	0.01	0.04	248.38	714.32	269.30	250.18	0.38
Plumtree	5510	100-YR	373.08	372.89	0.19	0.01	0.05	336.56	858.38	382.05	256.28	0.48
Plumtree	5510	7-30-2016	373.25	373.01	0.24			398.75	986.88	457.37	257.94	0.62
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	365.84	365.68	0.16	0.14	0.01		164.00		18.57	0.35
Plumtree	5474	2-YR	366.91	366.69	0.22	0.16	0.02		267.00		21.56	0.45
Plumtree	5474	10-YR	371.25	371.17	0.08	0.02	0.00	112.80	458.64	54.55	172.17	0.16
Plumtree	5474	50-YR	372.50	372.36	0.14	0.04	0.00	291.94	767.95	172.11	203.28	0.32
Plumtree	5474	100-YR	372.94	372.76	0.18	0.05	0.00	393.16	931.26	252.58	208.09	0.42
Plumtree	5474	7-30-2016	373.21	373.00	0.21	0.06	0.00	471.24	1056.08	315.68	210.93	0.51
Plumtree	5419	1-YR	365.69	365.49	0.20	0.32	0.00		164.00		16.90	0.43
Plumtree	5419	2-YR	366.73	366.46	0.28	0.32	0.00		267.00		19.16	0.57
Plumtree	5419	10-YR	371.22	371.15	0.07	0.03	0.01	115.88	412.63	97.49	191.70	0.16
Plumtree	5419	50-YR	372.46	372.33	0.14	0.05	0.02	300.25	701.54	230.21	221.31	0.34
Plumtree	5419	100-YR	372.89	372.72	0.18	0.07	0.02	404.35	853.04	319.61	225.87	0.45
Plumtree	5419	7-30-2016	373.16	372.94	0.21	0.08	0.02	484.54	969.22	389.24	228.41	0.55
Plumtree	5323	1-YR	365.37	365.14	0.22	0.59	0.02		164.00		17.32	0.50
Plumtree	5323	2-YR	366.41	366.14	0.26	0.51	0.02	8.32	258.68		52.56	0.57
Plumtree	5323	10-YR	371.19	371.15	0.03	0.02	0.00	239.05	319.57	67.38	150.56	0.09
Plumtree	5323	50-YR	372.39	372.31	0.08	0.05	0.01	501.26	567.77	162.97	167.41	0.21
Plumtree	5323	100-YR	372.80	372.69	0.11	0.06	0.01	654.92	705.54	216.55	173.84	0.30
Plumtree	5323	7-30-2016	373.05	372.91	0.13	0.08	0.01	773.93	810.67	258.41	177.33	0.38
Plumtree	5209	1-YR	364.76	364.37	0.39	0.91	0.01		164.00		13.95	0.91
Plumtree	5209	2-YR	365.88	365.44	0.45	0.55	0.03	3.96	262.81	0.24	39.54	0.96
Plumtree	5209	10-YR	371.16	371.13	0.03	0.02	0.00	236.36	258.95	130.70	169.35	0.08
Plumtree	5209	50-YR	372.34	372.28	0.06	0.05	0.01	502.32	452.14	277.54	196.58	0.19
Plumtree	5209	100-YR	372.73	372.65	0.08	0.06	0.01	644.47	565.22	367.32	207.31	0.27
Plumtree	5209	7-30-2016	372.96	372.86	0.11	0.08	0.01	754.39	651.87	436.74	213.70	0.35
Plumtree	5107	1-YR	363.84	363.32	0.52	0.68	0.03		164.00		13.78	1.24
Plumtree	5107	2-YR	365.30	364.96	0.34	0.23	0.04		267.00		20.96	0.75
Plumtree	5107	10-YR	371.13	371.07	0.06	0.02	0.00	38.66	468.27	119.07	227.77	0.12
Plumtree	5107	50-YR	372.29	372.14	0.14	0.03	0.01	163.59	829.85	238.56	279.36	0.29
Plumtree	5107	100-YR	372.66	372.45	0.20	0.05	0.01	239.24	1030.47	307.29	301.50	0.42
Plumtree	5107	7-30-2016	372.87	372.61	0.26	0.06	0.02	298.38	1184.62	360.00	310.26	0.53
Plumtree	5040	1-YR	363.12	362.70	0.43				164.00		15.99	1.03
Plumtree	5040	2-YR	365.03	364.82	0.21				267.00		23.63	0.43
Plumtree	5040	10-YR	371.12	371.06	0.06			71.43	527.95	26.63	232.69	0.11
Plumtree	5040	50-YR	372.25	372.13	0.12			257.10	889.93	84.97	285.53	0.23

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5040	100-YR	372.60	372.44	0.16			361.74	1094.28	120.98	306.91	0.33
Plumtree	5040	7-30-2016	372.79	372.59	0.20			447.39	1247.85	147.77	312.43	0.41
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	362.24	361.97	0.27	0.27	0.07		164.00		19.43	0.65
Plumtree	4932	2-YR	363.51	363.27	0.25	0.19	0.04		267.00		23.65	0.52
Plumtree	4932	10-YR	368.57	368.43	0.14	0.03	0.05	5.60	610.21	10.19	50.08	0.22
Plumtree	4932	50-YR	372.12	371.99	0.13	0.02	0.03	214.01	940.04	77.94	232.37	0.22
Plumtree	4932	100-YR	372.53	372.36	0.17	0.03	0.04	311.23	1149.33	116.44	240.26	0.31
Plumtree	4932	7-30-2016	372.73	372.52	0.22	0.04	0.05	381.64	1317.52	143.83	242.91	0.39
Plumtree	4845	1-YR	361.91	361.77	0.14	0.20	0.01		164.00		19.61	0.30
Plumtree	4845	2-YR	363.28	363.12	0.16	0.14	0.02		267.00		22.99	0.31
Plumtree	4845	10-YR	368.50	368.45	0.05	0.01	0.01	152.79	457.31	15.90	117.60	0.10
Plumtree	4845	50-YR	372.06	372.00	0.06	0.01	0.01	377.58	756.50	97.92	175.26	0.12
Plumtree	4845	100-YR	372.46	372.37	0.09	0.01	0.02	490.21	952.12	134.67	184.85	0.18
Plumtree	4845	7-30-2016	372.64	372.53	0.11	0.01	0.03	575.77	1104.22	163.01	188.71	0.23
Plumtree	4745	1-YR	361.71	361.59	0.12	0.15	0.01		164.00		25.53	0.26
Plumtree	4745	2-YR	363.12	363.01	0.11	0.10	0.01	0.75	266.25		55.12	0.22
Plumtree	4745	10-YR	368.48	368.46	0.01	0.01	0.00	117.87	313.17	194.96	270.77	0.03
Plumtree	4745	50-YR	372.04	372.03	0.01	0.00	0.00	280.41	465.23	486.36	326.02	0.03
Plumtree	4745	100-YR	372.43	372.41	0.01	0.00	0.00	364.43	583.96	628.62	334.46	0.04
Plumtree	4745	7-30-2016	372.60	372.58	0.02	0.01	0.00	428.95	677.24	736.81	338.70	0.05
Plumtree	4636	1-YR	361.55	361.47	0.08	0.09	0.00		164.00		23.50	0.17
Plumtree	4636	2-YR	363.02	362.93	0.09	0.06	0.00	1.12	262.09	3.79	127.31	0.17
Plumtree	4636	10-YR	368.47	368.46	0.01	0.01	0.00	49.46	238.55	337.99	374.26	0.02
Plumtree	4636	50-YR	372.04	372.03	0.01	0.00	0.00	172.12	329.39	730.50	519.06	0.02
Plumtree	4636	100-YR	372.42	372.41	0.01	0.00	0.00	228.75	408.48	939.76	530.30	0.03
Plumtree	4636	7-30-2016	372.59	372.58	0.01	0.00	0.00	271.42	471.08	1100.50	535.22	0.04
Plumtree	4550	1-YR	361.46	361.38	0.08				164.00		26.40	0.17
Plumtree	4550	2-YR	362.95	362.87	0.08			0.03	264.51	2.47	92.81	0.15
Plumtree	4550	10-YR	368.46	368.42	0.04			63.20	507.44	55.36	384.36	0.07
Plumtree	4550	50-YR	372.03	372.03	0.00			150.20	355.18	726.62	498.92	0.02
Plumtree	4550	100-YR	372.42	372.41	0.01			199.37	441.94	935.69	529.49	0.02
Plumtree	4550	7-30-2016	372.59	372.58	0.01			236.61	510.34	1096.05	572.97	0.03
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	359.00	358.98	0.03	0.01	0.00		164.00		26.96	0.05
Plumtree	4344	2-YR	359.79	359.74	0.05	0.02	0.00		267.00		28.15	0.09
Plumtree	4344	10-YR	361.62	361.46	0.16	0.04	0.02	0.03	625.68	0.29	46.98	0.26
Plumtree	4344	50-YR	363.18	362.81	0.37	0.07	0.06	14.96	1183.70	33.34	107.55	0.61
Plumtree	4344	100-YR	363.89	363.42	0.47	0.08	0.09	37.98	1456.72	82.30	126.46	0.77
Plumtree	4344	7-30-2016	364.54	364.05	0.48	0.08	0.10	70.38	1620.91	151.72	139.73	0.81
Plumtree	4289	1-YR	358.99	358.96	0.02	0.06	0.02		164.00		31.85	0.05
Plumtree	4289	2-YR	359.77	359.73	0.05	0.08	0.02		267.00		34.68	0.09
Plumtree	4289	10-YR	361.56	361.44	0.13	0.16	0.04		622.69	3.31	62.89	0.22
Plumtree	4289	50-YR	363.05	362.80	0.25	0.19	0.01	41.71	1138.79	51.51	156.95	0.44
Plumtree	4289	100-YR	363.73	363.43	0.30	0.18	0.00	91.12	1378.16	107.72	172.55	0.52
Plumtree	4289	7-30-2016	364.36	364.07	0.29	0.16	0.01	156.96	1515.61	170.43	182.42	0.52
Plumtree	4185	1-YR	358.92	358.71	0.21	0.55	0.01		149.00		20.44	0.50
Plumtree	4185	2-YR	359.67	359.41	0.26	0.56	0.01		228.00		22.76	0.57
Plumtree	4185	10-YR	361.37	360.86	0.51	0.54	0.08	47.15	547.85		114.74	1.10
Plumtree	4185	50-YR	362.85	362.49	0.36	0.32	0.06	377.95	798.57	59.48	222.11	0.94
Plumtree	4185	100-YR	363.54	363.24	0.30	0.28	0.04	574.49	889.25	142.26	254.33	0.84
Plumtree	4185	7-30-2016	364.19	363.93	0.26	0.24	0.04	775.57	979.90	242.54	282.98	0.79
Plumtree	4033	1-YR	358.35	358.17	0.18	0.48	0.02		149.00		19.57	0.40
Plumtree	4033	2-YR	359.11	358.87	0.24	0.48	0.02		228.00		21.58	0.51
Plumtree	4033	10-YR	360.74	360.51	0.23	0.31	0.01	6.33	426.97	161.70	161.69	0.58
Plumtree	4033	50-YR	362.47	362.30	0.16	0.14	0.01	89.73	603.37	542.89	259.42	0.51
Plumtree	4033	100-YR	363.22	363.05	0.16	0.13	0.01	160.75	713.03	732.22	301.15	0.54
Plumtree	4033	7-30-2016	363.92	363.78	0.14	0.11	0.01	228.81	771.26	997.93	318.70	0.50
Plumtree	3930	1-YR	357.85	357.50	0.35	0.60	0.04		149.00		16.62	0.85
Plumtree	3930	2-YR	358.61	358.18	0.43	0.55	0.05	0.86	227.14		22.76	0.96
Plumtree	3930	10-YR	360.42	360.06	0.36	0.30	0.04	34.17	436.24	124.59	184.47	0.90
Plumtree	3930	50-YR	362.32	362.19	0.13	0.13	0.00	141.88	501.85	592.27	233.31	0.46
Plumtree	3930	100-YR	363.08	362.96	0.12	0.12	0.00	213.60	570.71	821.69	248.97	0.45
Plumtree	3930	7-30-2016	363.80	363.68	0.12	0.11	0.00	305.97	637.72	1054.32	262.00	0.45
Plumtree	3816	1-YR	357.21	356.99	0.22	0.41	0.01		148.70	0.30	22.33	0.50
Plumtree	3816	2-YR	358.01	357.75	0.26	0.40	0.00	0.05	219.91	8.04	42.89	0.57
Plumtree	3816	10-YR	360.07	359.86	0.21	0.25	0.00	36.61	400.49	157.91	140.18	0.55

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	3816	50-YR	362.18	362.04	0.14	0.15	0.01	155.99	542.51	537.50	204.22	0.44
Plumtree	3816	100-YR	362.96	362.82	0.14	0.15	0.01	235.63	622.72	747.64	221.85	0.45
Plumtree	3816	7-30-2016	363.68	363.54	0.14	0.14	0.01	321.65	706.04	970.31	230.62	0.48
Plumtree	3688	1-YR	356.79	356.61	0.18	0.47	0.00	0.03	148.97		17.34	0.40
Plumtree	3688	2-YR	357.61	357.35	0.25	0.42	0.01	2.82	223.80	1.38	38.74	0.52
Plumtree	3688	10-YR	359.81	359.56	0.26	0.27	0.00	61.49	424.77	108.74	114.40	0.60
Plumtree	3688	50-YR	362.02	361.83	0.19	0.18	0.00	212.49	605.64	417.87	176.50	0.56
Plumtree	3688	100-YR	362.80	362.61	0.19	0.18	0.01	320.34	691.76	593.90	187.25	0.59
Plumtree	3688	7-30-2016	363.54	363.34	0.19	0.18	0.01	435.18	777.80	785.03	196.42	0.62
Plumtree	3550	1-YR	356.32	356.12	0.20	0.42	0.00		149.00		21.02	0.48
Plumtree	3550	2-YR	357.18	356.96	0.22	0.37	0.00	1.60	226.40		30.37	0.47
Plumtree	3550	10-YR	359.54	359.29	0.26	0.28	0.02	53.23	501.37	40.41	95.07	0.53
Plumtree	3550	50-YR	361.84	361.61	0.23	0.22	0.03	256.18	781.05	198.77	149.96	0.53
Plumtree	3550	100-YR	362.62	362.36	0.25	0.24	0.04	368.88	939.06	298.06	163.09	0.61
Plumtree	3550	7-30-2016	363.35	363.07	0.28	0.25	0.04	490.00	1097.23	410.77	179.46	0.68
Plumtree	3428	1-YR	355.90	355.70	0.20	0.37	0.01	0.14	148.86		17.49	0.43
Plumtree	3428	2-YR	356.81	356.55	0.25	0.40	0.00	4.42	223.58		25.70	0.52
Plumtree	3428	10-YR	359.24	358.83	0.42	0.48	0.01	73.10	509.80	12.09	57.44	0.84
Plumtree	3428	50-YR	361.59	361.10	0.50	0.42	0.02	268.51	852.41	115.09	97.01	1.06
Plumtree	3428	100-YR	362.34	361.73	0.62	0.52	0.04	368.95	1047.86	189.18	108.53	1.34
Plumtree	3428	7-30-2016	363.05	362.33	0.72	0.60	0.05	475.64	1239.00	283.36	119.49	1.60
Plumtree	3296	1-YR	355.53	355.35	0.18	0.30	0.02		149.00		15.70	0.39
Plumtree	3296	2-YR	356.41	356.17	0.24	0.35	0.03		228.00		18.15	0.51
Plumtree	3296	10-YR	358.76	358.28	0.48	0.25	0.10	0.08	594.92		29.02	0.95
Plumtree	3296	50-YR	361.15	360.43	0.71	0.19	0.17	15.22	1166.24	54.54	98.52	1.28
Plumtree	3296	100-YR	361.79	360.82	0.97	0.24	0.23	25.72	1470.90	109.38	113.19	1.75
Plumtree	3296	7-30-2016	362.39	361.13	1.26	0.29	0.30	38.24	1780.44	179.31	125.32	2.30
Plumtree	3179	1-YR	355.21	355.09	0.12	0.27	0.00		149.00		24.69	0.28
Plumtree	3179	2-YR	356.02	355.89	0.13	0.24	0.01		228.00		39.13	0.32
Plumtree	3179	10-YR	358.41	358.27	0.14	0.07	0.03	8.23	580.08	6.69	83.73	0.27
Plumtree	3179	50-YR	360.80	360.64	0.16	0.05	0.03	49.52	1055.60	130.89	156.34	0.30
Plumtree	3179	100-YR	361.33	361.11	0.22	0.07	0.04	73.17	1336.81	196.03	162.68	0.40
Plumtree	3179	7-30-2016	361.81	361.53	0.28	0.08	0.06	100.88	1628.11	269.01	168.12	0.52
Plumtree	3077	1-YR	354.94	354.80	0.14	0.26	0.00		149.00		24.33	0.33
Plumtree	3077	2-YR	355.78	355.67	0.11	0.21	0.00	17.97	208.57	1.46	106.89	0.27
Plumtree	3077	10-YR	358.31	358.26	0.05	0.07	0.01	180.05	331.14	83.82	181.87	0.13
Plumtree	3077	50-YR	360.71	360.66	0.05	0.06	0.02	437.01	548.72	250.27	222.66	0.15
Plumtree	3077	100-YR	361.22	361.15	0.07	0.07	0.03	575.61	693.51	336.88	237.61	0.20
Plumtree	3077	7-30-2016	361.67	361.58	0.09	0.09	0.03	730.67	838.16	429.17	248.62	0.26
Plumtree	2978	1-YR	354.67	354.54	0.13	0.14	0.00		149.00		21.21	0.31
Plumtree	2978	2-YR	355.57	355.41	0.15	0.15	0.00		227.96	0.04	29.31	0.34
Plumtree	2978	10-YR	358.22	358.03	0.19	0.08	0.00	12.90	539.88	42.22	73.46	0.36
Plumtree	2978	50-YR	360.64	360.40	0.23	0.06	0.02	119.24	947.69	169.07	145.55	0.46
Plumtree	2978	100-YR	361.12	360.79	0.32	0.08	0.03	182.91	1192.78	230.31	161.45	0.65
Plumtree	2978	7-30-2016	361.55	361.12	0.42	0.09	0.05	264.21	1438.48	295.31	163.72	0.85
Plumtree	2917	1-YR	354.53	354.39	0.14				149.00		19.35	0.32
Plumtree	2917	2-YR	355.41	355.24	0.17				228.00		27.33	0.39
Plumtree	2917	10-YR	358.14	357.94	0.20			14.13	561.88	18.99	77.73	0.37
Plumtree	2917	50-YR	360.56	360.39	0.17			254.81	884.36	96.83	258.06	0.35
Plumtree	2917	100-YR	361.01	360.80	0.21			392.17	1081.63	132.20	279.53	0.46
Plumtree	2917	7-30-2016	361.40	361.15	0.26			549.19	1278.07	170.74	298.13	0.58
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	354.41	354.26	0.14	0.19	0.01	0.27	148.73		36.22	0.37
Plumtree	2827	2-YR	355.11	354.96	0.15	0.18	0.03	4.22	223.03	0.75	67.92	0.35
Plumtree	2827	10-YR	356.49	356.10	0.40	0.25	0.04	22.57	557.74	14.68	125.62	0.83
Plumtree	2827	50-YR	357.66	357.27	0.39	0.22	0.06	321.21	856.15	58.64	168.26	0.97
Plumtree	2827	100-YR	358.19	357.74	0.45	0.22	0.09	469.67	1040.17	96.17	181.40	1.14
Plumtree	2827	7-30-2016	358.69	358.20	0.49	0.22	0.11	642.13	1215.24	140.63	192.43	1.27
Plumtree	2759	1-YR	354.20	354.01	0.19	0.44	0.02	3.00	190.89	0.11	38.10	0.40
Plumtree	2759	2-YR	354.90	354.65	0.25	0.45	0.04	20.74	267.81	6.45	102.66	0.54
Plumtree	2759	10-YR	356.20	355.89	0.31	0.59	0.03	175.08	459.67	106.25	183.88	0.88
Plumtree	2759	50-YR	357.39	357.12	0.27	0.62	0.00	453.73	603.97	337.30	234.40	0.96
Plumtree	2759	100-YR	357.88	357.60	0.28	0.59	0.01	614.78	679.23	471.00	251.48	1.03
Plumtree	2759	7-30-2016	358.35	358.08	0.27	0.56	0.01	788.54	747.32	621.14	267.31	1.07
Plumtree	2589	1-YR	353.74	353.61	0.13	0.61	0.07		112.49	81.51	67.53	0.44
Plumtree	2589	2-YR	354.42	354.29	0.13	0.53	0.07	0.88	146.53	147.60	107.81	0.47
Plumtree	2589	10-YR	355.57	355.38	0.20	0.50	0.02	40.39	264.85	435.76	153.99	0.84
Plumtree	2589	50-YR	356.77	356.49	0.28	0.47	0.00	178.14	420.08	796.77	230.38	1.31

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

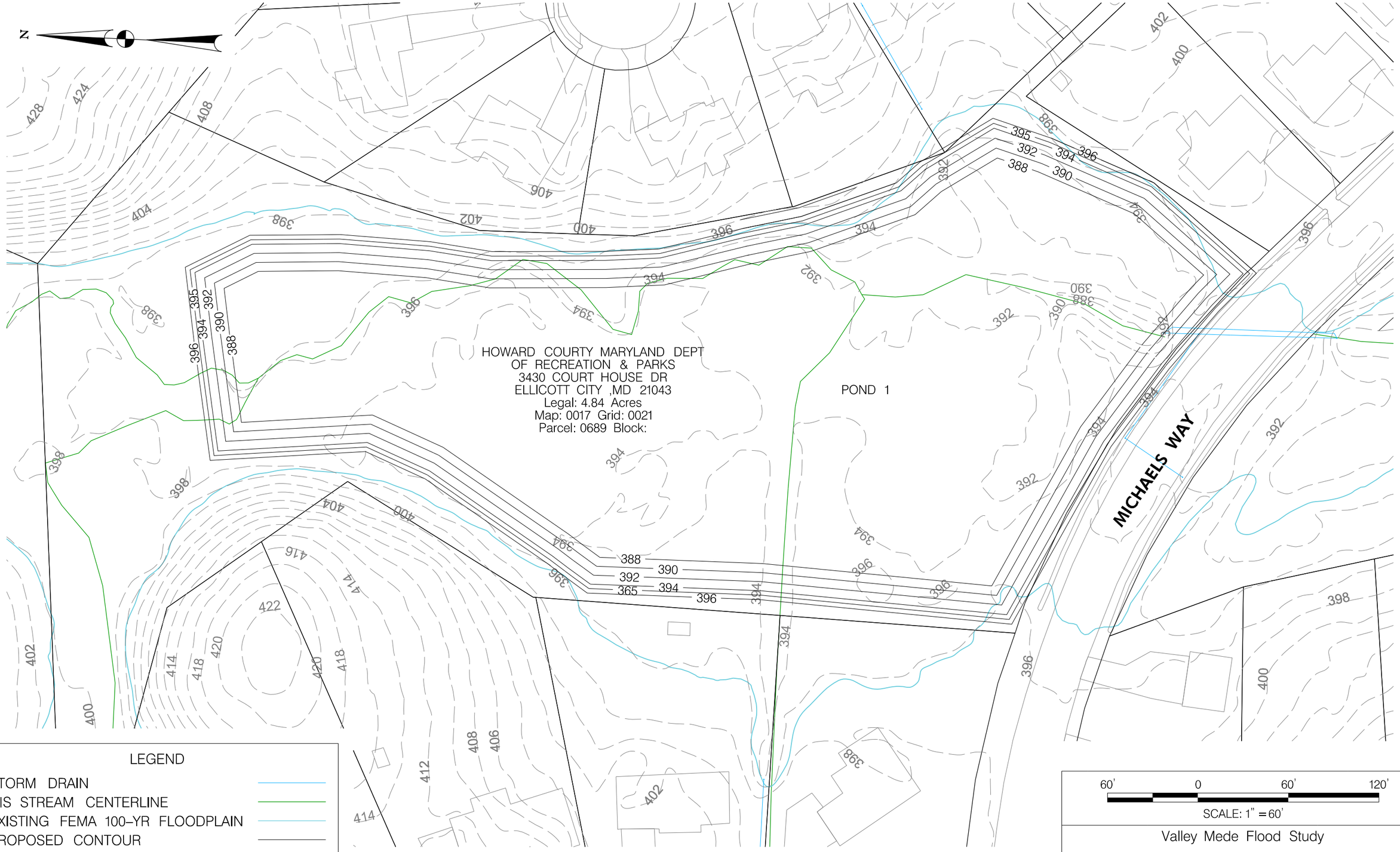
Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	2589	100-YR	357.28	357.03	0.25	0.42	0.00	261.33	458.65	1045.02	247.37	1.27
Plumtree	2589	7-30-2016	357.79	357.55	0.24	0.38	0.00	352.56	495.32	1309.12	263.57	1.24
Plumtree	2485	1-YR	353.06	352.27	0.80	1.09	0.16	6.08	187.92		22.59	1.94
Plumtree	2485	2-YR	353.81	352.96	0.85	0.96	0.16	28.25	263.54	3.21	38.34	2.05
Plumtree	2485	10-YR	355.05	354.61	0.44	0.68	0.02	207.96	378.91	154.14	152.00	1.51
Plumtree	2485	50-YR	356.29	355.97	0.32	0.58	0.01	464.35	483.94	446.71	195.79	1.34
Plumtree	2485	100-YR	356.86	356.57	0.29	0.55	0.02	615.25	528.59	621.16	203.74	1.28
Plumtree	2485	7-30-2016	357.41	357.13	0.28	0.52	0.02	774.13	577.37	805.50	210.83	1.27
Plumtree	2331	1-YR	351.81	351.56	0.25	0.49	0.02		193.80	0.20	21.42	0.56
Plumtree	2331	2-YR	352.69	352.38	0.31	0.52	0.02	1.47	289.48	4.04	64.53	0.65
Plumtree	2331	10-YR	354.35	353.98	0.37	0.56	0.02	147.73	541.51	51.77	125.68	0.89
Plumtree	2331	50-YR	355.71	355.28	0.42	0.59	0.02	430.34	807.42	157.24	148.91	1.13
Plumtree	2331	100-YR	356.30	355.84	0.46	0.61	0.02	592.92	943.96	228.11	159.72	1.26
Plumtree	2331	7-30-2016	356.87	356.39	0.48	0.61	0.02	777.07	1073.12	306.81	169.96	1.35
Plumtree	2153	1-YR	351.30	351.13	0.18	0.38	0.00	4.88	189.12		21.90	0.37
Plumtree	2153	2-YR	352.15	351.90	0.24	0.47	0.01	23.02	271.98		73.87	0.51
Plumtree	2153	10-YR	353.77	353.46	0.31	0.53	0.01	251.79	479.82	9.39	122.71	0.82
Plumtree	2153	50-YR	355.09	354.74	0.36	0.56	0.00	644.59	687.32	63.09	142.84	1.09
Plumtree	2153	100-YR	355.67	355.28	0.39	0.56	0.00	873.68	789.67	101.66	149.50	1.23
Plumtree	2153	7-30-2016	356.23	355.83	0.41	0.55	0.01	1121.77	885.20	150.03	156.45	1.32
Plumtree	1994	1-YR	350.92	350.69	0.22	0.32	0.00	1.34	192.66		27.63	0.48
Plumtree	1994	2-YR	351.66	351.33	0.33	0.36	0.01	10.53	284.30	0.17	81.53	0.69
Plumtree	1994	10-YR	353.23	352.86	0.37	0.36	0.02	197.57	494.04	49.40	133.39	0.97
Plumtree	1994	50-YR	354.53	354.14	0.39	0.37	0.01	499.27	702.12	193.62	171.19	1.20
Plumtree	1994	100-YR	355.11	354.72	0.38	0.36	0.01	681.49	784.28	299.23	176.56	1.23
Plumtree	1994	7-30-2016	355.68	355.30	0.38	0.35	0.00	882.09	872.17	402.74	188.61	1.28
Plumtree	1888	1-YR	350.59	350.34	0.25	0.06	0.01	8.36	179.81	5.83	49.34	0.56
Plumtree	1888	2-YR	351.29	351.00	0.29	0.06	0.01	31.39	243.68	19.93	73.28	0.67
Plumtree	1888	10-YR	352.85	352.55	0.31	0.06	0.01	187.40	415.36	138.25	135.25	0.90
Plumtree	1888	50-YR	354.15	353.80	0.35	0.06	0.02	432.89	599.77	362.34	160.47	1.17
Plumtree	1888	100-YR	354.74	354.38	0.36	0.07	0.03	578.55	685.11	501.34	170.01	1.26
Plumtree	1888	7-30-2016	355.33	354.96	0.37	0.07	0.04	742.13	770.00	644.86	180.95	1.33
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	350.35	350.25	0.10	0.41	0.04	50.19	143.81		72.27	0.27
Plumtree	1830	2-YR	351.02	350.92	0.11	0.47	0.08	102.00	192.94	0.06	98.15	0.30
Plumtree	1830	10-YR	352.60	352.47	0.13	0.52	0.14	326.73	351.04	63.23	152.68	0.42
Plumtree	1830	50-YR	353.86	353.67	0.19	0.56	0.12	627.90	551.27	215.83	157.05	0.63
Plumtree	1830	100-YR	354.42	354.21	0.22	0.58	0.10	792.89	660.11	312.00	160.33	0.74
Plumtree	1830	7-30-2016	354.99	354.74	0.25	0.58	0.08	961.38	773.57	422.05	165.72	0.85
Plumtree	1641	1-YR	349.90	349.67	0.23	0.28	0.05	19.94	174.05	0.01	31.21	0.53
Plumtree	1641	2-YR	350.47	350.10	0.37	0.39	0.08	37.56	255.59	1.84	65.80	0.86
Plumtree	1641	10-YR	351.94	351.34	0.60	0.62	0.12	140.57	489.06	111.36	116.71	1.62
Plumtree	1641	50-YR	353.18	352.60	0.58	0.67	0.08	311.85	680.45	402.70	148.16	1.85
Plumtree	1641	100-YR	353.74	353.18	0.56	0.64	0.08	413.25	763.30	588.45	157.83	1.89
Plumtree	1641	7-30-2016	354.33	353.80	0.52	0.57	0.07	528.34	835.19	793.48	167.82	1.85
Plumtree	1463	1-YR	349.57	349.50	0.07	0.36	0.01	3.92	187.01	3.07	98.09	0.16
Plumtree	1463	2-YR	350.00	349.89	0.11	0.43	0.01	18.80	266.47	9.73	117.70	0.24
Plumtree	1463	10-YR	351.20	350.98	0.22	0.51	0.01	135.65	539.98	65.37	147.91	0.54
Plumtree	1463	50-YR	352.42	352.13	0.30	0.46	0.04	367.52	844.27	183.21	181.84	0.79
Plumtree	1463	100-YR	353.03	352.72	0.31	0.41	0.05	522.58	977.65	264.78	195.20	0.85
Plumtree	1463	7-30-2016	353.69	353.39	0.29	0.35	0.05	696.93	1089.60	370.47	206.47	0.84
Plumtree	1291	1-YR	349.21	349.04	0.17	0.64	0.00	159.15	248.85		220.05	0.55
Plumtree	1291	2-YR	349.56	349.38	0.19	0.59	0.01	270.94	310.00	0.06	239.14	0.68
Plumtree	1291	10-YR	350.68	350.50	0.18	0.47	0.02	836.45	473.55	6.00	314.30	0.82
Plumtree	1291	50-YR	351.92	351.76	0.16	0.38	0.01	1693.97	625.93	31.10	396.89	0.81
Plumtree	1291	100-YR	352.57	352.42	0.15	0.33	0.00	2261.18	682.92	50.90	413.55	0.75
Plumtree	1291	7-30-2016	353.29	353.15	0.14	0.30	0.00	2952.81	751.07	78.11	422.07	0.70
Plumtree	1124	1-YR	348.57	348.35	0.21	0.46	0.03	144.59	263.41		243.41	0.68
Plumtree	1124	2-YR	348.96	348.81	0.15	0.37	0.01	295.12	285.88		261.49	0.58
Plumtree	1124	10-YR	350.19	350.07	0.12	0.30	0.00	911.34	403.64	1.01	281.73	0.56
Plumtree	1124	50-YR	351.53	351.41	0.13	0.25	0.00	1775.59	559.09	16.31	311.21	0.59
Plumtree	1124	100-YR	352.23	352.10	0.13	0.24	0.00	2307.64	650.29	37.07	325.49	0.61
Plumtree	1124	7-30-2016	352.99	352.85	0.14	0.23	0.01	2950.35	758.38	73.27	337.57	0.65
Plumtree	994	1-YR	348.08	347.96	0.13	0.25	0.00	143.78	264.22		183.00	0.42
Plumtree	994	2-YR	348.58	348.47	0.11	0.19	0.00	264.37	316.63		206.46	0.38
Plumtree	994	10-YR	349.89	349.75	0.13	0.17	0.00	752.10	562.30	1.59	235.38	0.49
Plumtree	994	50-YR	351.28	351.11	0.16	0.16	0.00	1461.15	868.79	21.07	271.54	0.59
Plumtree	994	100-YR	351.99	351.81	0.18	0.15	0.00	1903.41	1046.53	45.06	288.19	0.64

HEC-RAS Plan: D River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	994	7-30-2016	352.75	352.55	0.20	0.15	0.01	2446.40	1251.88	83.72	303.86	0.70
Plumtree	911	1-YR	347.82	347.65	0.17	0.54	0.01	153.68	254.32		193.54	0.55
Plumtree	911	2-YR	348.39	348.27	0.12	0.47	0.03	303.96	277.04		213.59	0.43
Plumtree	911	10-YR	349.71	349.59	0.13	0.34	0.01	872.43	439.84	3.73	239.09	0.54
Plumtree	911	50-YR	351.11	350.96	0.15	0.30	0.01	1686.17	639.86	24.97	273.53	0.65
Plumtree	911	100-YR	351.83	351.66	0.17	0.28	0.01	2197.30	751.78	45.92	288.71	0.70
Plumtree	911	7-30-2016	352.60	352.42	0.18	0.27	0.01	2823.78	880.42	77.81	303.31	0.76
Plumtree	762	1-YR	347.27	347.00	0.27	0.19	0.05	97.32	310.68	0.00	66.72	0.72
Plumtree	762	2-YR	347.89	347.52	0.38	0.21	0.07	135.98	442.36	2.66	161.19	0.99
Plumtree	762	10-YR	349.36	349.12	0.24	0.17	0.03	572.33	636.09	107.59	242.04	0.80
Plumtree	762	50-YR	350.81	350.58	0.22	0.15	0.02	1162.24	872.19	316.56	281.55	0.82
Plumtree	762	100-YR	351.54	351.31	0.23	0.14	0.02	1530.64	1008.77	455.60	300.48	0.85
Plumtree	762	7-30-2016	352.32	352.09	0.23	0.14	0.02	1974.05	1162.00	645.95	314.67	0.88
Plumtree	658	1-YR	347.04	346.92	0.12	0.14	0.00	8.35	391.85	7.80	174.69	0.23
Plumtree	658	2-YR	347.62	347.48	0.14	0.13	0.02	37.17	504.57	39.26	225.88	0.28
Plumtree	658	10-YR	349.16	349.02	0.15	0.12	0.02	258.78	798.50	258.72	301.02	0.37
Plumtree	658	50-YR	350.64	350.49	0.15	0.12	0.02	629.26	1100.31	621.43	328.76	0.43
Plumtree	658	100-YR	351.38	351.22	0.16	0.12	0.02	868.73	1277.06	849.21	345.31	0.47
Plumtree	658	7-30-2016	352.16	351.99	0.17	0.12	0.02	1170.86	1483.12	1128.02	363.75	0.52
Plumtree	526	1-YR	346.90	346.78	0.11	0.25	0.01	20.73	324.30	62.97	264.39	0.27
Plumtree	526	2-YR	347.47	347.38	0.09	0.21	0.01	57.10	367.23	156.66	278.77	0.25
Plumtree	526	10-YR	349.02	348.94	0.08	0.17	0.01	218.63	547.46	549.91	311.73	0.28
Plumtree	526	50-YR	350.50	350.41	0.09	0.16	0.01	470.17	773.57	1107.26	340.24	0.34
Plumtree	526	100-YR	351.24	351.14	0.10	0.16	0.01	639.69	904.35	1450.96	352.63	0.37
Plumtree	526	7-30-2016	352.02	351.91	0.11	0.17	0.01	853.17	1058.28	1870.55	365.72	0.41
Plumtree	380	1-YR	346.63	346.39	0.24	1.36	0.09	26.53	380.03	1.45	138.09	0.52
Plumtree	380	2-YR	347.25	347.04	0.20	1.09	0.11	93.10	455.11	32.79	192.08	0.49
Plumtree	380	10-YR	348.84	348.66	0.18	0.78	0.10	381.40	704.73	229.86	219.66	0.53
Plumtree	380	50-YR	350.33	350.13	0.21	0.76	0.12	783.51	1017.30	550.19	236.20	0.64
Plumtree	380	100-YR	351.06	350.84	0.23	0.77	0.13	1030.93	1198.74	765.33	241.67	0.71
Plumtree	380	7-30-2016	351.84	351.59	0.25	0.79	0.14	1333.81	1414.34	1033.85	247.14	0.79
Plumtree	146	1-YR	345.17	343.98	1.19	0.58	0.29		408.00		19.97	2.67
Plumtree	146	2-YR	346.05	344.79	1.26	0.53	0.29	4.80	575.13	1.07	43.36	2.64
Plumtree	146	10-YR	347.96	346.75	1.21	0.45	0.20	224.58	1032.08	59.33	111.86	2.66
Plumtree	146	50-YR	349.45	348.05	1.40	0.45	0.20	658.33	1521.98	170.69	141.74	3.38
Plumtree	146	100-YR	350.16	348.63	1.53	0.46	0.21	960.28	1794.45	240.27	153.62	3.82
Plumtree	146	7-30-2016	350.91	349.23	1.68	0.46	0.22	1354.18	2102.54	325.28	164.30	4.32
Plumtree	63	1-YR	343.79	343.55	0.23				408.00		43.59	0.51
Plumtree	63	2-YR	344.47	344.18	0.29			0.04	580.94	0.02	50.01	0.61
Plumtree	63	10-YR	346.45	345.91	0.54			23.50	1281.72	10.78	84.16	0.97
Plumtree	63	50-YR	348.29	347.54	0.75			137.54	2127.33	86.14	127.03	1.32
Plumtree	63	100-YR	349.17	348.33	0.85			241.37	2594.26	159.37	139.56	1.49
Plumtree	63	7-30-2016	350.11	349.16	0.94			388.93	3129.63	263.45	150.66	1.66

Appendix H-6

Plumtree Branch: Option E Hydraulic Modeling


N
HOWARD COURTY MARYLAND DEPT
OF RECREATION & PARKS
3430 COURT HOUSE DR
ELLICOTT CITY ,MD 21043
Legal: 4.84 Acres
Map: 0017 Grid: 0021
Parcel: 0689 Block:
POND 1
MICHAELS WAY
LEGEND
STORM DRAIN
GIS STREAM CENTERLINE
EXISTING FEMA 100–YR FLOODPLAIN
PROPOSED CONTOUR
EXISTING CONTOUR
60' 0 60' 120'
SCALE: 1" = 60'
Valley Mede Flood Study
Option E: Pond 1

Project:	*Valley Mede Proposed Storage Areas*	*Designed By:*	*CEL*
County:	*Howard*	*Checked By:*	*ALH*
Watershed:	*Plumtree Branch*	*Approved By:*	
SHA Project Number:	*HO122A11*	*Date:*	*9/25/2017*
MDE Project Number:	*N/A*	***Study Area:***	***Pond 1***
Design Phase:		***BMP ID:***	***N/A***

Stage -Storage Data Table

POND 1 ABOVE MICHAELS WAY

Storage Volume Using Average-End-Area Method						
(1) Contour Elevation (ft.)	(2) Elevation Area ($ft.^2$)	(3) Average Area ($ft.^2$)	(4) Incremental Height (ft.)	(5) Elevation Storage ($ft.^3$)	(6) Cumulative Storage ($ft.^3$)	(7) Cumulative Storage (acre-ft)
388.00	104,100	0.00	0.00	0.00	0.00	0.00
390.00	113,603	108,851.62	2.00	217,703.24	217,703.24	5.00
392.00	123,377	118,490.18	2.00	236,980.36	454,683.60	10.44
394.00	133,423	128,400.01	2.00	256,800.03	711,483.63	16.33
395.00	138,547	135,984.98	1.00	135,984.98	847,468.61	19.46
396.00	143,739	141,143.36	1.00	141,143.36	988,611.96	22.70

HY-8 Culvert Analysis Report

Project Notes

Project Title: Valley Mede Flood Study

Designer: CEL

Project Date: Monday, September 25, 2017

Notes: HY-8 for Michaels Way crossing and Pond #1 upstream of Michaels Way.

Project Units: U.S. Customary Units

Outlet Control Option: Profiles

Exit Loss Option: Standard Method

Crossing Notes: Michaels Way

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

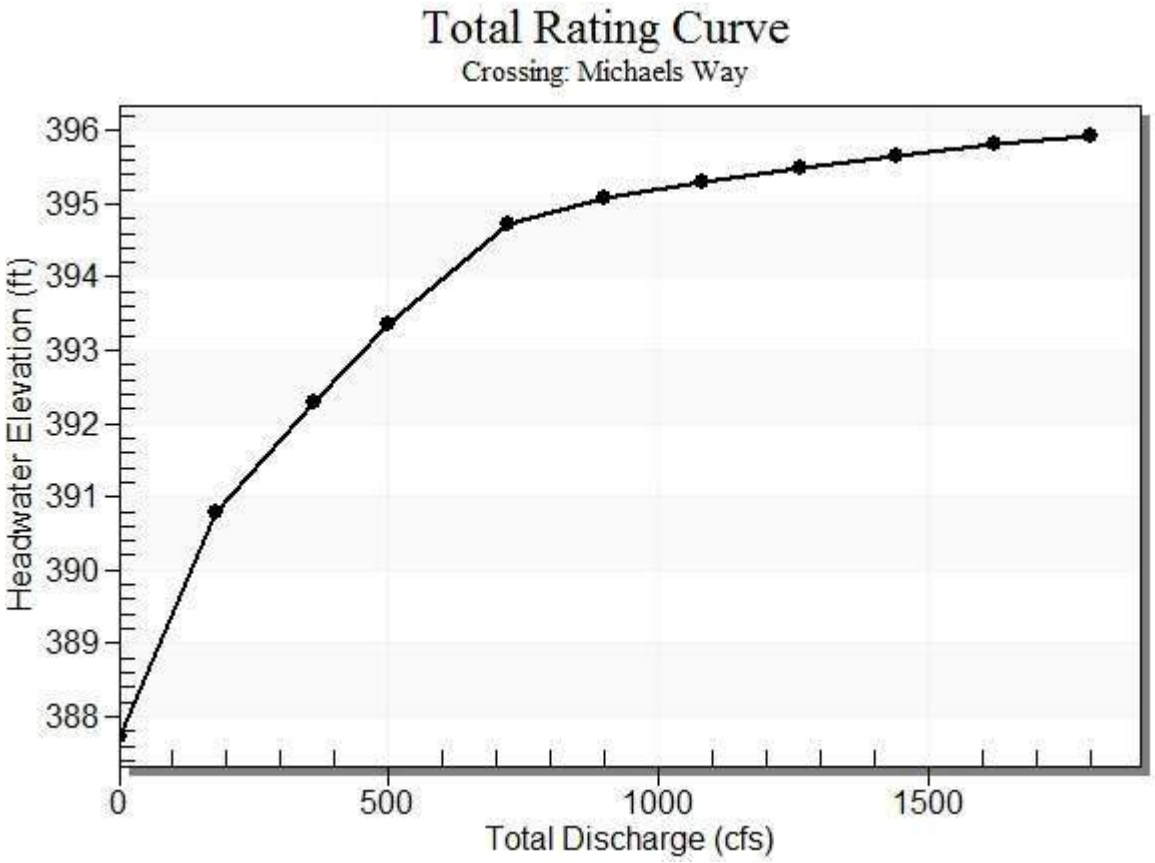
Design Flow: 500 cfs

Maximum Flow: 1800 cfs

Table 1 - Summary of Culvert Flows at Crossing: Michaels Way

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Culvert 2 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
387.74	0.00	0.00	0.00	0.00	0
390.78	180.00	90.92	89.05	0.00	6
392.30	360.00	181.11	178.84	0.00	4
393.36	500.00	250.86	249.14	0.00	4
394.73	720.00	336.28	335.46	47.91	9
395.07	900.00	355.45	354.88	189.12	6
395.30	1080.00	369.12	368.84	341.55	6
395.50	1260.00	378.16	377.94	502.62	5
395.66	1440.00	386.20	386.11	666.96	5
395.81	1620.00	392.96	393.01	832.49	4
395.94	1800.00	398.82	399.02	1001.36	4
394.38	628.95	315.00	313.95	0.00	Overtopping

Rating Curve Plot for Crossing: Michaels Way



Culvert Notes: Culvert 1

Table 2 - Culvert Summary Table: Culvert 1

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	387.74	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
180.00	90.92	390.78	2.791	3.037	2-M2c	1.992	1.915	1.915	2.454	7.036	4.225
360.00	181.11	392.30	4.278	4.559	3-M2t	3.007	2.798	2.853	3.463	8.659	5.099
500.00	250.86	393.36	5.301	5.624	3-M2t	3.849	3.331	3.446	4.056	9.758	5.562
720.00	336.28	394.73	6.626	7.000	3-M2t	5.917	3.927	4.204	4.814	10.754	6.118
900.00	355.45	395.07	6.952	7.385	3-M2t	5.917	4.054	4.727	5.337	10.268	6.483
1080.00	369.12	395.30	7.193	7.787	3-M2t	5.917	4.138	5.191	5.801	9.947	6.795
1260.00	378.16	395.50	7.357	8.385	7-M2t	5.917	4.193	5.610	6.220	9.747	7.069
1440.00	386.20	395.66	7.505	8.976	4-FFf	5.917	4.241	5.917	6.604	9.788	7.314
1620.00	392.96	395.81	7.632	9.477	4-FFf	5.917	4.281	5.917	6.960	9.960	7.538
1800.00	398.82	395.94	7.743	9.938	4-FFf	5.917	4.315	5.917	7.292	10.108	7.743

****

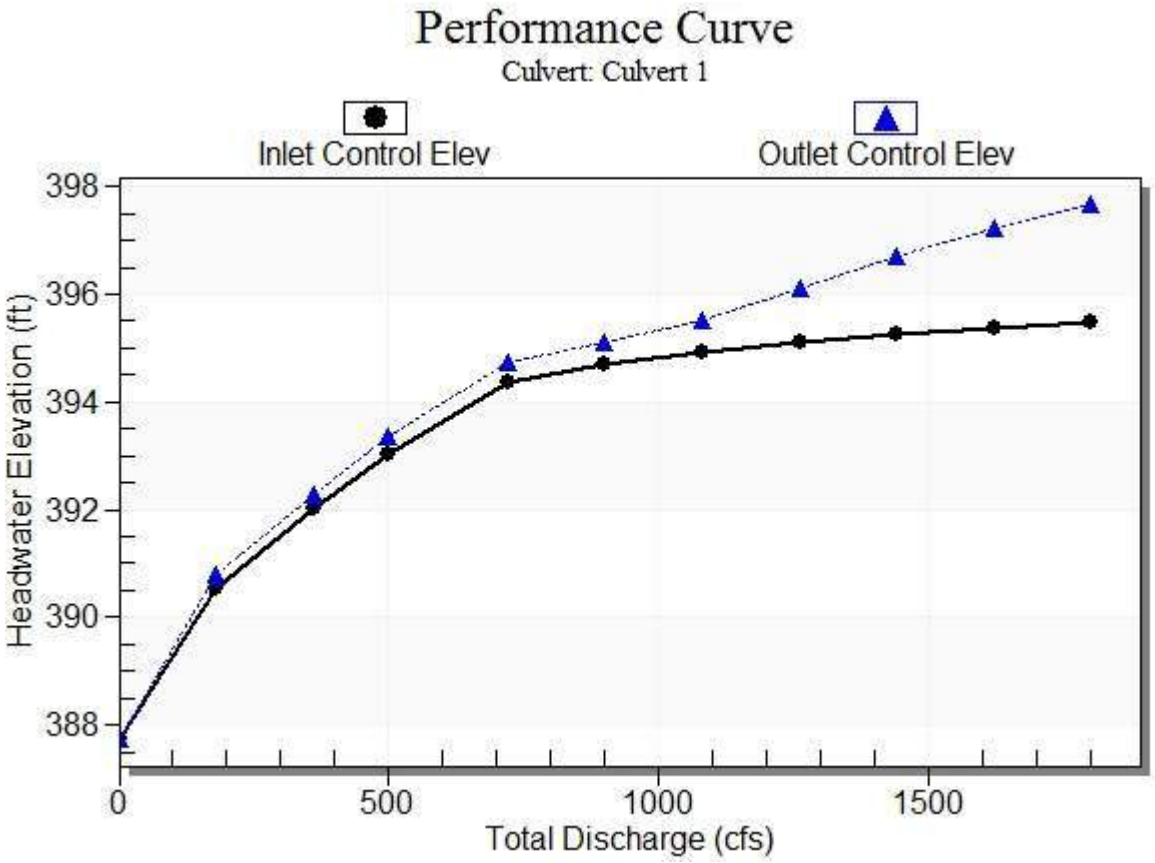
Straight Culvert

Inlet Elevation (invert): 387.74 ft, Outlet Elevation (invert): 386.61 ft

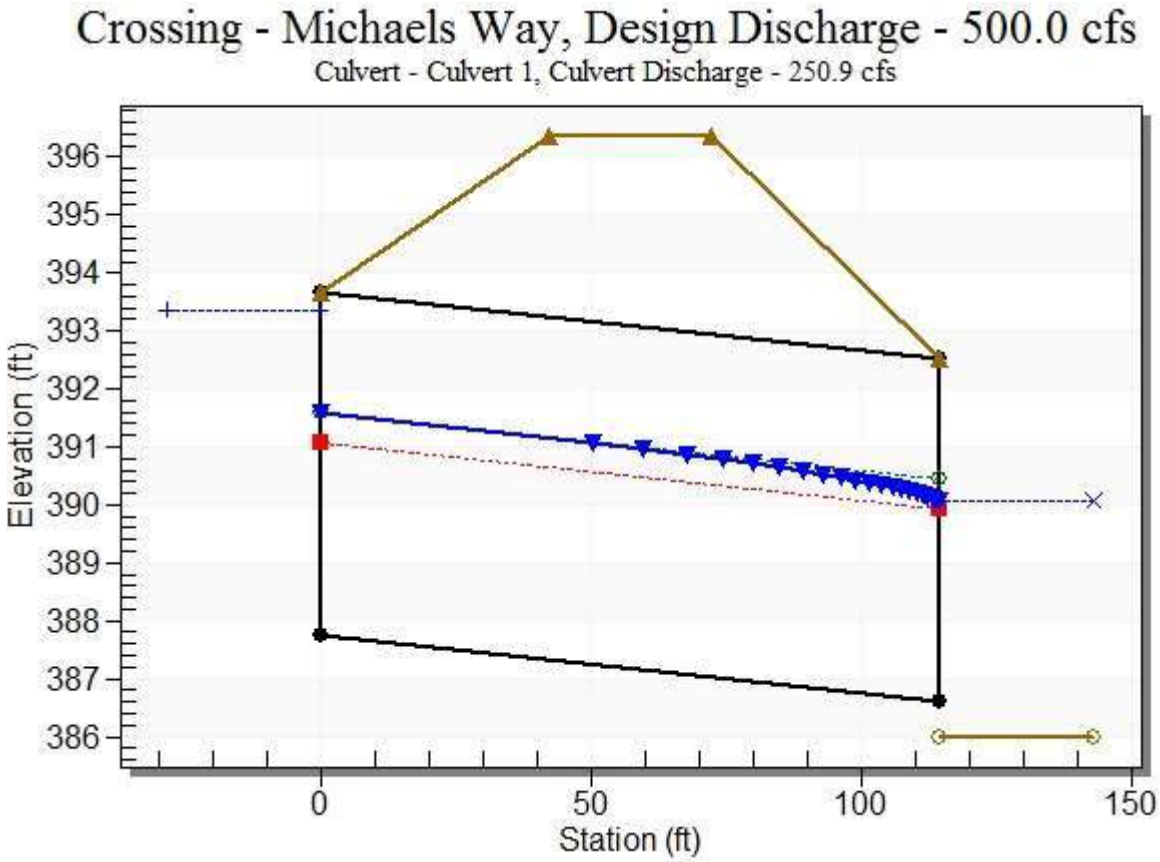
Culvert Length: 114.51 ft, Culvert Slope: 0.0099

****

Culvert Performance Curve Plot: Culvert 1



Water Surface Profile Plot for Culvert: Culvert 1



Site Data - Culvert 1

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 387.74 ft

Outlet Station: 114.50 ft

Outlet Elevation: 386.61 ft

Number of Barrels: 1

Culvert Data Summary - Culvert 1

Barrel Shape: Pipe Arch

Barrel Span: 103.00 in

Barrel Rise: 71.00 in

Barrel Material: Steel or Aluminum

Embedment: 0.00 in

Barrel Manning's n: 0.0280

Culvert Type: Straight

Inlet Configuration: Headwall

Inlet Depression: None

Culvert Notes: Culvert 2

Table 3 - Culvert Summary Table: Culvert 2

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	387.74	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
180.00	89.05	390.78	2.757	3.007	2-M2c	1.951	1.893	1.893	2.454	6.992	4.225
360.00	178.84	392.30	4.243	4.530	3-M2t	2.949	2.779	2.863	3.463	8.517	5.099
500.00	249.14	393.36	5.275	5.594	3-M2t	3.772	3.318	3.456	4.056	9.662	5.562
720.00	335.46	394.73	6.611	6.970	3-M2t	5.917	3.922	4.214	4.814	10.705	6.118
900.00	354.88	395.07	6.941	7.353	3-M2t	5.917	4.050	4.737	5.337	10.234	6.483
1080.00	368.84	395.30	7.187	7.751	3-M2t	5.917	4.137	5.201	5.801	9.927	6.795
1260.00	377.94	395.50	7.351	8.345	7-M2t	5.917	4.192	5.620	6.220	9.733	7.069
1440.00	386.11	395.66	7.502	8.946	4-FFf	5.917	4.241	5.917	6.604	9.786	7.314
1620.00	393.01	395.81	7.632	9.450	4-FFf	5.917	4.282	5.917	6.960	9.961	7.538
1800.00	399.02	395.94	7.746	9.914	4-FFf	5.917	4.317	5.917	7.292	10.113	7.743

****

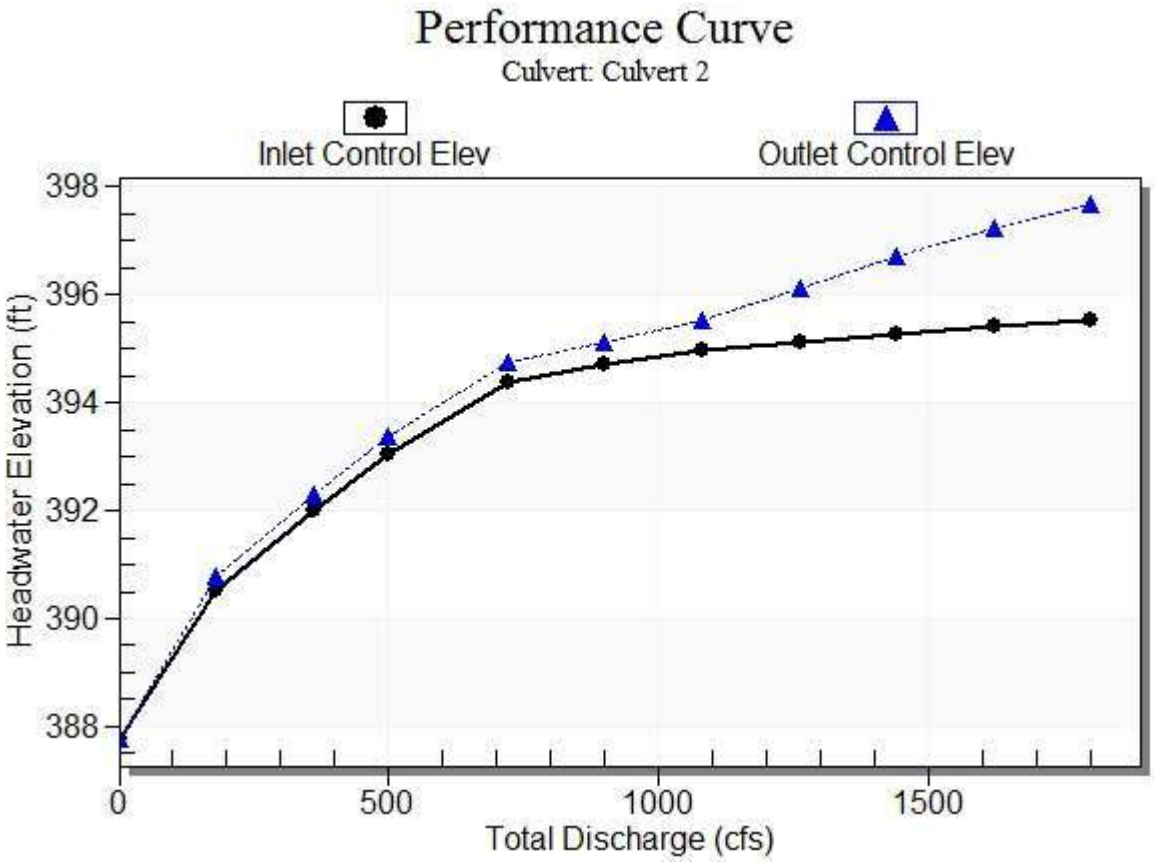
Straight Culvert

Inlet Elevation (invert): 387.77 ft, Outlet Elevation (invert): 386.60 ft

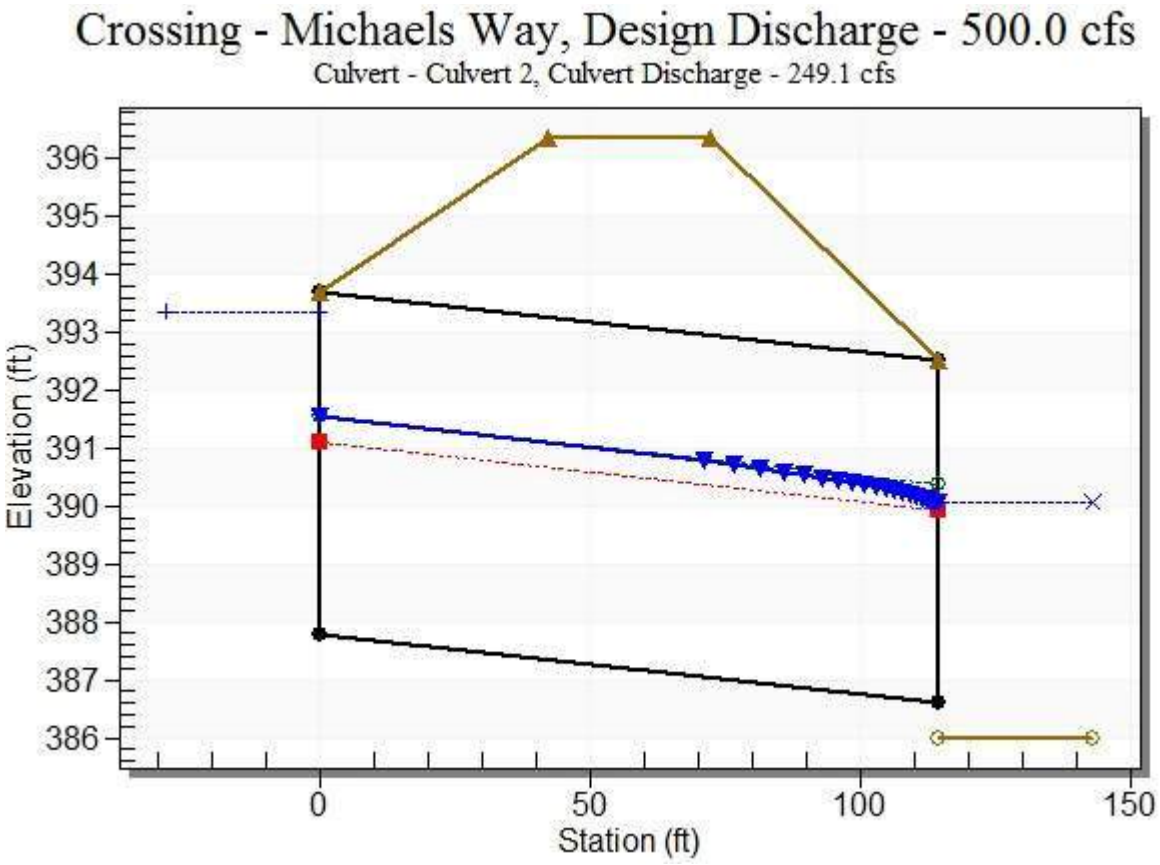
Culvert Length: 114.61 ft, Culvert Slope: 0.0102

****

Culvert Performance Curve Plot: Culvert 2



Water Surface Profile Plot for Culvert: Culvert 2



Site Data - Culvert 2

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 387.77 ft

Outlet Station: 114.60 ft

Outlet Elevation: 386.60 ft

Number of Barrels: 1

Culvert Data Summary - Culvert 2

Barrel Shape: Pipe Arch

Barrel Span: 103.00 in

Barrel Rise: 71.00 in

Barrel Material: Steel or Aluminum

Embedment: 0.00 in

Barrel Manning's n: 0.0280

Culvert Type: Straight

Inlet Configuration: Headwall

Inlet Depression: None

Table 4 - Downstream Channel Rating Curve (Crossing: Michaels Way)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	386.00	0.00	0.00	0.00	0.00
180.00	388.45	2.45	4.22	0.77	0.57
360.00	389.46	3.46	5.10	1.08	0.59
500.00	390.06	4.06	5.56	1.27	0.61
720.00	390.81	4.81	6.12	1.50	0.62
900.00	391.34	5.34	6.48	1.67	0.63
1080.00	391.80	5.80	6.79	1.81	0.64
1260.00	392.22	6.22	7.07	1.94	0.64
1440.00	392.60	6.60	7.31	2.06	0.65
1620.00	392.96	6.96	7.54	2.17	0.65
1800.00	393.29	7.29	7.74	2.28	0.66

Tailwater Channel Data - Michaels Way

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 10.00 ft

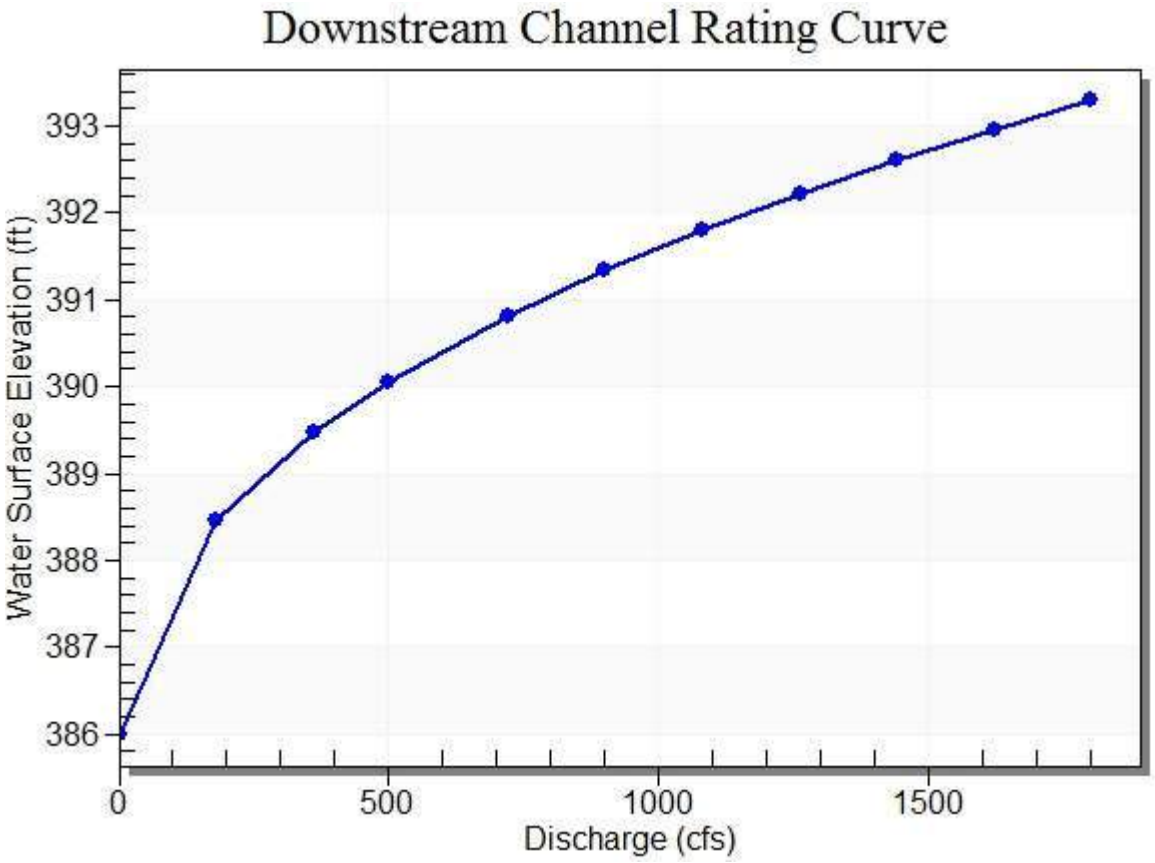
Side Slope (H:V): 3.00 (_:1)

Channel Slope: 0.0050

Channel Manning's n: 0.0350

Channel Invert Elevation: 386.00 ft

Tailwater Rating Curve Plot for Crossing: Michaels Way



Roadway Data for Crossing: Michaels Way

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Irregular Roadway Cross-Section:

Coord No.	Station (ft)	Elevation (ft)
0	0.00	396.38
1	26.10	395.93
2	49.60	395.58
3	91.40	394.91
4	117.40	394.75
5	144.90	394.50
6	186.30	394.40
7	211.94	394.38
8	238.63	394.59
9	353.45	396.00

Roadway Surface: Paved

Roadway Top Width: 30.00 ft

1

```
 ******************80-80 LIST OF INPUT DATA FOR TR-20
 HYDROLOGY******************

 JOB TR-20                                                        NOPLOTS
 TITLE     Valley Mede Ultimate LU, Fair Cond, Subdivided
 TITLE     Option E, Pond 1
  2 XSECTN   002                  1.0      382.34
  8                            380.31        0.00        0.00
  8                            381.01       17.58        8.61
  8                            381.71       57.72       18.68
  8                            382.41       87.42       30.14
  8                            383.11      104.50       69.28
  8                            383.81      263.75      127.12
  8                            384.51      485.21      191.79
  8                            385.21      756.68      264.06
  8                            385.91     1097.04      343.49
  8                            386.61     1504.59      429.14
  8                            387.31     1935.42      521.71
  8                            388.01     2404.29      624.39
  8                            388.71     3010.65      736.45
  8                            389.41     3695.34      856.11
  8                            390.11     4464.50      983.39
  9 ENDTBL
  2 XSECTN   007                  1.0      368.32
  8                            365.53        0.00        0.00
  8                            366.13        2.41        1.85
  8                            366.73       13.26        5.96
  8                            367.33       32.81       11.12
  8                            367.93       56.86       17.33
  8                            368.53       58.83       27.09
  8                            369.13       87.92       53.94
  8                            369.73      182.33       92.49
  8                            370.33      312.70      139.48
  8                            370.93      486.35      195.36
  8                            371.53      699.83      260.83
  8                            372.13      968.75      336.90
  8                            372.73     1275.43      425.26
  8                            373.33     1614.79      529.26
  8                            373.93     2124.43      651.29
  8                            374.53     2756.14      782.07
  8                            375.13     3501.54      920.13
  8                            375.73     4298.02     1065.04
  9 ENDTBL
  2 XSECTN   010                  1.0      356.35
  8                            348.10        0.00        0.00
  8                            348.70        5.42        4.43
  8                            349.30       24.01       11.59
  8                            349.90       53.17       19.81
  8                            350.50       92.55       29.09
  8                            351.10      142.34       39.42
  8                            351.70      165.15       51.53
  8                            352.90      175.05      116.35
  8                            353.50      306.92      180.56
1

 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************
```

```
  8                          354.10      516.89      254.74
  8                          354.70      768.52      334.49
  8                          355.30     1065.05      420.62
  8                          355.90     1408.22      513.66
  8                          356.50     1807.31      613.67
  8                          357.10     2263.93      719.75
  8                          357.70     2774.44      831.81
  8                          358.30     3358.23      949.51
  9 ENDTBL
  2 XSECTN   014               1.0      379.93
  8                          376.15        0.00        0.00
  8                          377.05        8.36        4.84
  8                          377.95       50.12       15.58
  8                          378.85      120.19       28.42
  8                          380.65      159.08       88.20
  8                          381.55      355.19      161.67
  8                          382.45      675.00      251.36
  8                          383.35     1104.38      349.36
  8                          384.25     1615.02      456.11
  8                          385.15     2234.68      571.32
  8                          386.05     2973.63      693.77
  8                          386.95     3792.19      822.71
  8                          387.85     4704.26      958.82
  8                          388.75     5747.20     1101.81
  8                          389.65     6882.68     1250.71
  8                          390.55     8093.30     1406.32
  8                          391.45     9366.77     1569.98
  8                          392.35    10762.79     1742.42
  9 ENDTBL
  2 XSECTN   019               1.0      357.27
  8                          353.42        0.00        0.00
  8                          354.17        5.09        3.18
  8                          354.92       23.50        9.02
  8                          355.67       54.37       16.42
  8                          357.17       67.66       39.26
  8                          357.92      141.61       78.64
  8                          358.67      290.86      152.96
  8                          359.42      578.12      249.05
  8                          360.17      989.10      363.75
  8                          360.92     1520.99      494.51
  8                          361.67     2178.56      640.80
  8                          362.42     2981.64      802.19
  8                          363.17     3939.75      976.51
  8                          363.92     5049.66     1162.33
  8                          364.67     6325.86     1358.62
  8                          365.42     7734.95     1564.62
  9 ENDTBL
  2 XSECTN   023               1.0      344.26
  8                          340.73        0.00        0.00
  8                          341.48        9.64        6.59
1


 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

  8                          342.23       39.11       16.56
  8                          342.98       85.34       28.29
  8                          344.48      146.45       57.99
  8                          345.23      162.66       92.62
  8                          345.98      273.72      148.97
  8                          346.73      453.62      224.13
  8                          347.48      714.72      314.46
```

```
  8                          348.23     1049.51      417.50
  8                          348.98     1470.76      532.23
  8                          349.73     1960.34      657.45
  8                          350.48     2559.41      793.58
  8                          351.23     3222.20      938.75
  8                          351.98     3947.27     1094.98
  9 ENDTBL
  3 STRUCT      01
  8                    387.74      0.00        0.000
  8                    389.41      62.00       3.834
  8                    390.20      124.00      5.852
  8                    390.83      186.00      7.566
  8                    391.39      248.00      9.089
  8                    391.82      300.00      10.259
  8                    392.39      372.00      11.898
  8                    392.86      434.00      13.284
  8                    393.33      496.00      14.669
  8                    393.82      558.00      16.114
  8                    394.31      620.00      17.612
  8                    394.81      752.00      19.173
  8                    395.05      884.00      19.928
  8                    395.14      950.00      20.220
  8                    395.33      1100.00     20.835
  8                    395.36      1125.00     20.932
  8                    395.71      1500.00     22.066
  8                    396.00      1890.00     22.700
  9 ENDTBL
  3 STRUCT      02
  8                    369.00      0.00        0.000
  8                    372.66      146.0       5.37
  8                    373.87      238.0       7.47
  8                    377.15      547.0       14.34
  8                    380.89      994.0       24.20
  8                    382.56      1329.0      29.44
  8                    384.07      1730.0      34.57
  9 ENDTBL
  3 STRUCT      03
  8                    368.00      0.000       0.000
  8                    370.83      88.00       8.93
  8                    371.84      142.00      12.29
  8                    375.58      322.00      26.10
  8                    378.54      747.00      38.54
  8                    379.06      1159.00     41.00
1
```

```
 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************

  8                    379.64      1584.00     43.75
  9 ENDTBL
  3 STRUCT      04
  8                    367.00      0.000       0.000
  8                    370.70      76.00       5.00
  8                    371.69      127.00      6.53
  8                    375.57      276.00      13.47
  8                    378.51      678.00      20.96
  8                    379.02      1068.00     22.63
  8                    379.60      1512.00     24.53
  9 ENDTBL
  3 STRUCT      05
  8                    400.00      0.000       0.000
  8                    401.30      9.          2.447
```

```
  8                     401.96      18.         3.689
  8                     402.52      27.         4.847
  8                     403.05      36.         5.949
  8                     403.63      45.         7.156
  8                     403.99      50.         7.905
  8                     405.13      63.         10.508
  8                     406.10      72.         12.746
  8                     408.44      90.         18.677
  9 ENDTBL
  5 RAINFL 5             .1
  8          0.0000     0.0013      0.0023      0.0034      0.0044
  8          0.0055     0.0065      0.0076      0.0087      0.0098
  8          0.0109     0.0121      0.0132      0.0143      0.0155
  8          0.0167     0.0178      0.0190      0.0202      0.0214
  8          0.0226     0.0238      0.0251      0.0263      0.0276
  8          0.0288     0.0301      0.0314      0.0327      0.0340
  8          0.0353     0.0366      0.0379      0.0393      0.0406
  8          0.0420     0.0434      0.0447      0.0461      0.0475
  8          0.0489     0.0504      0.0518      0.0532      0.0547
  8          0.0562     0.0576      0.0591      0.0606      0.0621
  8          0.0636     0.0651      0.0667      0.0682      0.0697
  8          0.0713     0.0729      0.0745      0.0760      0.0776
  8          0.0793     0.0809      0.0826      0.0843      0.0861
  8          0.0879     0.0898      0.0916      0.0936      0.0955
  8          0.0975     0.0996      0.1017      0.1038      0.1060
  8          0.1082     0.1104      0.1127      0.1150      0.1174
  8          0.1198     0.1223      0.1247      0.1273      0.1298
  8          0.1324     0.1351      0.1378      0.1405      0.1432
  8          0.1461     0.1490      0.1521      0.1554      0.1588
  8          0.1623     0.1660      0.1699      0.1739      0.1780
  8          0.1823     0.1868      0.1914      0.1961      0.2010
  8          0.2061     0.2117      0.2179      0.2247      0.2321
  8          0.2400     0.2490      0.2591      0.2702      0.2825
  8          0.2955     0.3157      0.3370      0.3662      0.4067
  8          0.4766     0.5933      0.6338      0.6630      0.6843
  8          0.7045     0.7176      0.7298      0.7409      0.7510
1
```

```
 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************

  8          0.7600     0.7679      0.7753      0.7821      0.7883
  8          0.7939     0.7990      0.8039      0.8086      0.8132
  8          0.8177     0.8220      0.8261      0.8301      0.8340
  8          0.8377     0.8412      0.8446      0.8479      0.8510
  8          0.8540     0.8568      0.8595      0.8622      0.8649
  8          0.8676     0.8702      0.8727      0.8753      0.8778
  8          0.8802     0.8826      0.8850      0.8873      0.8896
  8          0.8918     0.8940      0.8962      0.8983      0.9004
  8          0.9025     0.9045      0.9064      0.9084      0.9103
  8          0.9121     0.9139      0.9157      0.9174      0.9191
  8          0.9208     0.9224      0.9240      0.9256      0.9271
  8          0.9287     0.9303      0.9318      0.9334      0.9349
  8          0.9364     0.9379      0.9394      0.9409      0.9424
  8          0.9439     0.9453      0.9468      0.9482      0.9496
  8          0.9511     0.9525      0.9539      0.9553      0.9566
  8          0.9580     0.9594      0.9607      0.9621      0.9634
  8          0.9647     0.9660      0.9673      0.9686      0.9699
  8          0.9712     0.9724      0.9737      0.9749      0.9762
  8          0.9774     0.9786      0.9798      0.9810      0.9822
  8          0.9834     0.9845      0.9857      0.9868      0.9879
  8          0.9891     0.9902      0.9913      0.9924      0.9935
```

```
  8          0.9945      0.9956      0.9967      0.9977      0.9987
  8          1.0000      1.0000      1.0000      1.0000      1.0000
  9 ENDTBL
  6 RUNOFF 1 001       1 0.4053      83.135       0.444      1        1  DA5
  6 RESVOR 2    01 1   4 387.74                              1        1  Mway
  6 REACH  3  02   4   2 3113                                1        1
  6 RUNOFF 1 003       3 0.0673      77.021       0.303      1        1  DA6
  6 REACH  3  02   3   4 1954                                1        1
  6 ADDHYD 4  04   2 4 5                                     1        1
  6 RUNOFF 1 005       2 0.1867      76.388       0.530      1        1  DA4
  6 ADDHYD 4  06   5 2 4                                     1        1
  6 REACH  3  07   4   1 2088                                1        1
  6 RUNOFF 1 008       2 0.2020      75.944       0.428      1        1  DA3
  6 ADDHYD 4 009   1 2 3                                     1        1
  6 REACH  3  10   3   1 3852                                1        1
  6 RUNOFF 1 011       2 0.2366      76.760       0.443      1        1  DA2
  6 ADDHYD 4 012   1 2 6                                     1        1
  6 RUNOFF 1 013       1 0.3775      78.713       0.667      1        1  DA10
  6 REACH  3  14   1   2 2484                                1        1
  6 RUNOFF 1 015       3 0.0886      84.806       0.443      1        1  DA9
  6 ADDHYD 4 016   2 3 4                                     1        1
  6 RUNOFF 1 017       3 0.0693      94.066       0.151      1        1  DA8
  6 ADDHYD 4 018   4 3 2                                     1        1
  6 REACH  3 019   2   1 4092                                1        1
  6 RUNOFF 1 020       2 0.3284      87.933       0.277      1        1  DA7
  6 ADDHYD 4 021   1 2 7                                     1        1
  6 ADDHYD 4 022   6 7 1                                     1        1
  6 REACH  3  23   1   2 586                                 1        1
  6 RUNOFF 1 024       3 0.0200      72.029       0.277      1        1  DA1
1


 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

  6 ADDHYD 4 025   2 3 4                                     1        1
    ENDATA
  7 INCREM 6                    0.05
  7 COMPUT 7 001   025            0.0        2.64         1.05 2  1   1
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        3.19         1.05 2  1   2
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        4.91         1.05 2  1   10
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        7.23         1.05 2  1   50
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        8.47         1.05 2  1   98
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        9.88         1.05 2  1   99
    ENDCMP 1
    ENDJOB 2

 ******************************END OF 80-80
 LIST*****************************
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 1
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```
 EXECUTIVE CONTROL INCREM    MAIN TIME INCREMENT =   .050 HOURS


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  2.64       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. = 1            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                         222.9                       (RUNOFF)
       20.13                           7.5                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.17 WATERSHED INCHES;     306 CFS-HRS;      25.3 ACRE-
                   FEET.


 OPERATION RESVOR   STRUCTURE  1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.64                         131.5                        390.28

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.17 WATERSHED INCHES;     306 CFS-HRS;      25.3 ACRE-
                   FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       13.07                         100.8                        382.96

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.17 WATERSHED INCHES;     306 CFS-HRS;      25.3 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.25                          29.6                       (RUNOFF)
       20.10                           1.0 *                     (RUNOFF)
                                           * FIRST POINT OF FLAT PEAK

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .83 WATERSHED INCHES;      36 CFS-HRS;       3.0 ACRE-
                    FEET.
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```

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	24.2	381.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.83 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.01	109.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.12 WATERSHED INCHES; 342 CFS-HRS; 28.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	60.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.80 WATERSHED INCHES; 96 CFS-HRS; 8.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.79	138.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 438 CFS-HRS; 36.2 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.14	129.7	369.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 438 CFS-HRS; 36.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
12.34	70.2		(RUNOFF)
23.13	2.4		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.78 WATERSHED INCHES; 101 CFS-HRS; 8.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
12.97	151.0		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.97 WATERSHED INCHES; 540 CFS-HRS; 44.6 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
13.22	147.6	351.24	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.97 WATERSHED INCHES; 540 CFS-HRS; 44.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
12.35	86.0		(RUNOFF)
20.13	3.6		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.82 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
12.72	174.0		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.94 WATERSHED INCHES; 664 CFS-HRS; 54.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

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    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.50                           128.9                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .92 WATERSHED INCHES;     223 CFS-HRS;      18.5 ACRE-
                    FEET.


 OPERATION REACH    XSECTION  14

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.64                           121.2                         378.90

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .92 WATERSHED INCHES;     223 CFS-HRS;      18.5 ACRE-
                    FEET.


 OPERATION RUNOFF   XSECTION  15

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                            53.2                        (RUNOFF)
       20.13                             1.7                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.28 WATERSHED INCHES;      73 CFS-HRS;       6.0 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION  16

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.57                           154.5                        (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .99 WATERSHED INCHES;     296 CFS-HRS;      24.5 ACRE-
                    FEET.


 OPERATION RUNOFF   XSECTION  17

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.14                            99.0                        (RUNOFF)
       17.34                             2.2                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   2.00 WATERSHED INCHES;      89 CFS-HRS;       7.4 ACRE-
                   FEET.
```

OPERATION ADDHYD XSECTION 18
1
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	166.7	(NULL)
12.53	176.8	(NULL)
20.00	9.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.10 WATERSHED INCHES; 381 CFS-HRS; 31.5 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.10	131.5	357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.09 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	288.1	(RUNOFF)
18.66	7.5	(RUNOFF)
21.98	6.0	(RUNOFF)
24.03	5.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.50 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	317.4	(NULL)
12.88	179.8	(NULL)
20.04	17.1	(NULL)
20.58	16.4	(NULL)
23.71	13.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.24 WATERSHED INCHES; 693 CFS-HRS; 57.3 ACRE-FEET.

```
 OPERATION ADDHYD   XSECTION  22

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.26                         435.8                        (NULL)
1
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.06 WATERSHED INCHES;    1340 CFS-HRS;     110.7 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  23

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.37                         415.6                         346.57

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.06 WATERSHED INCHES;    1337 CFS-HRS;     110.5 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  24

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.24                           6.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   .60 WATERSHED INCHES;       8 CFS-HRS;        .6 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION  25

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.37                         420.4                        (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.05 WATERSHED INCHES;    1345 CFS-HRS;     111.2 ACRE-
                  FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   1


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  3.19       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. = 2            RAIN TABLE NO. = 5
```

```
 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                         306.8                       (RUNOFF)
1
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.61 WATERSHED INCHES;     421 CFS-HRS;      34.8 ACRE-
                  FEET.


 OPERATION RESVOR   STRUCTURE  1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.59                         198.6                        390.94

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.61 WATERSHED INCHES;     421 CFS-HRS;      34.8 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       13.02                         152.6                        383.32

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.61 WATERSHED INCHES;     421 CFS-HRS;      34.8 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.24                          44.4                       (RUNOFF)
       24.03                           1.1                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.21 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.42                          37.7                        381.36
       24.13                           1.0                        380.35

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.20 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
```

FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.97	166.0	(NULL)

1
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 473 CFS-HRS; 39.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	91.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.17 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.78	209.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.44 WATERSHED INCHES; 614 CFS-HRS; 50.7 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.07	198.6	369.80

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.44 WATERSHED INCHES; 614 CFS-HRS; 50.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	106.9	(RUNOFF)
20.14	4.0	(RUNOFF)
23.13	3.3	(RUNOFF)

```
   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.14 WATERSHED INCHES;     149 CFS-HRS;      12.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.89                         231.7                       (NULL)
1
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   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.37 WATERSHED INCHES;     762 CFS-HRS;      63.0 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.45                         201.2                        353.02

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.37 WATERSHED INCHES;     762 CFS-HRS;      63.0 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  11

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.34                         128.7                      (RUNOFF)
      20.13                           4.8                      (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.19 WATERSHED INCHES;     182 CFS-HRS;      15.0 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  12

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.30                         226.8                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.33 WATERSHED INCHES;     944 CFS-HRS;      78.0 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  13

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
```

ELEVATION(FEET)
12.48 188.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.31 WATERSHED INCHES; 319 CFS-HRS; 26.4 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.74 153.2 380.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.31 WATERSHED INCHES; 319 CFS-HRS; 26.4 ACRE-FEET.

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OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.32 72.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.73 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.65 189.9 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.39 WATERSHED INCHES; 418 CFS-HRS; 34.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.14 123.7 (RUNOFF)
15.84 3.5 (RUNOFF)
19.43 2.1 (RUNOFF)
19.74 2.0 (RUNOFF)
20.05 2.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.51 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	212.0	(NULL)
12.56	213.2	(NULL)
20.00	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.50 WATERSHED INCHES; 518 CFS-HRS; 42.8 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.10	169.9	358.06

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.48 WATERSHED INCHES; 512 CFS-HRS; 42.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	380.2	(RUNOFF)
18.66	9.4	(RUNOFF)
20.66	8.3	(RUNOFF)
21.98	7.6	(RUNOFF)
24.03	6.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.98 WATERSHED INCHES; 420 CFS-HRS; 34.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	436.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.66 WATERSHED INCHES; 926 CFS-HRS; 76.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.26                        600.1                      (NULL)
      13.00                        451.0                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.44 WATERSHED INCHES;    1827 CFS-HRS;     151.0 ACRE-
                FEET.


 OPERATION REACH    XSECTION  23

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.36                        577.7                      347.09
      13.05                        450.9                      346.72

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.44 WATERSHED INCHES;    1824 CFS-HRS;     150.7 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  24
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   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                         10.0                      (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 .92 WATERSHED INCHES;      12 CFS-HRS;       1.0 ACRE-
                 FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.35                        585.7                      (NULL)
      13.03                        453.0                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.44 WATERSHED INCHES;    1836 CFS-HRS;     151.7 ACRE-
                FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   2


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
   STARTING TIME =   .00       RAIN DEPTH =  4.91       RAIN DURATION =  1.00
   ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
   ALTERNATE NO. = 1           STORM NO. =10            RAIN TABLE NO. = 5
```

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	595.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 812 CFS-HRS; 67.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.52	432.0	392.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 811 CFS-HRS; 67.0 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.79	362.9	384.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 811 CFS-HRS; 67.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	96.3	(RUNOFF)
21.97	2.2	(RUNOFF)
23.12	2.0	(RUNOFF)
24.03	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.55 WATERSHED INCHES; 111 CFS-HRS; 9.1 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.42	80.6	382.25
20.20	2.5 *	380.41
24.13	1.9	380.38

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.55 WATERSHED INCHES; 111 CFS-HRS; 9.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.74	408.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.02 WATERSHED INCHES; 921 CFS-HRS; 76.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	202.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.49 WATERSHED INCHES; 300 CFS-HRS; 24.8 ACRE-FEET.

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OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	543.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.87 WATERSHED INCHES; 1222 CFS-HRS; 101.0 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.82	508.7	370.99

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.87 WATERSHED INCHES; 1221 CFS-HRS; 100.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)
12.32 238.2 (RUNOFF)
20.13 7.4 (RUNOFF)
23.13 5.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.45 WATERSHED INCHES; 320 CFS-HRS; 26.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.69 609.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.77 WATERSHED INCHES; 1541 CFS-HRS; 127.4 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
13.08 531.7 354.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.77 WATERSHED INCHES; 1539 CFS-HRS; 127.2 ACRE-FEET.

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OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.32 283.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.53 WATERSHED INCHES; 386 CFS-HRS; 31.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.95 608.8 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.72 WATERSHED INCHES; 1925 CFS-HRS; 159.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	397.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 658 CFS-HRS; 54.3 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.70	331.9	381.44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 658 CFS-HRS; 54.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	135.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.26 WATERSHED INCHES; 187 CFS-HRS; 15.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	403.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 844 CFS-HRS; 69.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	199.4	(RUNOFF)
15.84	5.5	(RUNOFF)
17.34	4.3	(RUNOFF)
20.05	3.2	(RUNOFF)
20.61	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.12 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	397.3	(NULL)
12.56	441.9	(NULL)
19.98	21.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.87 WATERSHED INCHES; 991 CFS-HRS; 81.9 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.98	361.2	358.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.84 WATERSHED INCHES; 981 CFS-HRS; 81.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	670.8	(RUNOFF)
18.66	15.4	(RUNOFF)
20.11	14.2	(RUNOFF)
20.66	13.5	(RUNOFF)
21.98	12.3	(RUNOFF)
23.11	11.3	(RUNOFF)
24.03	10.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.57 WATERSHED INCHES; 757 CFS-HRS; 62.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	824.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.08 WATERSHED INCHES; 1716 CFS-HRS; 141.8 ACRE-

FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	1268.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 3539 CFS-HRS; 292.5 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	1246.9	348.58

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.79 WATERSHED INCHES; 3534 CFS-HRS; 292.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	24.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.13 WATERSHED INCHES; 27 CFS-HRS; 2.3 ACRE-FEET.

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OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	1265.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.78 WATERSHED INCHES; 3560 CFS-HRS; 294.2 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 25
STARTING TIME = .00 RAIN DEPTH = 7.23 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .050 HOURS
ALTERNATE NO. = 1 STORM NO. =50 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	995.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.25 WATERSHED INCHES; 1374 CFS-HRS; 113.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	820.1	394.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.20 WATERSHED INCHES; 1360 CFS-HRS; 112.4 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.68	662.3	384.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.18 WATERSHED INCHES; 1355 CFS-HRS; 112.0 ACRE-FEET.

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OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	172.1	(RUNOFF)
20.12	4.1	(RUNOFF)
23.77	3.0	(RUNOFF)
24.03	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.57 WATERSHED INCHES; 199 CFS-HRS; 16.4 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	117.9	383.17

```
   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.57 WATERSHED INCHES;     199 CFS-HRS;      16.4 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   4

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.66                         775.4                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.09 WATERSHED INCHES;    1553 CFS-HRS;     128.3 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.37                         365.2                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.50 WATERSHED INCHES;     542 CFS-HRS;      44.8 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   6

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.57                        1038.4                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.92 WATERSHED INCHES;    2094 CFS-HRS;     173.1 ACRE-
                FEET.
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 OPERATION REACH    XSECTION   7

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.77                         962.5                        372.12

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.91 WATERSHED INCHES;    2089 CFS-HRS;     172.6 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   8

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
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      12.31                        432.9                       (RUNOFF)
      20.13                         12.0                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.45 WATERSHED INCHES;     580 CFS-HRS;      47.9 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.68                        1151.5                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.80 WATERSHED INCHES;    2668 CFS-HRS;     220.5 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.02                        1025.5                        355.22

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.78 WATERSHED INCHES;    2656 CFS-HRS;     219.5 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  11

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                         509.4                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.54 WATERSHED INCHES;     694 CFS-HRS;      57.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  12
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.92                        1165.6                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.73 WATERSHED INCHES;    3348 CFS-HRS;     276.7 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  13
```

```
    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.46                          698.2                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.76 WATERSHED INCHES;    1160 CFS-HRS;      95.9 ACRE-
                   FEET.


 OPERATION REACH    XSECTION  14

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.65                          615.0                         382.28

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.76 WATERSHED INCHES;    1160 CFS-HRS;      95.9 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION  15

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                          222.6                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   5.41 WATERSHED INCHES;     309 CFS-HRS;      25.6 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION  16

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.58                          740.7                        (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.84 WATERSHED INCHES;    1455 CFS-HRS;     120.2 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION  17
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    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.14                          300.6                        (RUNOFF)
       15.84                            8.2                        (RUNOFF)
       17.34                            6.3                        (RUNOFF)
       18.61                            5.1                        (RUNOFF)
       18.84                            5.0                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   6.29 WATERSHED INCHES;     281 CFS-HRS;      23.3 ACRE-
```

FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	803.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.85 WATERSHED INCHES; 1675 CFS-HRS; 138.4 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.92	690.9	359.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.81 WATERSHED INCHES; 1663 CFS-HRS; 137.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	1066.0	(RUNOFF)
18.66	23.4	(RUNOFF)
20.11	21.4	(RUNOFF)
20.66	20.5	(RUNOFF)
21.98	18.6	(RUNOFF)
23.11	17.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.72 WATERSHED INCHES; 1213 CFS-HRS; 100.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	1338.7	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.11 WATERSHED INCHES; 2846 CFS-HRS; 235.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

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   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.28                       2168.2                      (NULL)
      12.85                       2043.0                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.76 WATERSHED INCHES;    6028 CFS-HRS;     498.1 ACRE-
                FEET.


 OPERATION REACH    XSECTION  23

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.35                       2153.6                       349.97
      12.91                       2041.9                       349.83

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.76 WATERSHED INCHES;    6020 CFS-HRS;     497.5 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  24

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                        47.3                      (RUNOFF)
      20.66                         1.1                      (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.03 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.35                       2188.1                      (NULL)
      12.90                       2051.0                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.75 WATERSHED INCHES;    6070 CFS-HRS;     501.6 ACRE-
                FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   4
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 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  8.47       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =98            RAIN TABLE NO. = 5
```

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	1200.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.39 WATERSHED INCHES; 1672 CFS-HRS; 138.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	1112.9	395.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.32 WATERSHED INCHES; 1654 CFS-HRS; 136.7 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.60	868.7	385.44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.30 WATERSHED INCHES; 1648 CFS-HRS; 136.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	212.8	(RUNOFF)
18.67	5.3	(RUNOFF)
21.98	4.2	(RUNOFF)
24.03	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.70 WATERSHED INCHES; 248 CFS-HRS; 20.5 ACRE-FEET.

OPERATION REACH XSECTION 2
1
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.51	154.0	383.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.70 WATERSHED INCHES; 248 CFS-HRS; 20.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.58	1016.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.21 WATERSHED INCHES; 1893 CFS-HRS; 156.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	457.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.63 WATERSHED INCHES; 679 CFS-HRS; 56.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.53	1384.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.03 WATERSHED INCHES; 2566 CFS-HRS; 212.1 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.71	1256.2	372.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.01 WATERSHED INCHES; 2559 CFS-HRS; 211.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	539.7	(RUNOFF)

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```
   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.57 WATERSHED INCHES;     727 CFS-HRS;      60.0 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.64                        1516.6                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.90 WATERSHED INCHES;    3280 CFS-HRS;     271.1 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.95                        1337.6                        355.78

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.87 WATERSHED INCHES;    3265 CFS-HRS;     269.8 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  11

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                         630.0                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.67 WATERSHED INCHES;     866 CFS-HRS;      71.6 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  12

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.86                        1529.2                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.82 WATERSHED INCHES;    4125 CFS-HRS;     340.9 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  13

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.45                         862.2                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.91 WATERSHED INCHES;    1440 CFS-HRS;     119.0 ACRE-
                FEET.
1
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OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.63	771.1	382.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.91 WATERSHED INCHES; 1439 CFS-HRS; 118.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	270.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.56 WATERSHED INCHES; 375 CFS-HRS; 31.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	926.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.94 WATERSHED INCHES; 1787 CFS-HRS; 147.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	353.6	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.4	(RUNOFF)
20.84	5.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.47 WATERSHED INCHES; 334 CFS-HRS; 27.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	1002.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.95 WATERSHED INCHES; 2057 CFS-HRS; 170.0 ACRE-FEET.
1

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OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.85	872.5	359.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.92 WATERSHED INCHES; 2044 CFS-HRS; 168.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	1270.7	(RUNOFF)
18.66	27.6	(RUNOFF)
20.11	25.3	(RUNOFF)
20.66	24.2	(RUNOFF)
21.98	22.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.87 WATERSHED INCHES; 1456 CFS-HRS; 120.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	1683.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.23 WATERSHED INCHES; 3470 CFS-HRS; 286.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.29	2767.0	(NULL)
12.77	2647.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.85 WATERSHED INCHES; 7411 CFS-HRS; 612.4 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)

```
      12.36                        2754.6                          350.70
      12.83                        2646.8                          350.58
1
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   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.85 WATERSHED INCHES;    7402 CFS-HRS;     611.7 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  24

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                          59.9                        (RUNOFF)
      24.03                           1.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.11 WATERSHED INCHES;      66 CFS-HRS;       5.4 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.35                        2797.6                        (NULL)
      12.83                        2659.4                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.84 WATERSHED INCHES;    7465 CFS-HRS;     616.9 ACRE-
                  FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   5


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  9.88       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =99            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.31                        1440.5                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.69 WATERSHED INCHES;    2012 CFS-HRS;     166.3 ACRE-
                  FEET.


 OPERATION RESVOR   STRUCTURE  1
```

```
    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.37                         1408.6                          395.62
1
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.61 WATERSHED INCHES;    1989 CFS-HRS;     164.4 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.55                         1110.4                          385.93

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.58 WATERSHED INCHES;    1983 CFS-HRS;     163.9 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.23                          260.1                        (RUNOFF)
       18.67                            6.3                        (RUNOFF)
       21.96                            5.0                        (RUNOFF)
       24.03                            4.3                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.02 WATERSHED INCHES;     305 CFS-HRS;      25.2 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.44                          196.2                          383.51

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.01 WATERSHED INCHES;     305 CFS-HRS;      25.2 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION   4

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.54                         1292.9                        (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.49 WATERSHED INCHES;    2283 CFS-HRS;     188.7 ACRE-
                  FEET.
```

```
 OPERATION RUNOFF   XSECTION   5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.37                         558.6                       (RUNOFF)
1
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  6.94 WATERSHED INCHES;     836 CFS-HRS;      69.1 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION   6

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.50                        1776.1                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.30 WATERSHED INCHES;    3106 CFS-HRS;     256.7 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   7

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.67                        1599.7                        373.30

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.28 WATERSHED INCHES;    3097 CFS-HRS;     256.0 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION   8

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.30                         662.1                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  6.88 WATERSHED INCHES;     897 CFS-HRS;      74.1 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION   9

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.61                        1943.5                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.16 WATERSHED INCHES;    3981 CFS-HRS;     329.0 ACRE-
```

FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.85	1710.9	356.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.13 WATERSHED INCHES; 3964 CFS-HRS; 327.6 ACRE-FEET.

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OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	775.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.98 WATERSHED INCHES; 1067 CFS-HRS; 88.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.75	1998.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.08 WATERSHED INCHES; 5015 CFS-HRS; 414.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	1050.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.22 WATERSHED INCHES; 1760 CFS-HRS; 145.4 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	951.3	383.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

7.21 WATERSHED INCHES; 1756 CFS-HRS; 145.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	321.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.85 WATERSHED INCHES; 449 CFS-HRS; 37.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.56	1141.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.21 WATERSHED INCHES; 2167 CFS-HRS; 179.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	413.8	(RUNOFF)
15.84	11.3	(RUNOFF)
17.34	8.7	(RUNOFF)
20.05	6.4	(RUNOFF)
20.61	6.1	(RUNOFF)
20.84	6.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.80 WATERSHED INCHES; 393 CFS-HRS; 32.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.53	1231.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.22 WATERSHED INCHES; 2494 CFS-HRS; 206.1 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.83 1081.0 360.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.17 WATERSHED INCHES; 2479 CFS-HRS; 204.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.21 1503.9 (RUNOFF)
18.66 32.4 (RUNOFF)
20.11 29.7 (RUNOFF)
20.66 28.3 (RUNOFF)
21.98 25.8 (RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.19 WATERSHED INCHES; 1737 CFS-HRS; 143.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.24 2029.0 (NULL)
20.03 78.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.50 WATERSHED INCHES; 4183 CFS-HRS; 345.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.30 3523.9 (NULL)
12.67 3418.2 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.11 WATERSHED INCHES; 9004 CFS-HRS; 744.1 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.36 3512.9 351.53

```
      12.73                        3416.9                          351.43

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 7.10 WATERSHED INCHES;    8994 CFS-HRS;     743.3 ACRE-
                 FEET.


 OPERATION RUNOFF   XSECTION  24

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                         74.1                        (RUNOFF)
      24.03                          1.2                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 6.38 WATERSHED INCHES;      82 CFS-HRS;       6.8 ACRE-
                 FEET.


 OPERATION ADDHYD   XSECTION  25
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   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.36                       3564.9                        (NULL)
      12.72                       3435.4                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 7.09 WATERSHED INCHES;    9072 CFS-HRS;     749.7 ACRE-
                 FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   6
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                            SUMMARY TABLE 1
                            ---------------
   SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
   A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
 F-FLAT TOP HYDROGRAPH   T-TRUNCATED HYDROGRAPH   R-RISING TRUNCATED
 HYDROGRAPH

 XSECTION/  STANDARD                                    PEAK DISCHARGE
 STRUCTURE   CONTROL    DRAINAGE   RUNOFF
 ------------------------------------
    ID      OPERATION     AREA     AMOUNT   ELEVATION   TIME     RATE    RATE
```

			(SQ MI)	(IN)	(FT)	(HR)	(CFS)	(CSM)

RAINFALL OF 2.64 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 5, ARC 2
MAIN TIME INCREMENT .050 HOURS

ALTERNATE 1 STORM 1

XSECTION	1	RUNOFF	.41	1.17	---	12.33	223	543.9
STRUCTURE	1	RESVOR	.41	1.17	390.28	12.64	131	319.5
XSECTION	2	REACH	.41	1.17	382.96	13.07	101	246.3
XSECTION	3	RUNOFF	.07	.83	---	12.25	30	428.6
XSECTION	2	REACH	.07	.83	381.13	12.40	24	342.9
XSECTION	4	ADDHYD	.47	1.12	---	13.01	109	231.9
XSECTION	5	RUNOFF	.19	.80	---	12.41	60	315.8
XSECTION	6	ADDHYD	.66	1.03	---	12.79	138	209.1
XSECTION	7	REACH	.66	1.03	369.40	13.14	130	197.0
XSECTION	8	RUNOFF	.20	.78	---	12.34	70	350.0
XSECTION	9	ADDHYD	.86	.97	---	12.97	151	175.6
XSECTION	10	REACH	.86	.97	351.24	13.22	148	172.1
XSECTION	11	RUNOFF	.24	.82	---	12.35	86	358.3
XSECTION	12	ADDHYD	1.10	.94	---	12.72	174	158.2
XSECTION	13	RUNOFF	.38	.92	---	12.50	129	339.5
XSECTION	14	REACH	.38	.92	378.90	12.64	121	318.4
XSECTION	15	RUNOFF	.09	1.28	---	12.33	53	588.9
XSECTION	16	ADDHYD	.47	.99	---	12.57	154	327.7
XSECTION	17	RUNOFF	.07	2.00	---	12.14	99	1414.3
XSECTION	18	ADDHYD	.54	1.10	---	12.53	177	327.8
XSECTION	19	REACH	.54	1.09	357.82	13.10	132	244.4
XSECTION	20	RUNOFF	.33	1.50	---	12.22	288	872.7
XSECTION	21	ADDHYD	.86	1.24	---	12.22	317	368.6
XSECTION	22	ADDHYD	1.96	1.06	---	12.26	436	222.4
XSECTION	23	REACH	1.96	1.06	346.57	12.37	416	212.2
XSECTION	24	RUNOFF	.02	.60	---	12.24	6	300.0
XSECTION	25	ADDHYD	1.98	1.05	---	12.37	420	212.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE	STANDARD CONTROL	DRAINAGE	RUNOFF		PEAK DISCHARGE		
ID	OPERATION	AREA (SQ MI)	AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 2

XSECTION	1	RUNOFF	.41	1.61	---	12.33	307	748.8
STRUCTURE	1	RESVOR	.41	1.61	390.94	12.59	199	485.4
XSECTION	2	REACH	.41	1.61	383.32	13.02	153	373.2
XSECTION	3	RUNOFF	.07	1.21	---	12.24	44	628.6
XSECTION	2	REACH	.07	1.20	381.36	12.42	38	542.9
XSECTION	4	ADDHYD	.47	1.55	---	12.97	166	353.2
XSECTION	5	RUNOFF	.19	1.17	---	12.40	92	484.2
XSECTION	6	ADDHYD	.66	1.44	---	12.78	210	318.2
XSECTION	7	REACH	.66	1.44	369.80	13.07	199	301.5
XSECTION	8	RUNOFF	.20	1.14	---	12.33	107	535.0
XSECTION	9	ADDHYD	.86	1.37	---	12.89	232	269.8
XSECTION	10	REACH	.86	1.37	353.02	13.45	201	233.7
XSECTION	11	RUNOFF	.24	1.19	---	12.34	129	537.5
XSECTION	12	ADDHYD	1.10	1.33	---	13.30	227	206.4
XSECTION	13	RUNOFF	.38	1.31	---	12.48	189	497.4
XSECTION	14	REACH	.38	1.31	380.38	12.74	153	402.6
XSECTION	15	RUNOFF	.09	1.73	---	12.32	73	811.1
XSECTION	16	ADDHYD	.47	1.39	---	12.65	190	404.3
XSECTION	17	RUNOFF	.07	2.51	---	12.14	124	1771.4
XSECTION	18	ADDHYD	.54	1.50	---	12.56	213	394.4
XSECTION	19	REACH	.54	1.48	358.06	13.10	170	314.8
XSECTION	20	RUNOFF	.33	1.98	---	12.21	380	1151.5
XSECTION	21	ADDHYD	.86	1.66	---	12.23	437	508.1
XSECTION	22	ADDHYD	1.96	1.44	---	12.26	600	306.1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 2

XSECTION	23	REACH	1.96	1.44	347.09	12.36	578	294.9
XSECTION	24	RUNOFF	.02	.92	---	12.23	10	500.0
XSECTION	25	ADDHYD	1.98	1.44	---	12.35	586	296.0

RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 10

XSECTION	1	RUNOFF	.41	3.10	---	12.32	596	1453.7
STRUCTURE	1	RESVOR	.41	3.10	392.84	12.52	432	1053.7
XSECTION	2	REACH	.41	3.10	384.12	12.79	363	885.4
XSECTION	3	RUNOFF	.07	2.55	---	12.23	96	1371.4
XSECTION	2	REACH	.07	2.55	382.25	12.42	81	1157.1
XSECTION	4	ADDHYD	.47	3.02	---	12.74	408	868.1
XSECTION	5	RUNOFF	.19	2.49	---	12.38	202	1063.2
XSECTION	6	ADDHYD	.66	2.87	---	12.59	544	824.2
XSECTION	7	REACH	.66	2.87	370.99	12.82	509	771.2
XSECTION	8	RUNOFF	.20	2.45	---	12.32	238	1190.0
XSECTION	9	ADDHYD	.86	2.77	---	12.69	610	709.3
XSECTION	10	REACH	.86	2.77	354.14	13.08	532	618.6
XSECTION	11	RUNOFF	.24	2.53	---	12.32	283	1179.2
XSECTION	12	ADDHYD	1.10	2.72	---	12.95	609	553.6
XSECTION	13	RUNOFF	.38	2.70	---	12.47	397	1044.7
XSECTION	14	REACH	.38	2.70	381.44	12.70	332	873.7
XSECTION	15	RUNOFF	.09	3.26	---	12.32	136	1511.1
XSECTION	16	ADDHYD	.47	2.81	---	12.62	403	857.4
XSECTION	17	RUNOFF	.07	4.12	---	12.14	199	2842.9
XSECTION	18	ADDHYD	.54	2.87	---	12.56	442	818.5
XSECTION	19	REACH	.54	2.84	358.85	12.98	361	668.5
XSECTION	20	RUNOFF	.33	3.57	---	12.21	671	2033.3
XSECTION	21	ADDHYD	.86	3.08	---	12.23	824	958.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 10

XSECTION	22	ADDHYD	1.96	2.80	---	12.27	1268	646.9
XSECTION	23	REACH	1.96	2.79	348.58	12.35	1247	636.2
XSECTION	24	RUNOFF	.02	2.13	---	12.22	25	1250.0
XSECTION	25	ADDHYD	1.98	2.78	---	12.35	1265	638.9

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 50

XSECTION	1	RUNOFF	.41	5.25	---	12.31	995	2426.8
STRUCTURE	1	RESVOR	.41	5.20	394.93	12.47	820	2000.0
XSECTION	2	REACH	.41	5.18	384.97	12.68	662	1614.6
XSECTION	3	RUNOFF	.07	4.57	---	12.23	172	2457.1
XSECTION	2	REACH	.07	4.57	383.17	12.57	118	1685.7
XSECTION	4	ADDHYD	.47	5.09	---	12.66	775	1648.9
XSECTION	5	RUNOFF	.19	4.50	---	12.37	365	1921.1
XSECTION	6	ADDHYD	.66	4.92	---	12.57	1038	1572.7
XSECTION	7	REACH	.66	4.91	372.12	12.77	963	1459.1
XSECTION	8	RUNOFF	.20	4.45	---	12.31	433	2165.0
XSECTION	9	ADDHYD	.86	4.80	---	12.68	1152	1339.5
XSECTION	10	REACH	.86	4.78	355.22	13.02	1026	1193.0
XSECTION	11	RUNOFF	.24	4.54	---	12.32	509	2120.8
XSECTION	12	ADDHYD	1.10	4.73	---	12.92	1166	1060.0
XSECTION	13	RUNOFF	.38	4.76	---	12.46	698	1836.8
XSECTION	14	REACH	.38	4.76	382.28	12.65	615	1618.4
XSECTION	15	RUNOFF	.09	5.41	---	12.31	223	2477.8
XSECTION	16	ADDHYD	.47	4.84	---	12.58	741	1576.6
XSECTION	17	RUNOFF	.07	6.29	---	12.14	301	4300.0
XSECTION	18	ADDHYD	.54	4.85	---	12.54	803	1487.0
XSECTION	19	REACH	.54	4.81	359.63	12.92	691	1279.6
XSECTION	20	RUNOFF	.33	5.72	---	12.21	1066	3230.3

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 50

XSECTION	21	ADDHYD	.86	5.11	---	12.23	1339	1557.0
XSECTION	22	ADDHYD	1.96	4.76	---	12.28	2168	1106.1
XSECTION	23	REACH	1.96	4.76	349.97	12.35	2154	1099.0
XSECTION	24	RUNOFF	.02	4.03	---	12.21	47	2350.0
XSECTION	25	ADDHYD	1.98	4.75	---	12.35	2188	1105.1

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 98

XSECTION	1	RUNOFF	.41	6.39	---	12.31	1200	2926.8
STRUCTURE	1	RESVOR	.41	6.32	395.35	12.41	1113	2714.6
XSECTION	2	REACH	.41	6.30	385.44	12.60	869	2119.5
XSECTION	3	RUNOFF	.07	5.70	---	12.23	213	3042.9
XSECTION	2	REACH	.07	5.70	383.33	12.51	154	2200.0
XSECTION	4	ADDHYD	.47	6.21	---	12.58	1016	2161.7
XSECTION	5	RUNOFF	.19	5.63	---	12.37	457	2405.3
XSECTION	6	ADDHYD	.66	6.03	---	12.53	1384	2097.0
XSECTION	7	REACH	.66	6.01	372.69	12.71	1256	1903.0
XSECTION	8	RUNOFF	.20	5.57	---	12.31	540	2700.0
XSECTION	9	ADDHYD	.86	5.90	---	12.64	1517	1764.0
XSECTION	10	REACH	.86	5.87	355.78	12.95	1338	1555.8
XSECTION	11	RUNOFF	.24	5.67	---	12.32	630	2625.0
XSECTION	12	ADDHYD	1.10	5.82	---	12.86	1529	1390.0
XSECTION	13	RUNOFF	.38	5.91	---	12.45	862	2268.4
XSECTION	14	REACH	.38	5.91	382.65	12.63	771	2028.9
XSECTION	15	RUNOFF	.09	6.56	---	12.31	271	3011.1
XSECTION	16	ADDHYD	.47	5.94	---	12.57	927	1972.3
XSECTION	17	RUNOFF	.07	7.47	---	12.14	354	5057.1
XSECTION	18	ADDHYD	.54	5.95	---	12.54	1002	1855.6
XSECTION	19	REACH	.54	5.92	359.96	12.85	872	1614.8

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 98

XSECTION	20	RUNOFF	.33	6.87	---	12.21	1271	3851.5
XSECTION	21	ADDHYD	.86	6.23	---	12.23	1684	1958.1
XSECTION	22	ADDHYD	1.96	5.85	---	12.29	2767	1411.7
XSECTION	23	REACH	1.96	5.85	350.70	12.36	2755	1405.6
XSECTION	24	RUNOFF	.02	5.11	---	12.21	60	3000.0

XSECTION	25	ADDHYD	1.98	5.84	---	12.35	2798	1413.1

RAINFALL OF 9.88 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 99

XSECTION	1	RUNOFF	.41	7.69	---	12.31	1441	3514.6
STRUCTURE	1	RESVOR	.41	7.61	395.62	12.37	1409	3436.6
XSECTION	2	REACH	.41	7.58	385.93	12.55	1110	2707.3
XSECTION	3	RUNOFF	.07	7.02	---	12.23	260	3714.3
XSECTION	2	REACH	.07	7.01	383.51	12.44	196	2800.0
XSECTION	4	ADDHYD	.47	7.49	---	12.54	1293	2751.1
XSECTION	5	RUNOFF	.19	6.94	---	12.37	559	2942.1
XSECTION	6	ADDHYD	.66	7.30	---	12.50	1776	2690.9
XSECTION	7	REACH	.66	7.28	373.30	12.67	1600	2424.2
XSECTION	8	RUNOFF	.20	6.88	---	12.30	662	3310.0
XSECTION	9	ADDHYD	.86	7.16	---	12.61	1943	2259.3
XSECTION	10	REACH	.86	7.13	356.36	12.85	1711	1989.5
XSECTION	11	RUNOFF	.24	6.98	---	12.31	775	3229.2
XSECTION	12	ADDHYD	1.10	7.08	---	12.75	1999	1817.3
XSECTION	13	RUNOFF	.38	7.22	---	12.45	1050	2763.2
XSECTION	14	REACH	.38	7.21	383.03	12.62	951	2502.6
XSECTION	15	RUNOFF	.09	7.85	---	12.31	321	3566.7
XSECTION	16	ADDHYD	.47	7.21	---	12.56	1142	2429.8
XSECTION	17	RUNOFF	.07	8.80	---	12.14	414	5914.3
XSECTION	18	ADDHYD	.54	7.22	---	12.53	1232	2281.5

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 99

XSECTION	19	REACH	.54	7.17	360.30	12.83	1081	2001.9
XSECTION	20	RUNOFF	.33	8.19	---	12.21	1504	4557.6
XSECTION	21	ADDHYD	.86	7.50	---	12.24	2029	2359.3
XSECTION	22	ADDHYD	1.96	7.11	---	12.30	3524	1798.0
XSECTION	23	REACH	1.96	7.10	351.53	12.36	3513	1792.3
XSECTION	24	RUNOFF	.02	6.38	---	12.21	74	3700.0

XSECTION 25 ADDHYD 1.98 7.09 --- 12.36 3565 1800.5
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 1 STORM 1											
2	3113		131	12.6	101	13.1	.84	1.17	.160	.766	.11
2	1954		30	12.3	24	12.4	.64	1.53	.073	.816	.30
7	2088		138	12.8	130	13.1	.90	1.16	.068	.937	.17
10	3852		151	12.9	148	13.2	.72	1.42	.031	.977	.21
14	2484		129	12.5	121	12.6	.81	1.47	.033	.940	.35
19	4092		176	12.6	132	13.1	1.06	1.12	.247	.746	.09
23	586		435	12.3	414	12.4	.93	1.14	.016	.952	.52
ALTERNATE 1 STORM 2											
2	3113		199	12.6	152	13.0	.59	1.24	.156	.768	.12
2	1954		44	12.3	37	12.4	.64	1.53	.062	.844	.33
7	2088		209	12.8	199	13.1	.70	1.23	.057	.948	.19
10	3852		232	12.9	201	13.4	.43	1.27	.133	.868	.09
14	2484		189	12.5	153	12.8	.75	1.23	.133	.812	.17
19	4092		213	12.6	170	13.1	1.08	1.11	.215	.797	

.09										
23	586	599	12.3	578	12.4	.75	1.19	.012	.964	
.57										
	ALTERNATE 1 STORM 10									
2	3113	431	12.5	363	12.8	.29	1.41	.095	.842	
.18										
2	1954	96	12.3	80	12.4	.87	1.35	.084	.838	
.31										
7	2088	543	12.6	508	12.8	.58	1.28	.054	.935	
.25										
10	3852	610	12.7	531	13.1	.25	1.38	.107	.872	
.13										
14	2484	397	12.4	332	12.7	.57	1.27	.118	.836	
.19										
19	4092	442	12.6	361	13.0	.88	1.16	.192	.817	
.10										
23	586	1262	12.3	1247	12.4	.47	1.28	.007	.988	
.69?										
	ALTERNATE 1 STORM 50									
2	3113	816	12.4	661	12.7	.29	1.41	.087	.811	
.21										
2	1954	171	12.3	117	12.6	.75	1.17	.223	.688	
.17										

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

			HYDROGRAPH INFORMATION				ROUTING PARAMETERS				
		FLOOD	INFLOW		OUTFLOW		Q-A EQ.			PEAK	ATT-
XSEC ID	REACH LENGTH	PLAIN LENGTH	PEAK	TIME	PEAK	TIME	COEFF	POWER	LENGTH FACTOR	RATIO Q/I	KIN COEFF
	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)	(Q*)	(C)
	ALTERNATE 1 STORM 50										
7	2088		1036	12.6	962	12.8	.61	1.27	.053	.929	
.27											
10	3852		1150	12.7	1025	13.0	.22	1.40	.089	.891	
.16											
14	2484		698	12.4	615	12.6	.37	1.36	.078	.881	
.24											

```
  19   4092          803  12.6     690  12.9    .47   1.30   .135   .859
  .14
  23    586         2164  12.3    2153  12.4    .37   1.32   .005   .995
  .77?

    ALTERNATE    1   STORM   98
    --------------------------
   2   3113         1111  12.4     869  12.6    .29   1.41   .090   .782
   .23
   2   1954          211  12.3     154  12.5    .60   1.24   .181   .730
   .19
   7   2088         1381  12.6    1256  12.7    .70   1.24   .060   .909
   .28
  10   3852         1516  12.6    1338  12.9    .22   1.40   .088   .882
  .17
  14   2484          862  12.4     770  12.6    .33   1.38   .067   .893
  .25

  19   4092         1002  12.6     872  12.9    .40   1.32   .121   .871
  .15
  23    586         2766  12.3    2754  12.4    .33   1.34   .005   .996
  .81?

    ALTERNATE    1   STORM   99
    --------------------------
   2   3113         1401  12.4    1110  12.6    .29   1.41   .087   .793
   .25
   2   1954          258  12.3     196  12.4    .47   1.30   .148   .761
   .21
   7   2088         1776  12.5    1597  12.6    .76   1.22   .064   .899
   .28
  10   3852         1943  12.6    1711  12.9    .22   1.40   .086   .880
  .18
  14   2484         1050  12.4     950  12.6    .30   1.40   .059   .904
  .27

  19   4092         1230  12.6    1080  12.9    .38   1.34   .111   .878
  .16
  23    586         3524  12.3    3510  12.4    .33   1.34   .005   .996
  .84?
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                      Option E, Pond 1
 2.04TEST
 16:30:22                    SUMMARY, JOB NO.   1                      PAGE
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                            SUMMARY TABLE 3
                            ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.....
   ID               (SQ MI)          1         2        10        50        98


 STRUCTURE   1          .41
 ---------------------------
    ALTERNATE    1                 131       199       432       820
```

1113

XSECTION 1 .41

ALTERNATE 1 223 307 596 995
1200

XSECTION 2 .07

ALTERNATE 1 24 38 81 118
154

XSECTION 3 .07

ALTERNATE 1 30 44 96 172
213

XSECTION 4 .47

ALTERNATE 1 109 166 408 775
1016

XSECTION 5 .19

ALTERNATE 1 60 92 202 365
457

XSECTION 6 .66

ALTERNATE 1 138 210 544 1038
1384

XSECTION 7 .66

ALTERNATE 1 130 199 509 963
1256

XSECTION 8 .20

ALTERNATE 1 70 107 238 433
540

XSECTION 9 .86

ALTERNATE 1 151 232 610 1152
1517

XSECTION 10 .86

ALTERNATE 1 148 201 532 1026
1338

XSECTION 11 .24

ALTERNATE 1 86 129 283 509
630

XSECTION 12 1.10

ALTERNATE 1 174 227 609 1166
1529

XSECTION 13 .38

1
TR20 ---------- SCS
-
Valley Mede Ultimate LU, Fair Cond, Subdivided
VERSION
09/21/** Option E, Pond 1
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	10	50	98
XSECTION 13		.38					
ALTERNATE	1		129	189	397	698	862
XSECTION 14		.38					
ALTERNATE	1		121	153	332	615	771
XSECTION 15		.09					
ALTERNATE	1		53	73	136	223	271
XSECTION 16		.47					
ALTERNATE	1		154	190	403	741	927
XSECTION 17		.07					
ALTERNATE	1		99	124	199	301	354
XSECTION 18		.54					
ALTERNATE	1		177	213	442	803	1002
XSECTION 19		.54					
ALTERNATE	1		132	170	361	691	872
XSECTION 20		.33					
ALTERNATE	1		288	380	671	1066	1271
XSECTION 21		.86					
ALTERNATE	1		317	437	824	1339	

1684

XSECTION 22 1.96

ALTERNATE 1 436 600 1268 2168
2767

XSECTION 23 1.96

ALTERNATE 1 416 578 1247 2154
2755

XSECTION 24 .02

ALTERNATE 1 6 10 25 47
60

XSECTION 25 1.98

ALTERNATE 1 420 586 1265 2188
2798

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99

STRUCTURE 1 .41

ALTERNATE 1 1409
1

TR20 ---------- SCS -

Valley Mede Ultimate LU, Fair Cond, Subdivided
VERSION
09/21/** Option E, Pond 1
2.04TEST
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99

XSECTION 1 .41

ALTERNATE 1 1441

XSECTION 2 .07

ALTERNATE 1 196

```
 XSECTION    3          .07
 ---------------------------
    ALTERNATE    1                 260

 XSECTION    4          .47
 ---------------------------
    ALTERNATE    1                1293

 XSECTION    5          .19
 ---------------------------
    ALTERNATE    1                 559

 XSECTION    6          .66
 ---------------------------
    ALTERNATE    1                1776

 XSECTION    7          .66
 ---------------------------
    ALTERNATE    1                1600

 XSECTION    8          .20
 ---------------------------
    ALTERNATE    1                 662

 XSECTION    9          .86
 ---------------------------
    ALTERNATE    1                1943

 XSECTION   10          .86
 ---------------------------
    ALTERNATE    1                1711

 XSECTION   11          .24
 ---------------------------
    ALTERNATE    1                 775

 XSECTION   12         1.10
 ---------------------------
    ALTERNATE    1                1999

 XSECTION   13          .38
 ---------------------------
    ALTERNATE    1                1050
1
 TR20 ------------------------------------------------------------------------ SCS
 -
                 Valley Mede Ultimate LU, Fair Cond, Subdivided
                 VERSION
 09/21/**                         Option E, Pond 1
 2.04TEST
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                              SUMMARY TABLE 3
                              ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.....
   ID               (SQ MI)          99
```

```
 XSECTION   14          .38
 ---------------------------
    ALTERNATE    1                951

 XSECTION   15          .09
 ---------------------------
    ALTERNATE    1                321

 XSECTION   16          .47
 ---------------------------
    ALTERNATE    1               1142

 XSECTION   17          .07
 ---------------------------
    ALTERNATE    1                414

 XSECTION   18          .54
 ---------------------------
    ALTERNATE    1               1232

 XSECTION   19          .54
 ---------------------------
    ALTERNATE    1               1081

 XSECTION   20          .33
 ---------------------------
    ALTERNATE    1               1504

 XSECTION   21          .86
 ---------------------------
    ALTERNATE    1               2029

 XSECTION   22         1.96
 ---------------------------
    ALTERNATE    1               3524

 XSECTION   23         1.96
 ---------------------------
    ALTERNATE    1               3513

 XSECTION   24          .02
 ---------------------------
    ALTERNATE    1                 74

 XSECTION   25         1.98
 ---------------------------
    ALTERNATE    1               3565
1
 TR20 ------------------------------------------------------------------------ SCS
 -
                 Valley Mede Ultimate LU, Fair Cond, Subdivided
                 VERSION
 09/21/**                       Option E, Pond 1
 2.04TEST



 END OF  1 JOBS IN THIS RUN
```

SCS TR-20, VERSION 2.04TEST
FILES

```
INPUT  = opte.dat                                , GIVEN DATA FILE
OUTPUT = opte.OUT                                , DATED 09/21/
**,16:30:22
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NONE!

TOTAL NUMBER OF WARNINGS = 0, MESSAGES = 0

*** TR-20 RUN COMPLETED ***

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017

Plumtree Plumtree

Legend

- WS 200-YR
- WS 100-YR
- WS 50-YR
- WS 10-YR
- WS 2-YR
- WS 1-YR
- Ground
- LOB
- ROB
- Right Levee

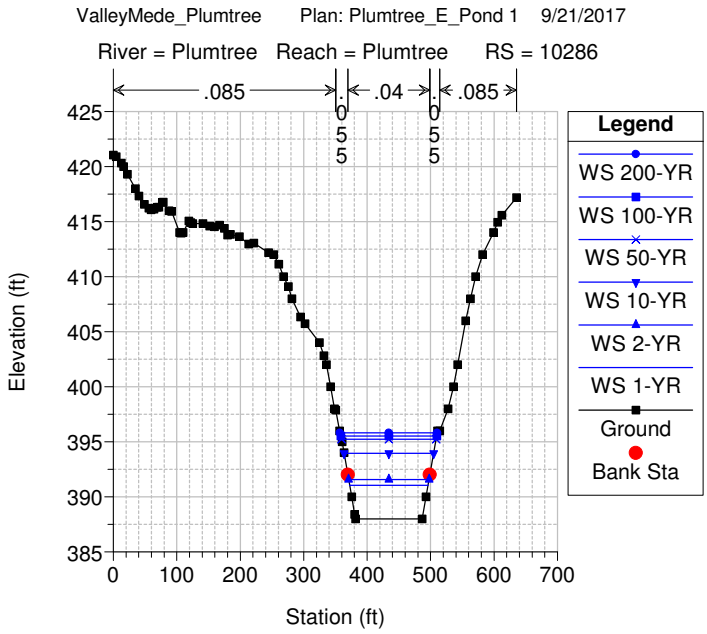
Elevation (ft)

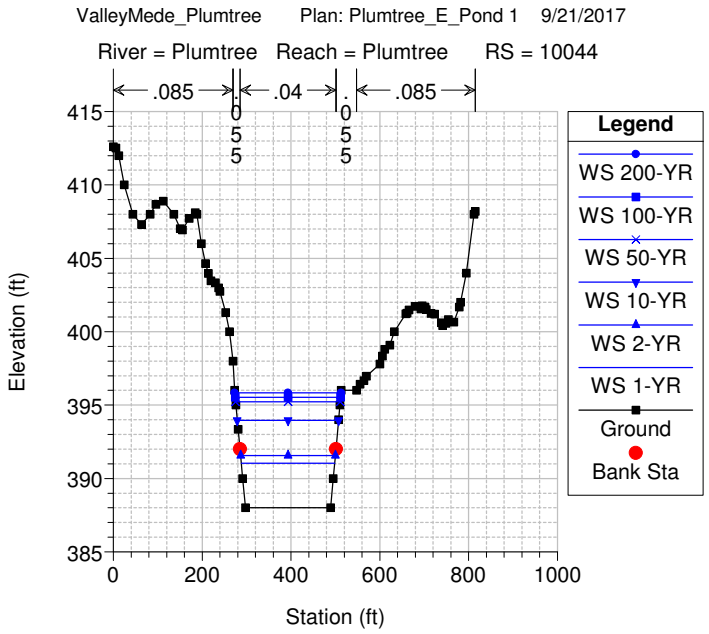
400
390
380
370
360
350
340

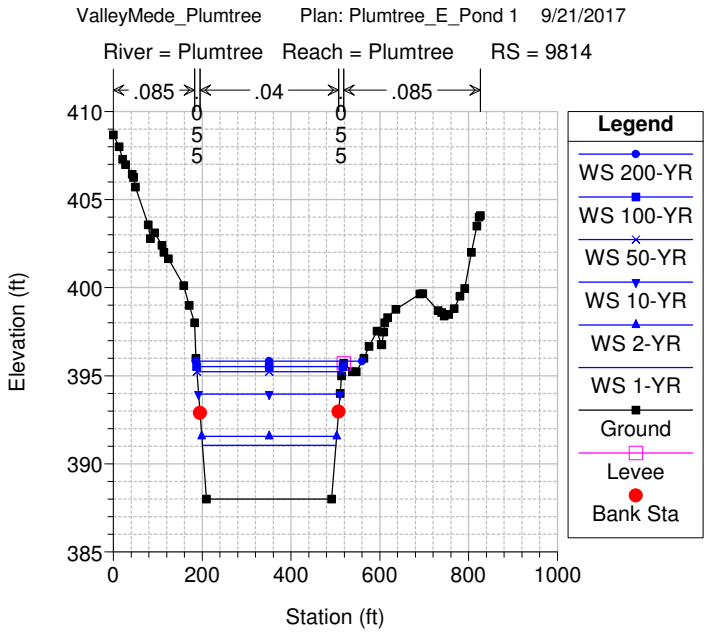
0
2000
4000
6000
8000
10000
12000

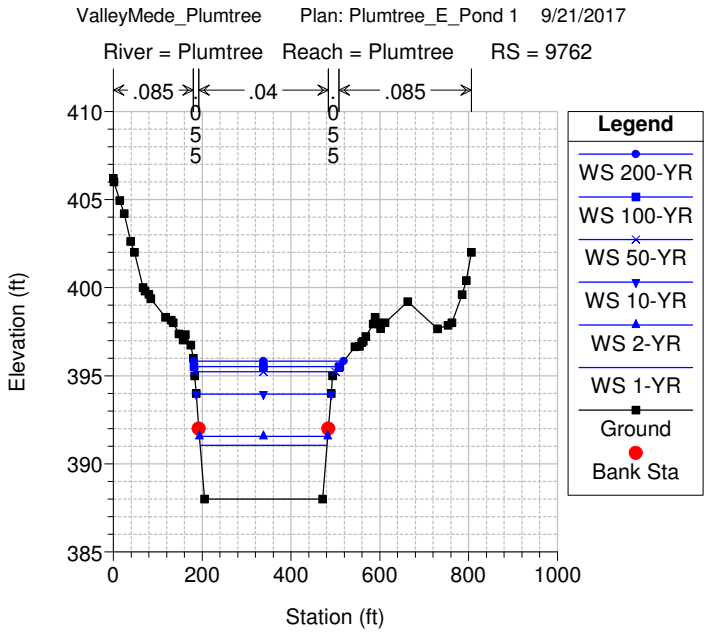
Main Channel Distance (ft)

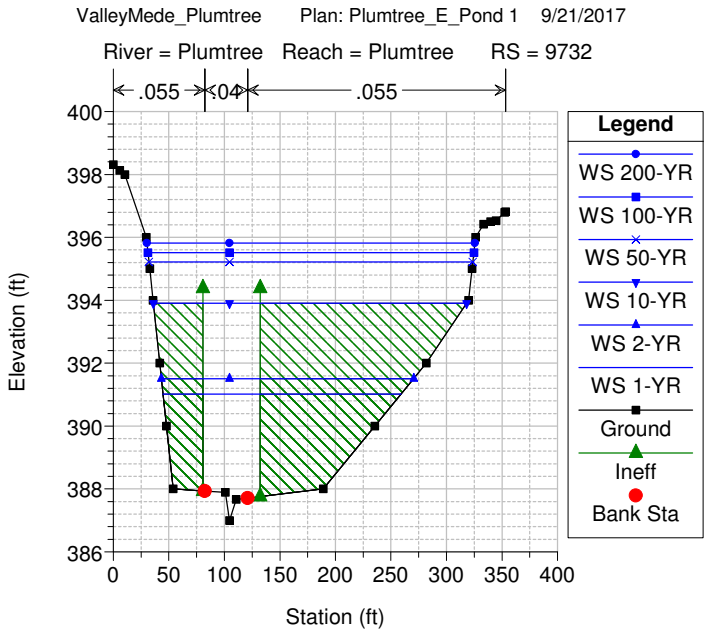
380 526 762 911 1124 1291 1463 1641 1830 1994 2153 2331 2485 2589 2759 2900 Frederick Rd 2978 3077 3179 3296 3428 3550 3688 3816 3930 4033 4185 4289 4400 US 40 4636 4745 4845 5000 Longview Dr 5107 5209 5323 5419 5560 5650 Brookmede Rd 5824 5926 6028 6122 6250 Hearthstone Rd 6350 6454 6568 6663 6766 6893 7030 7216 7367 7548 7800 7954 8094 8229 8374 8579 8753 8987 9196 9301 9398 9499 9650 Michaels Way 9814 10044 10286

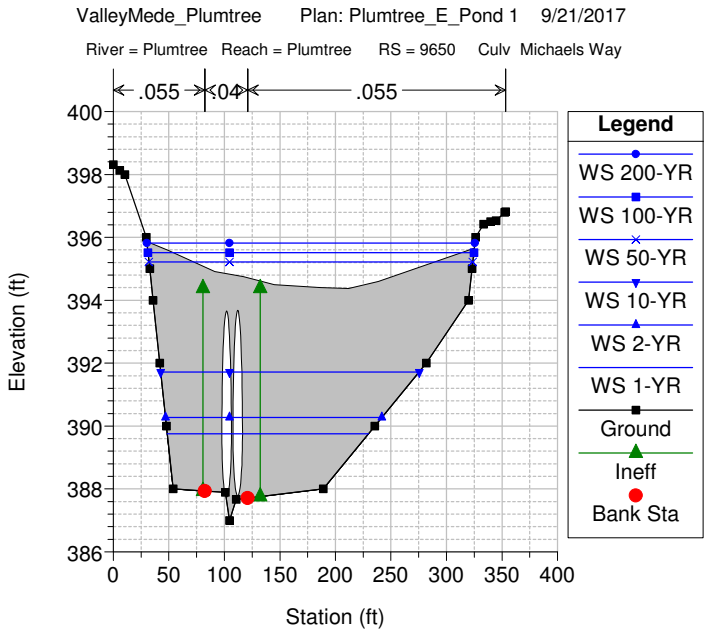

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 10286
.085
.04
.085
.055
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

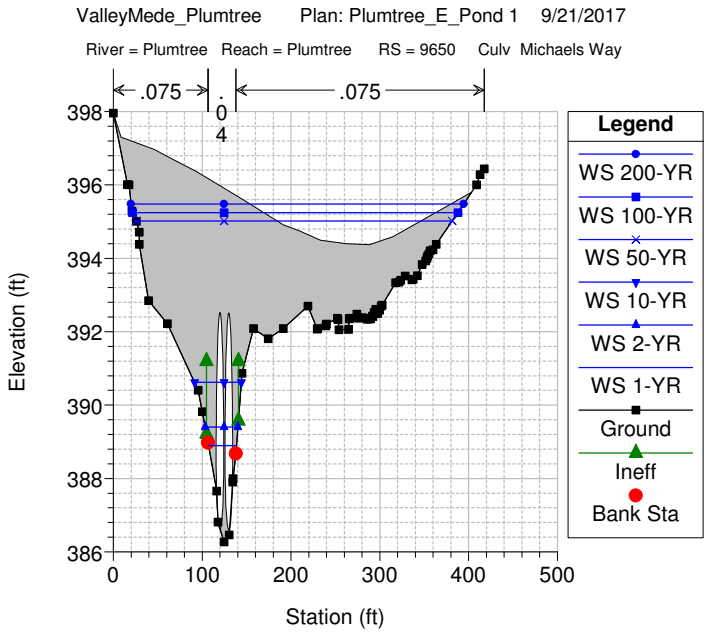

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 10044
.085
.04
.085
.055
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

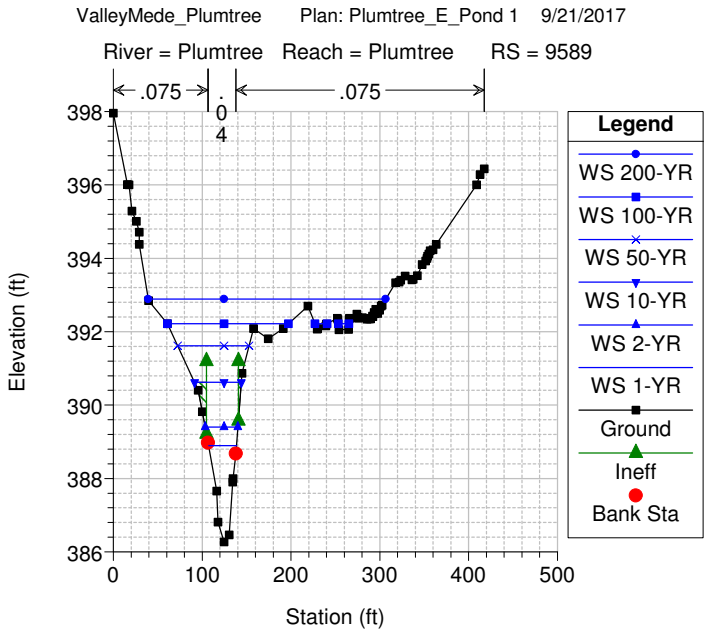

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 9814
.085
.04
.085
.055
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

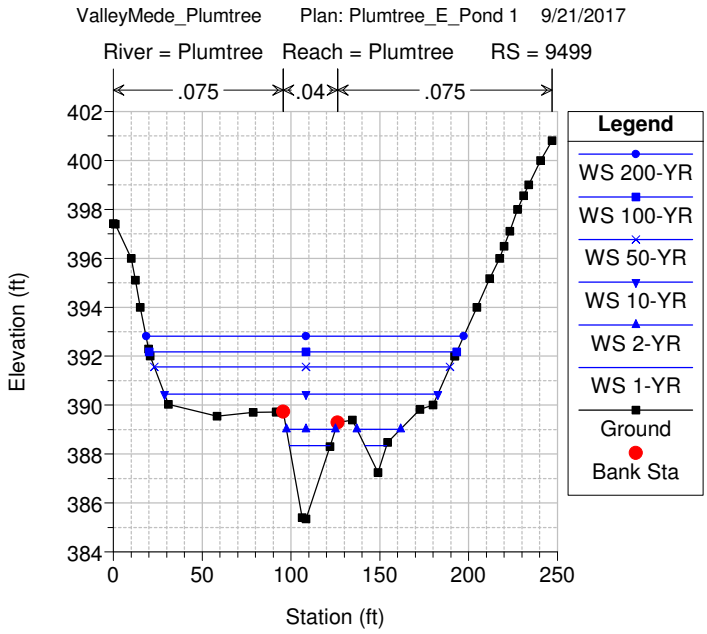

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 9762
.085
.04
.085
.055
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

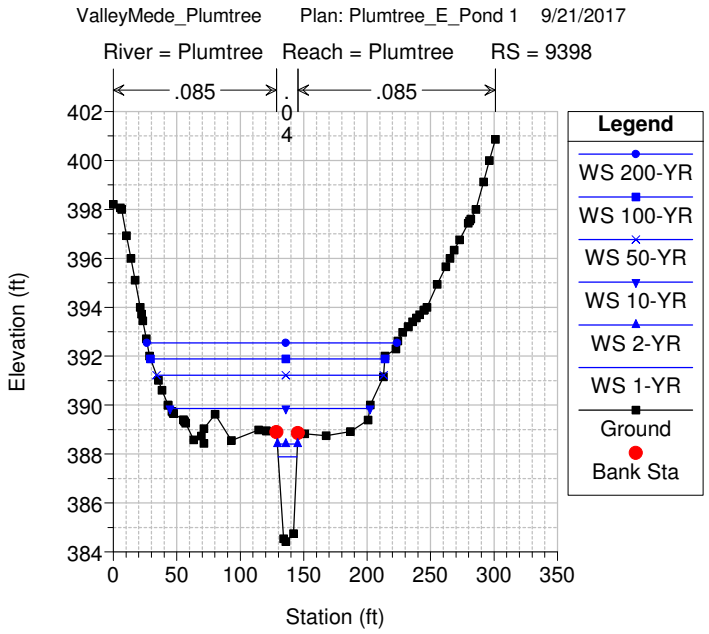

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 9732
.055
.04
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

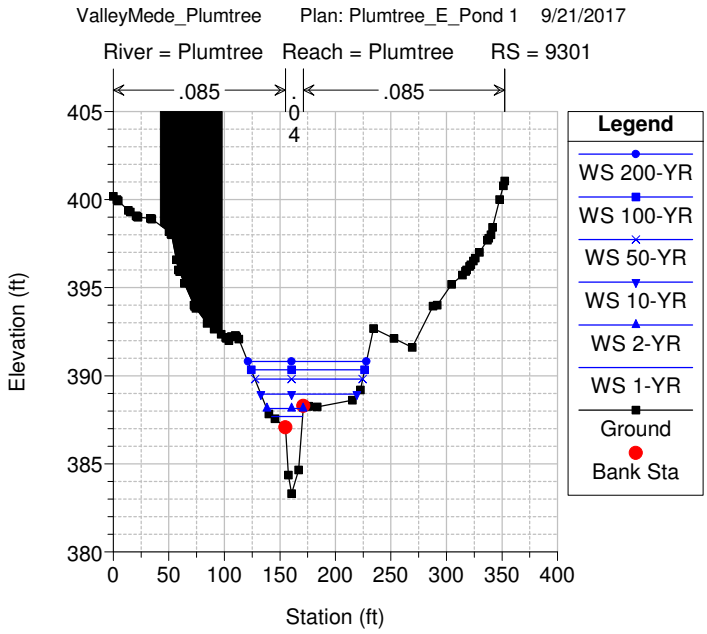

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.055
.04
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

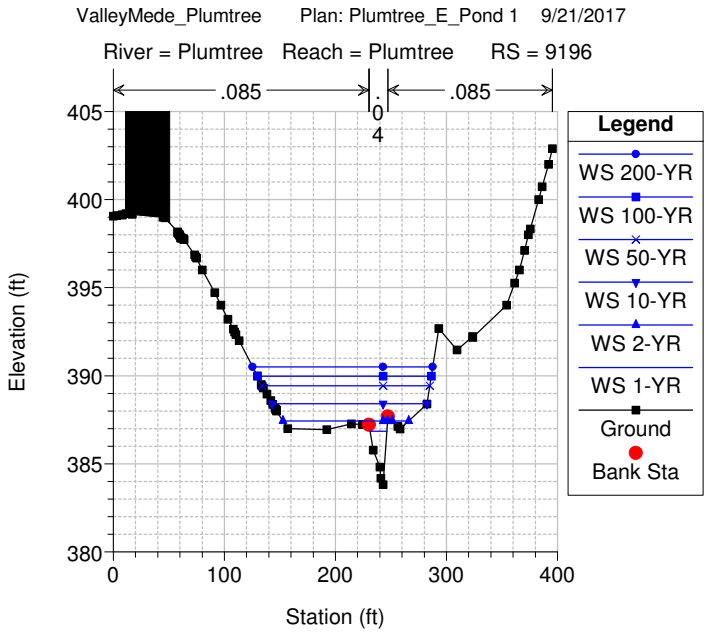

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

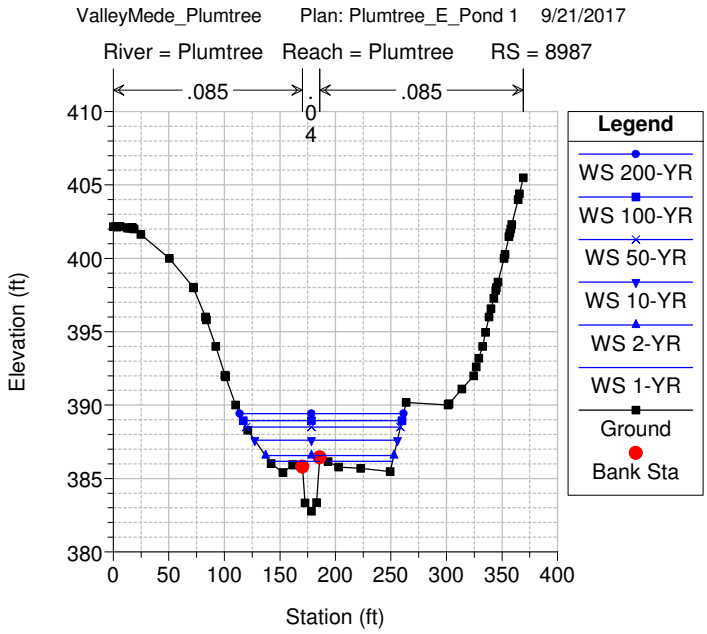

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 9589
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

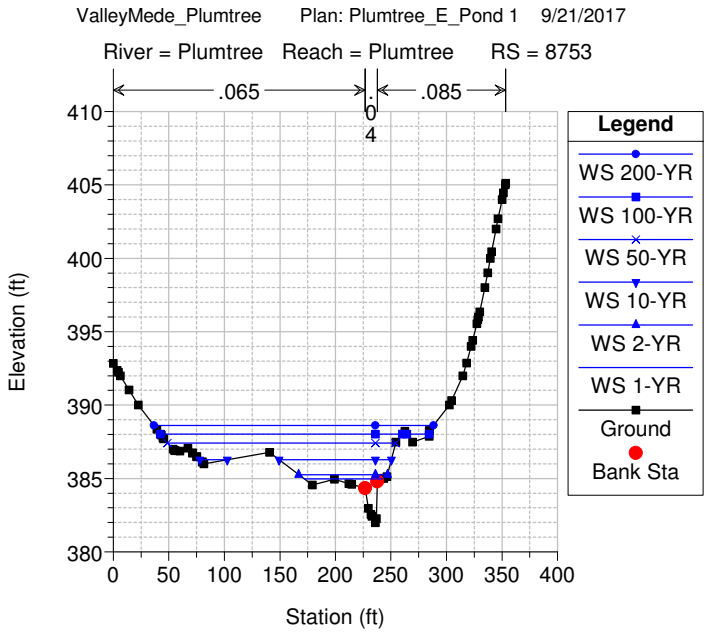

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 9499
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

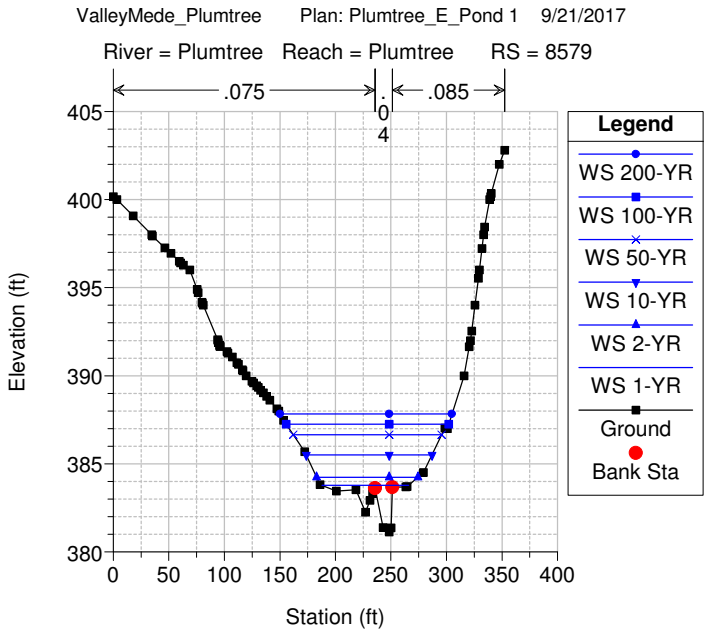

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 9398
.085
.
0
4
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

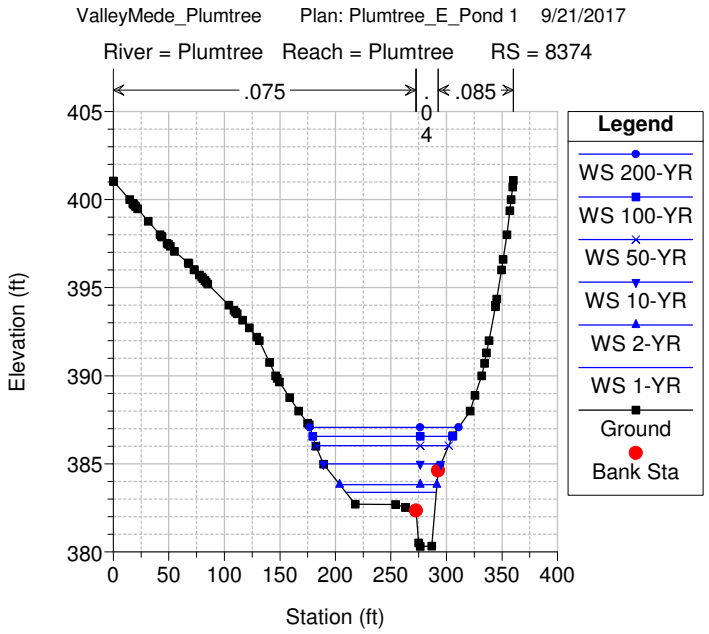

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 9301
.085
.
0
4
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

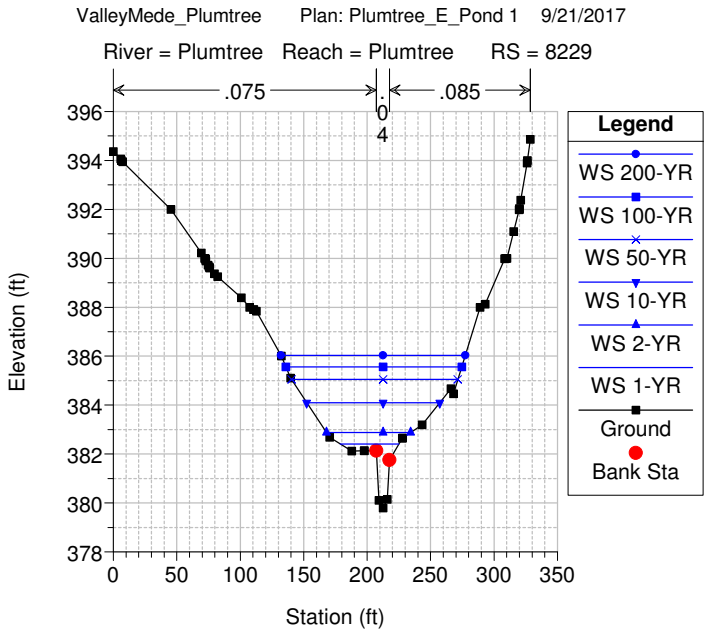

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 9196
.085
.
0
4
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

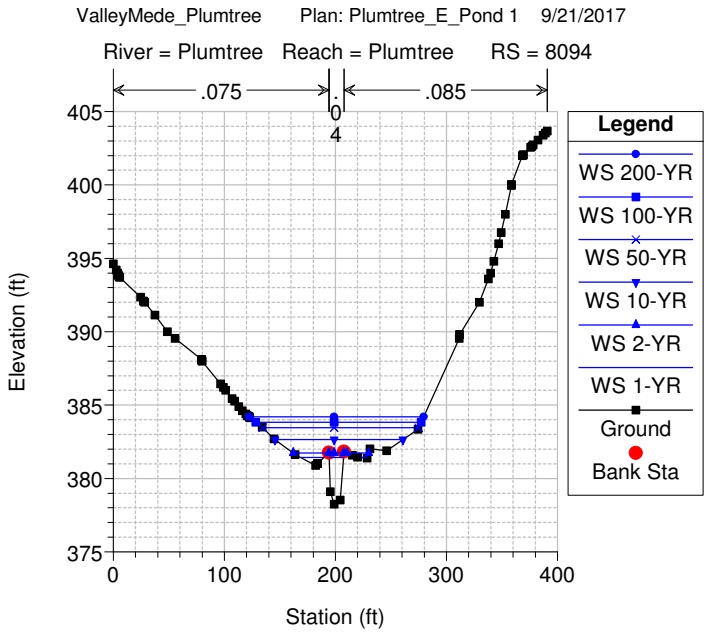

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 8987
.085
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

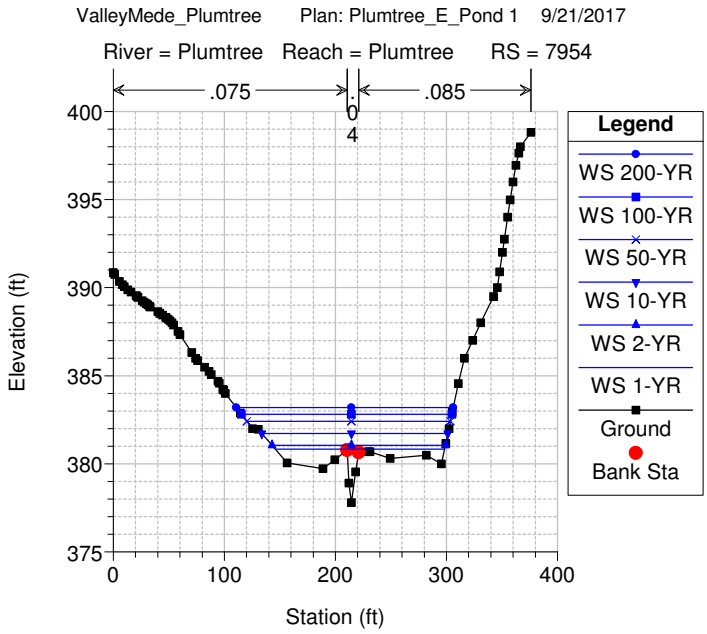

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 8753
.065
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

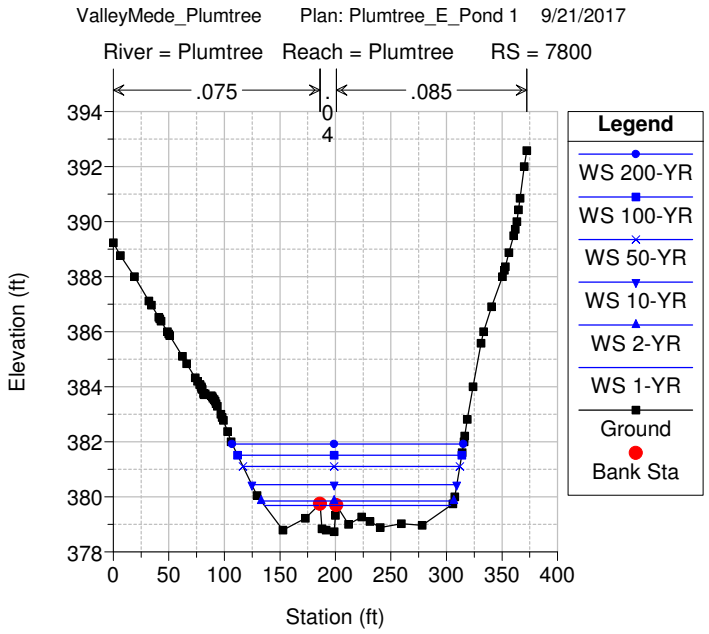

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 8579
.075
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 8374
.075
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 8229
.075
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 8094
.075
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 7954
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta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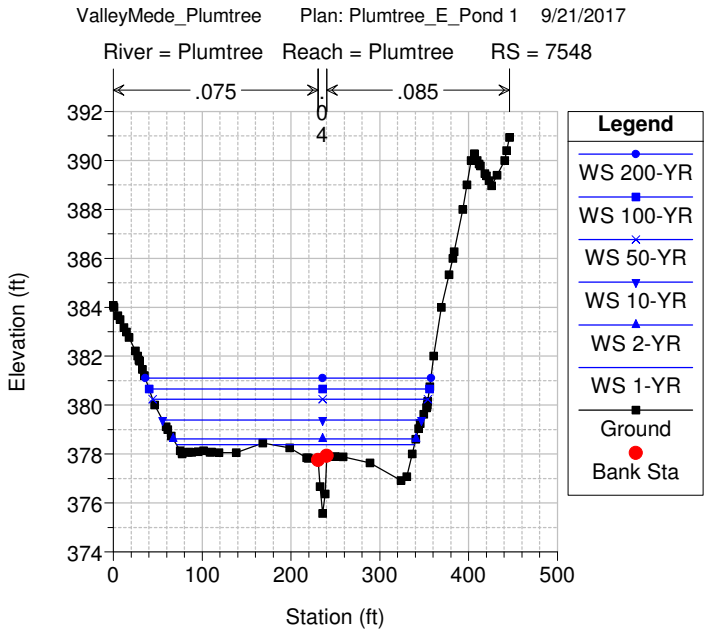
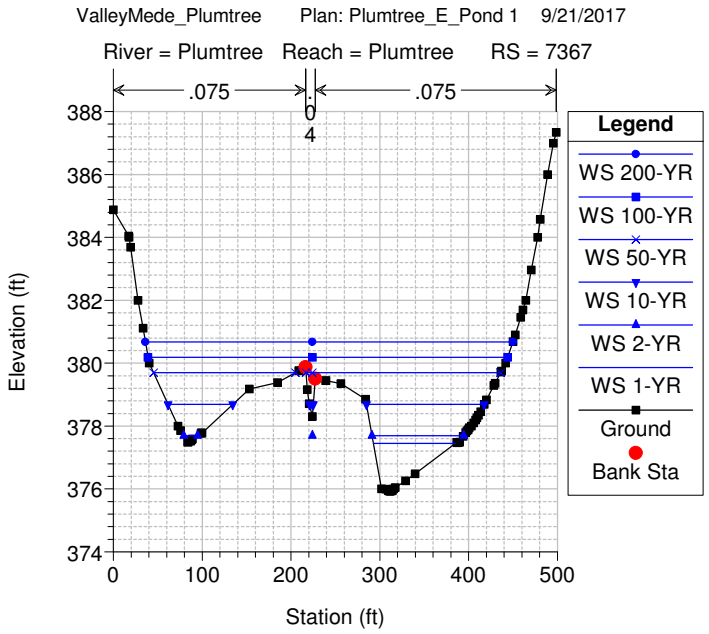
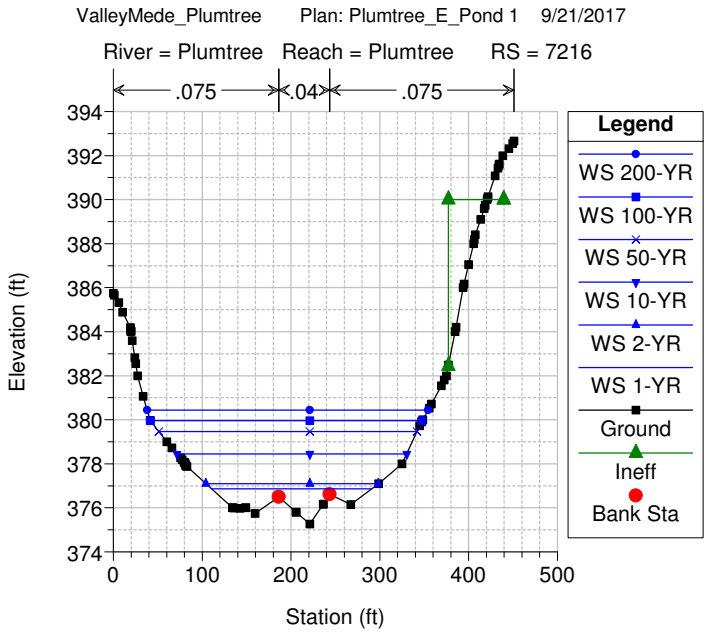
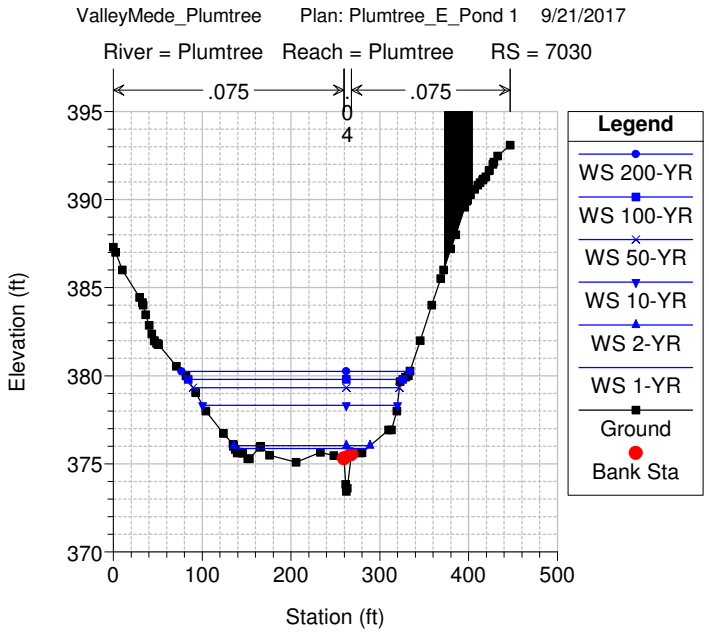
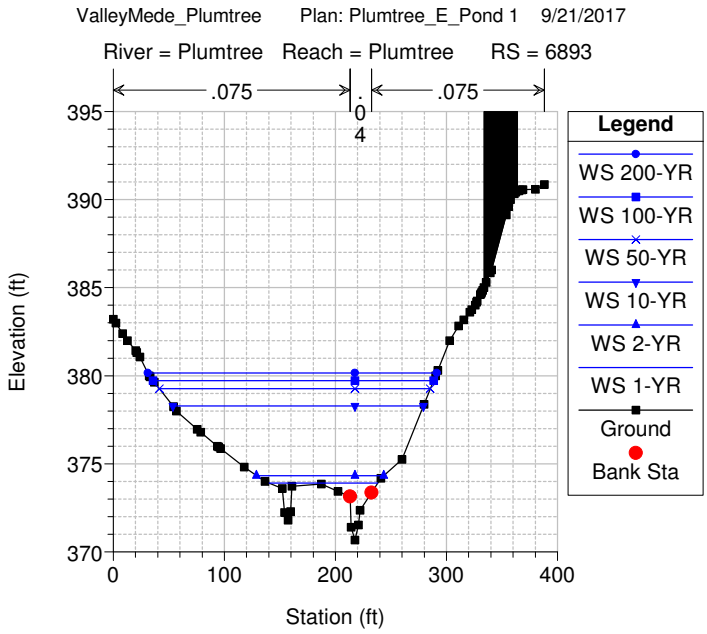
River = Plumtree Reach = Plumtree RS = 7800
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

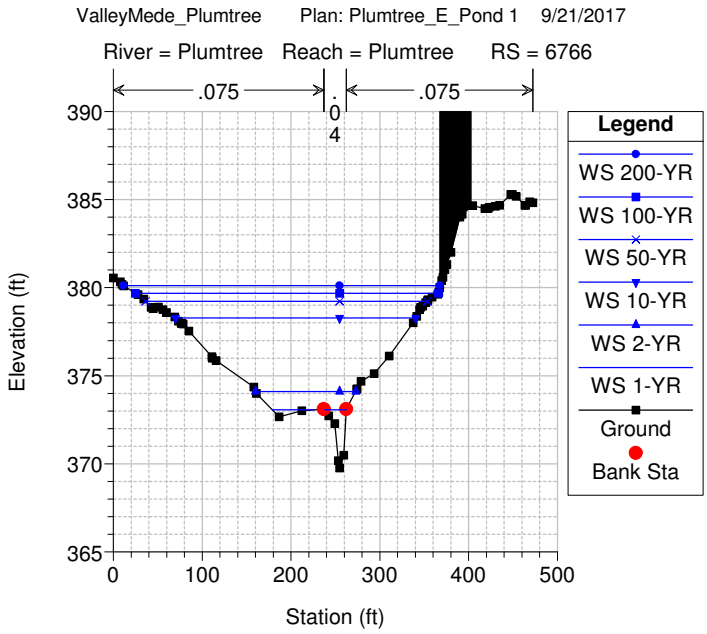

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 7548
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

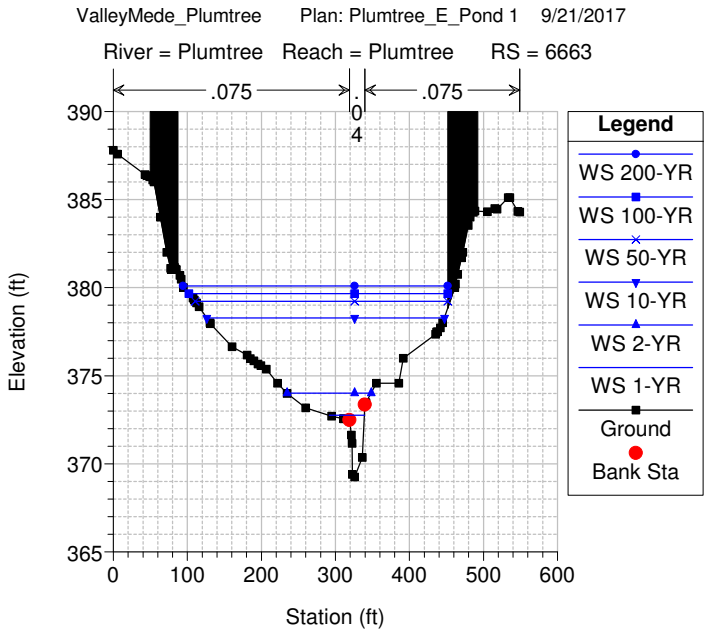

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 7367
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

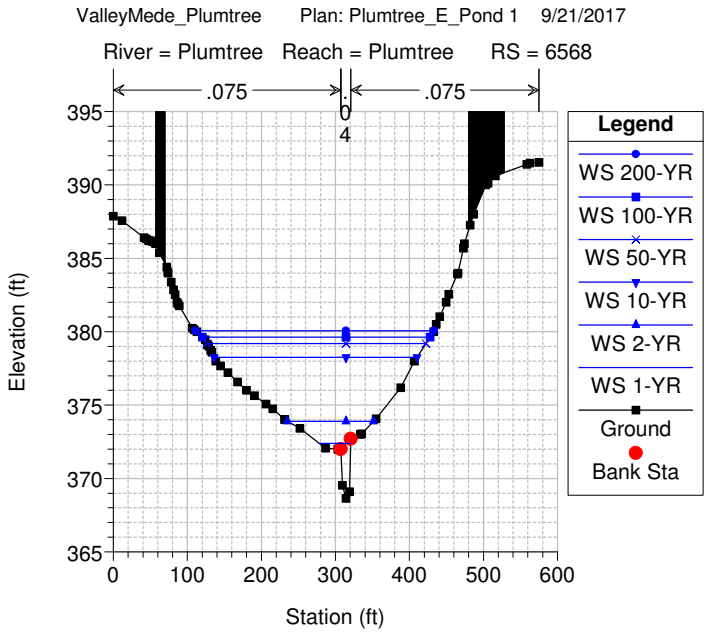

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 7216
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

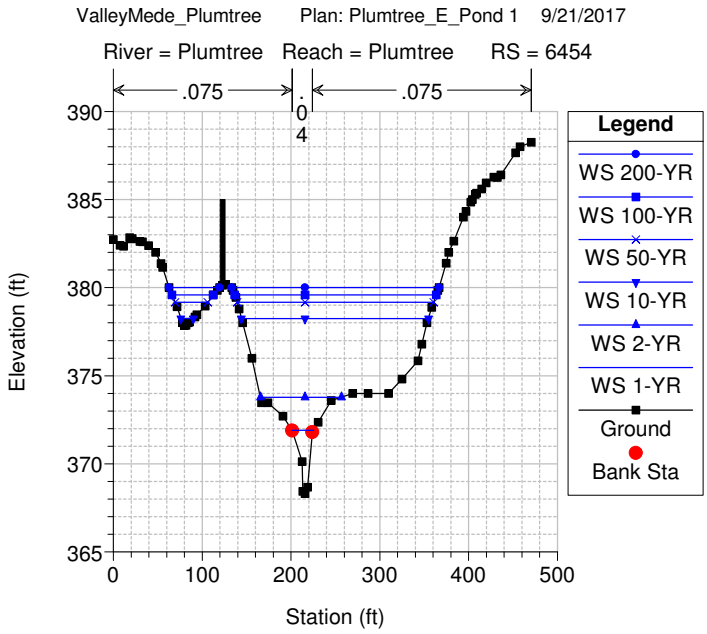

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 7030
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

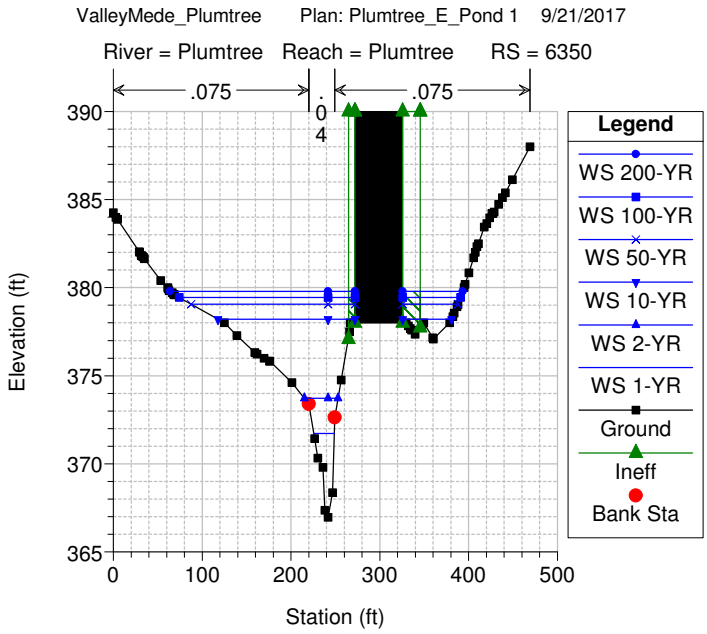

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6893
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

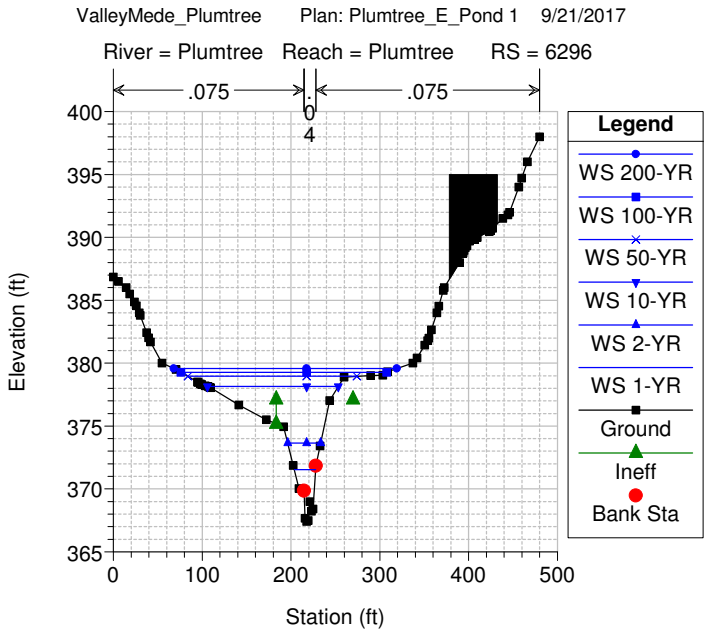

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6766
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

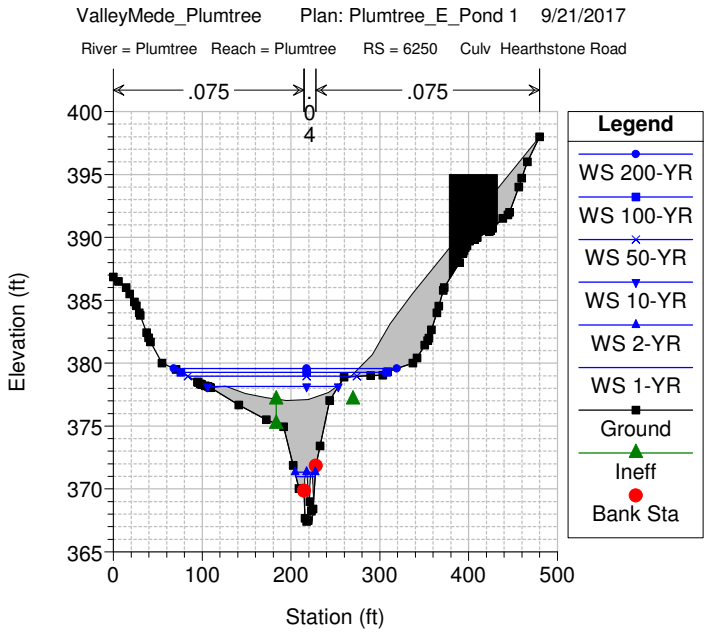

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6663
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

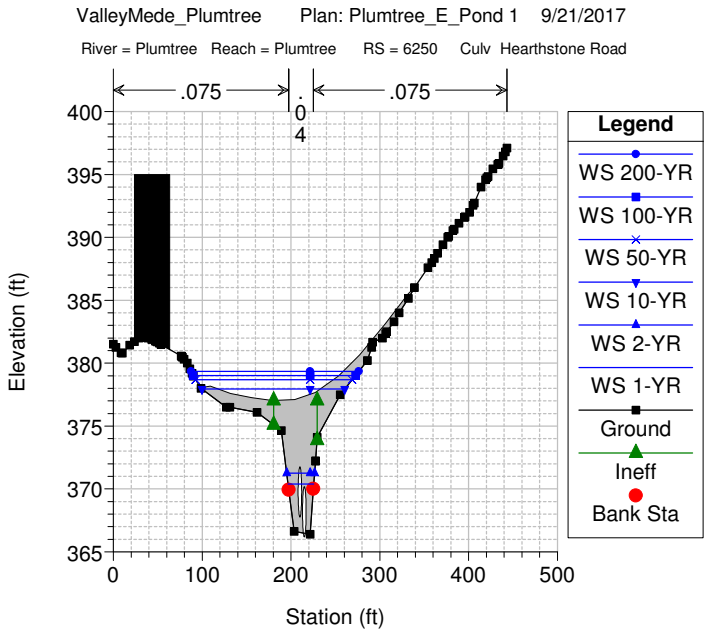

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6568
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

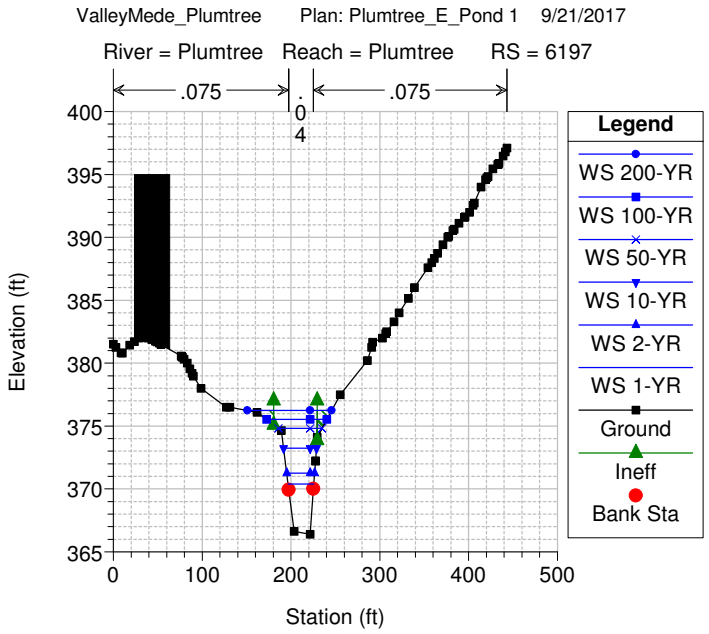

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6454
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

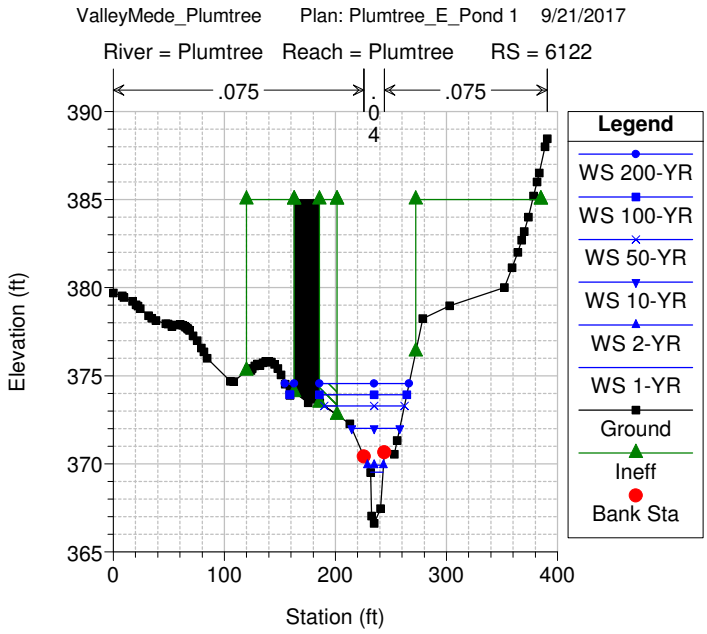

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6350
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

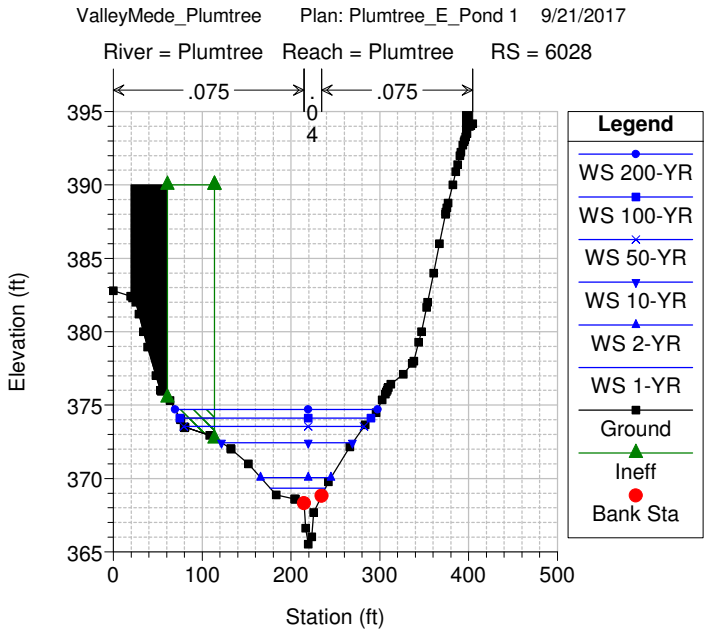

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6296
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

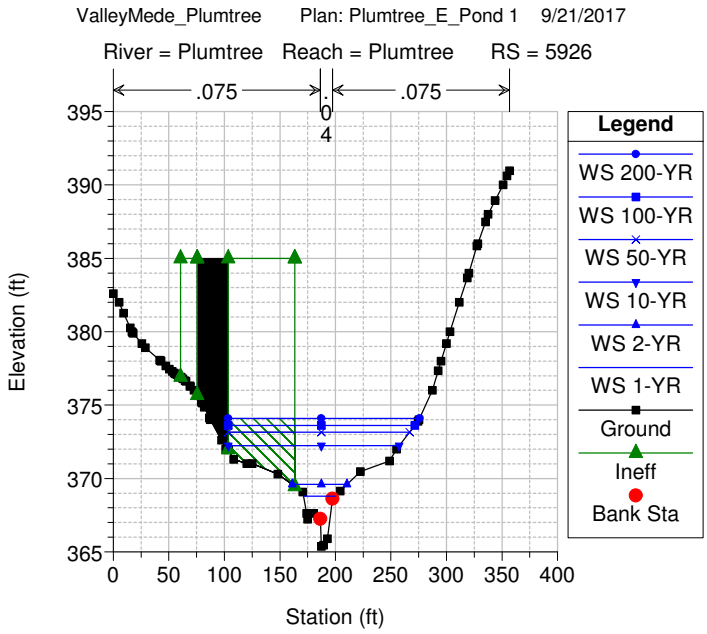

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

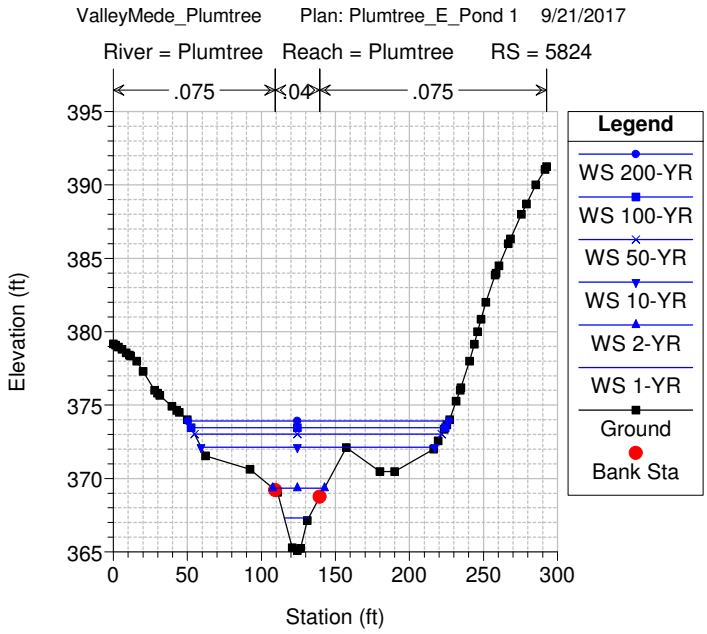

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

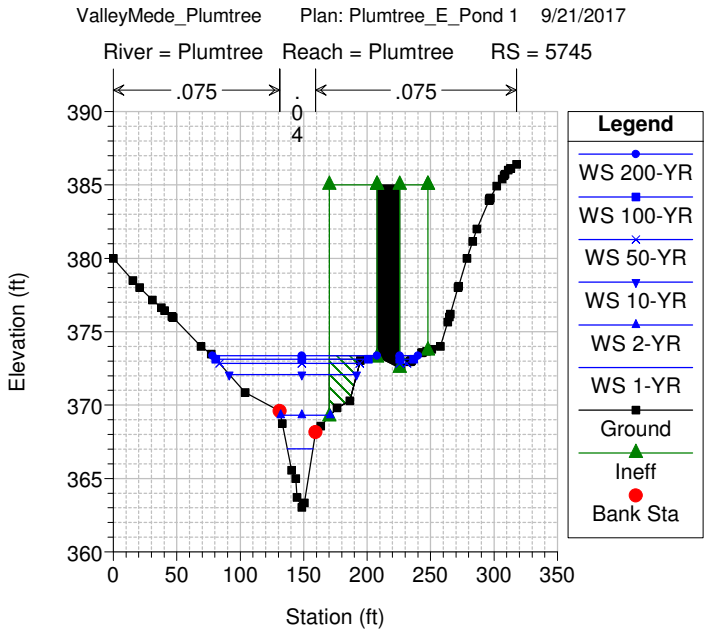

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6197
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

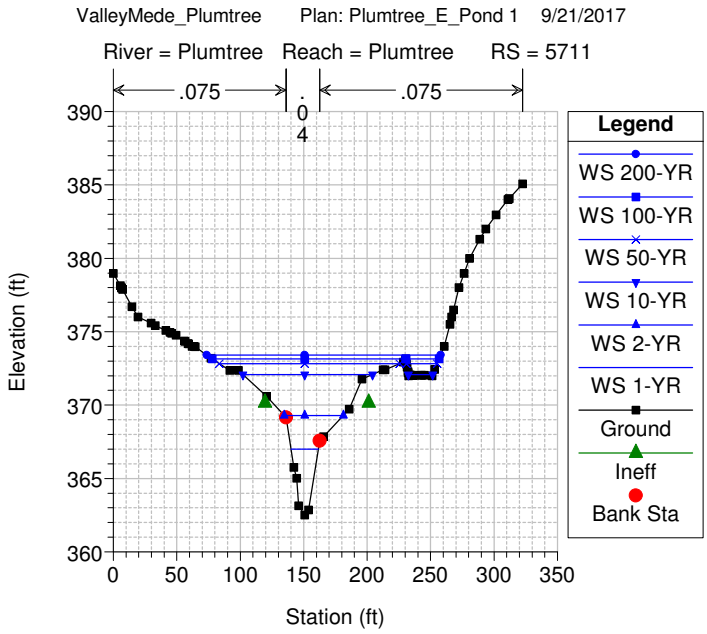

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6122
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

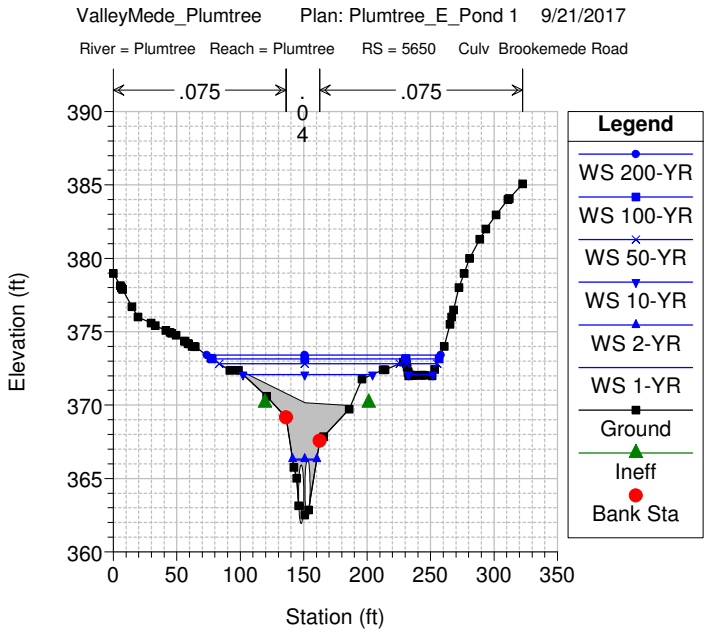

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 6028
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

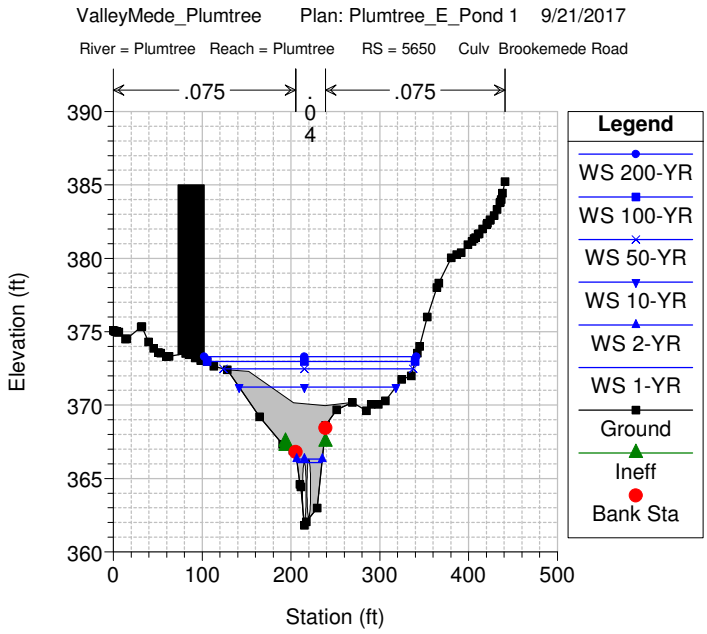

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5926
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

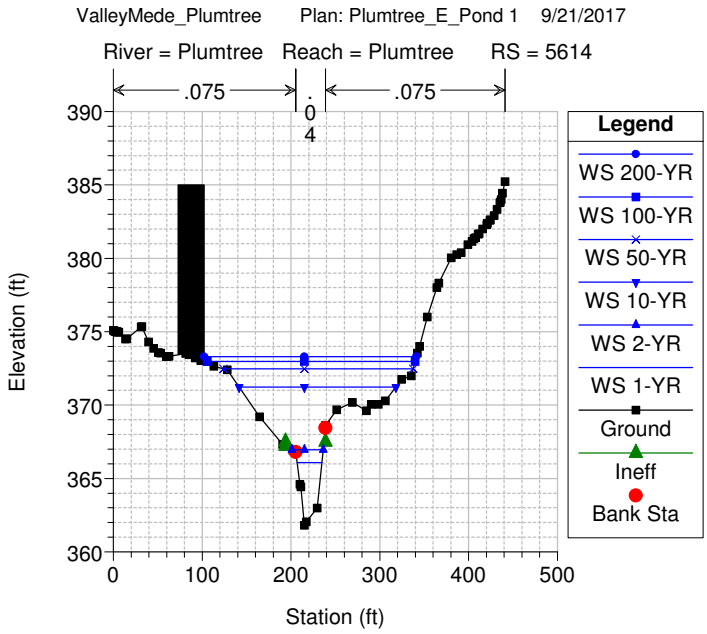

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5824
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

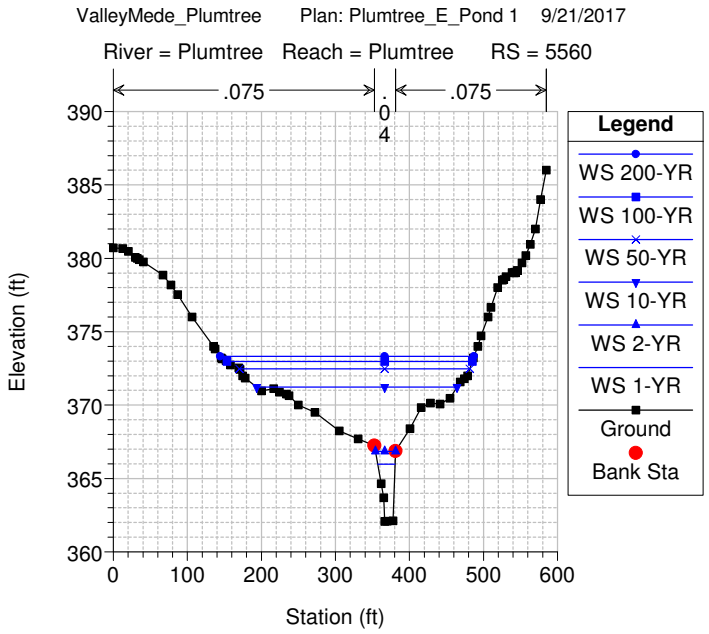

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5745
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

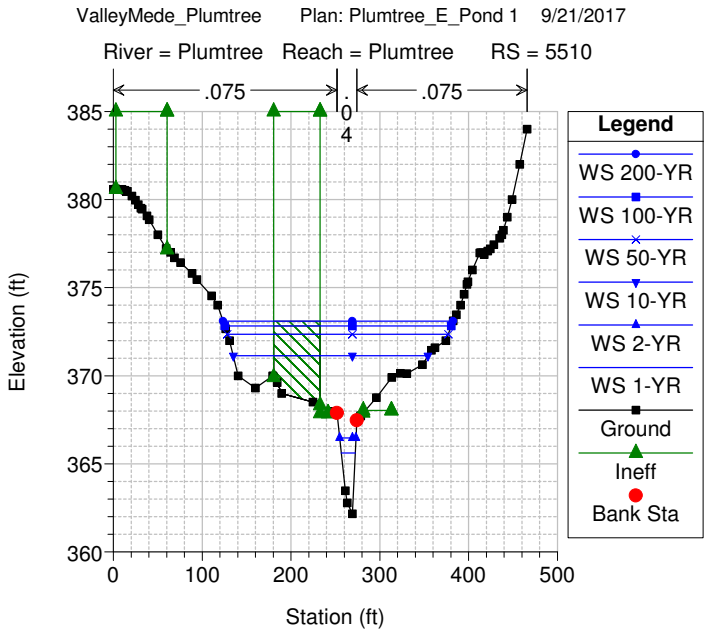

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5711
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

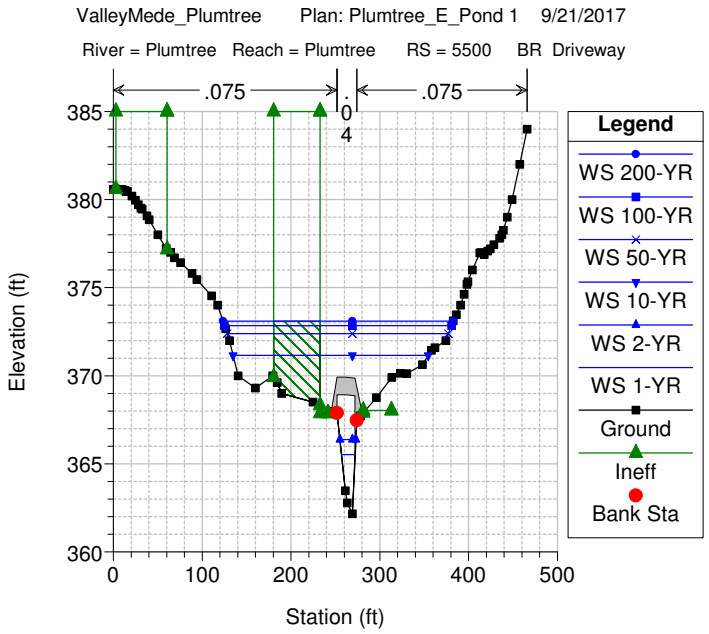

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

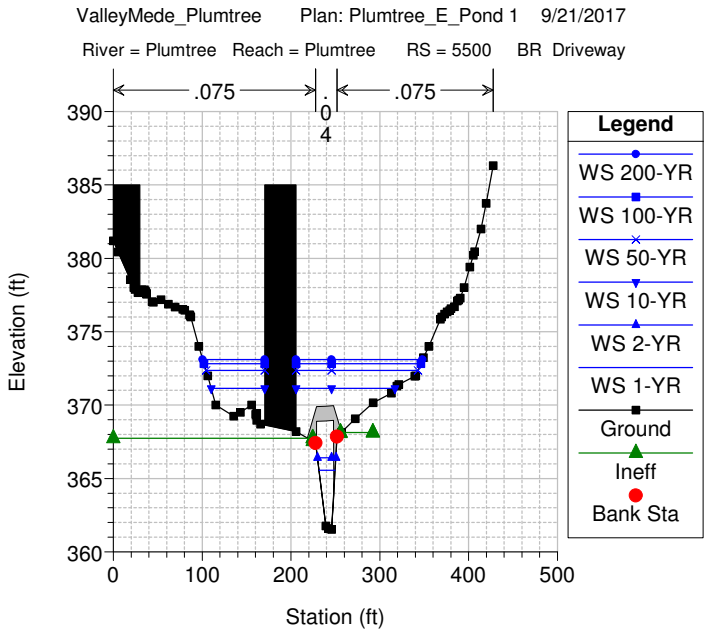

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

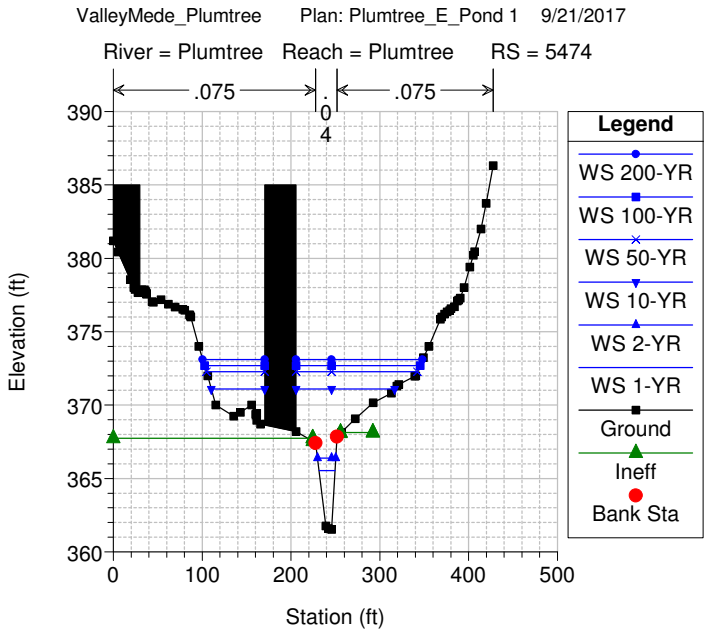

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5614
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

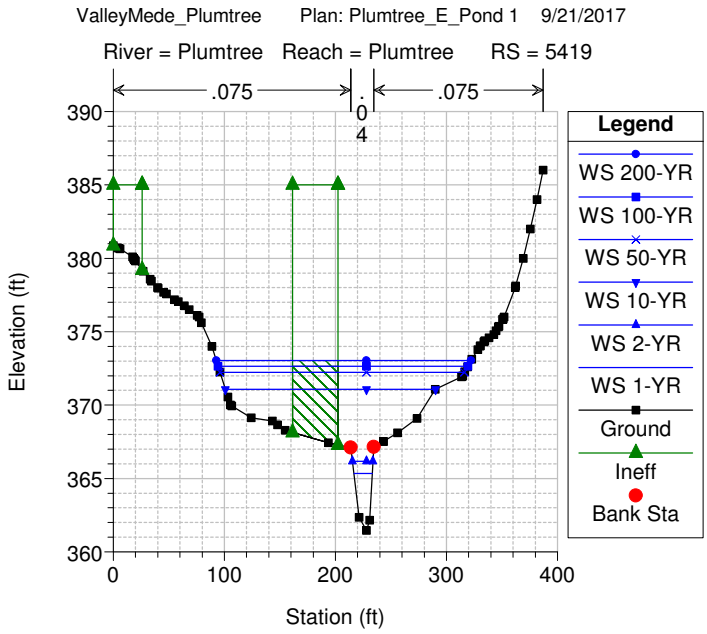

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5560
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

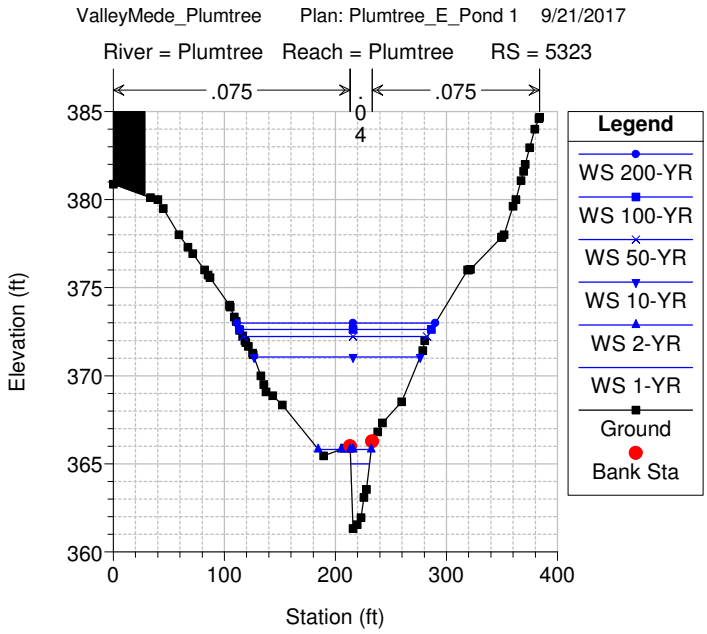

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5510
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

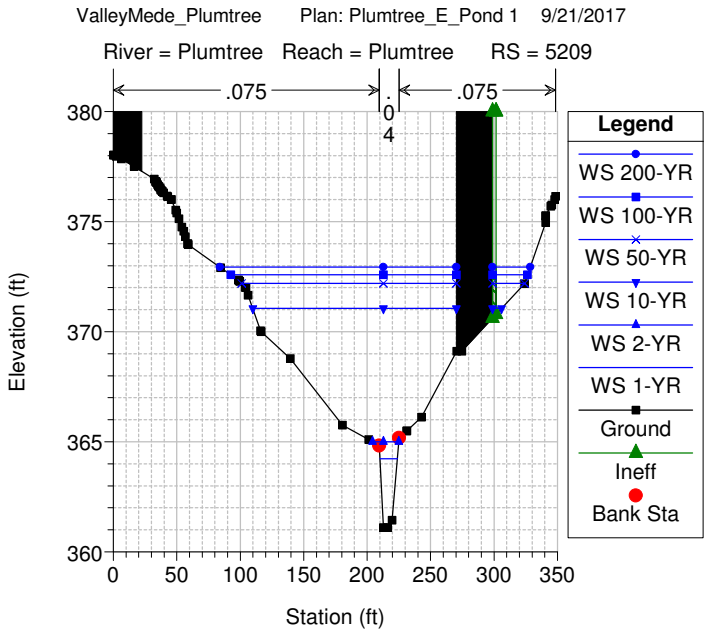

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

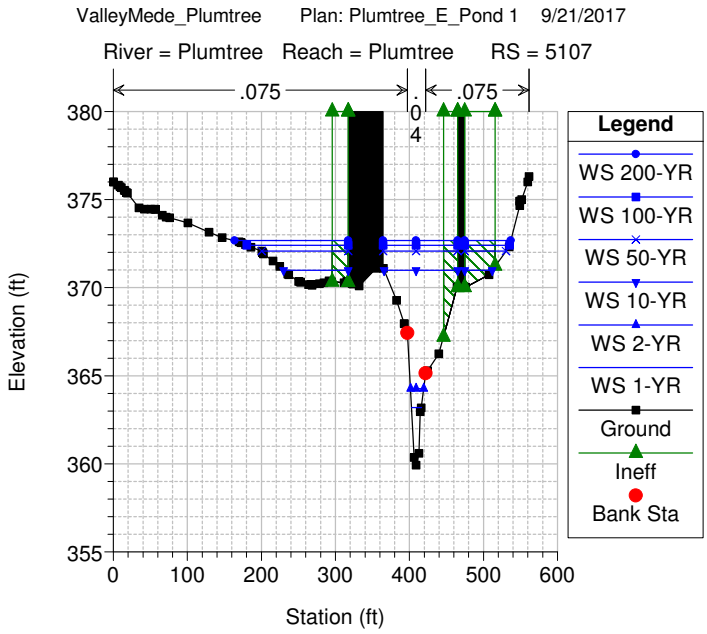

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

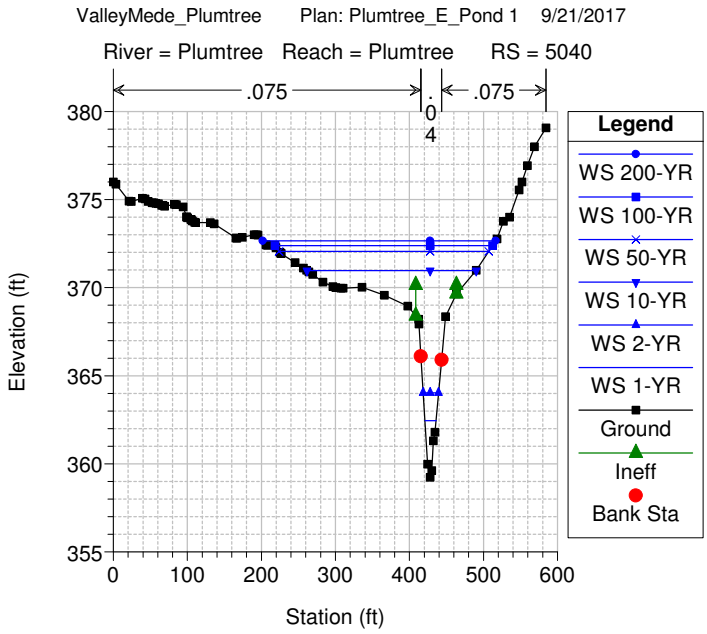

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5474
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

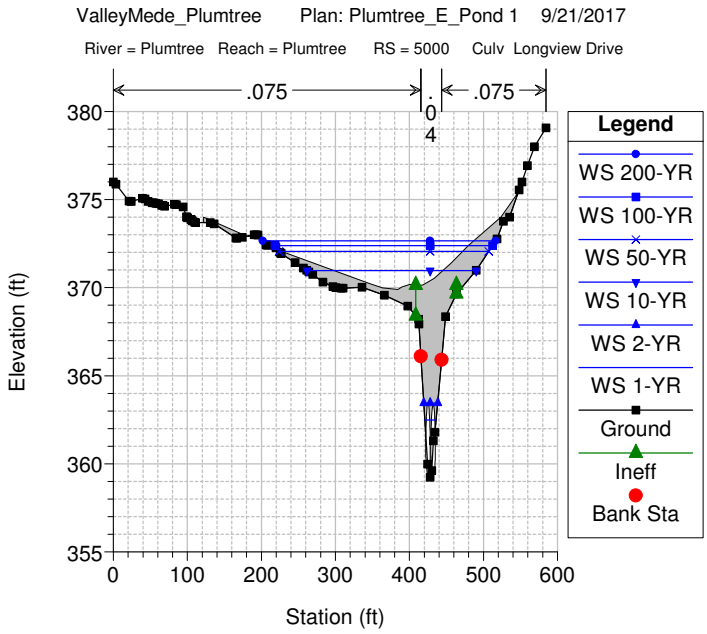

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5419
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

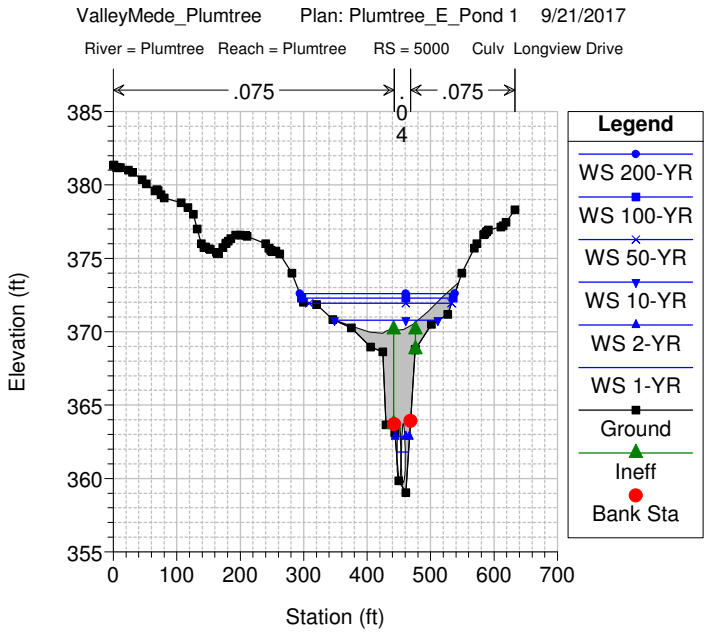

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5323
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

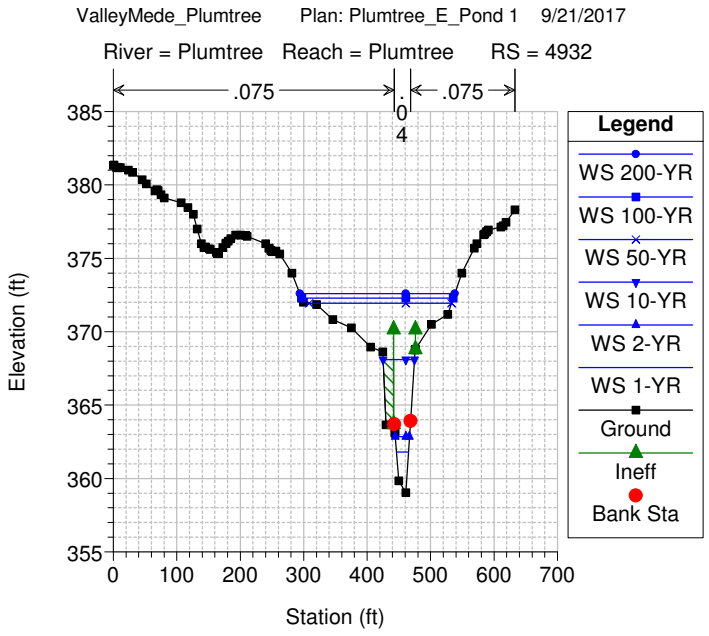

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5209
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

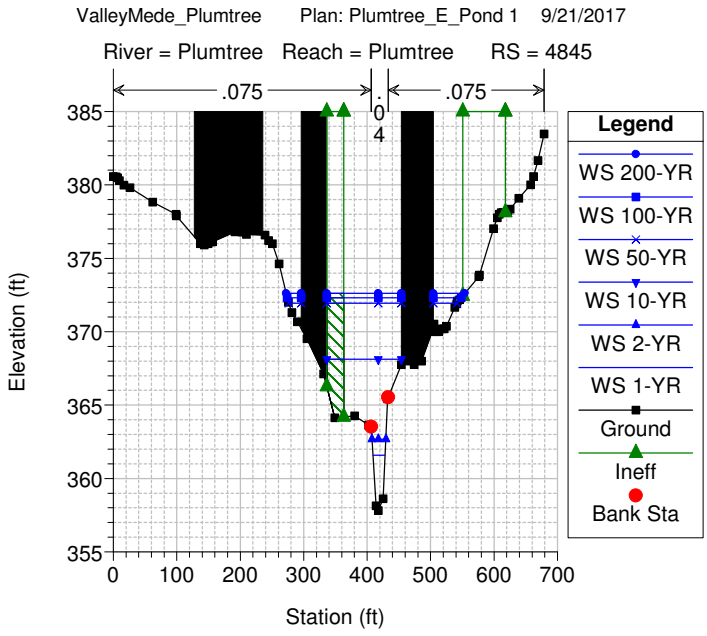

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5107
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

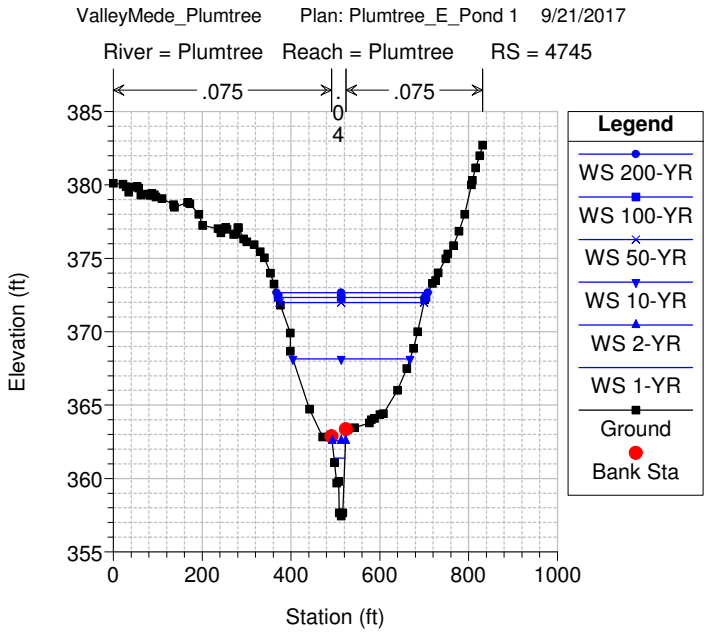

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5040
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

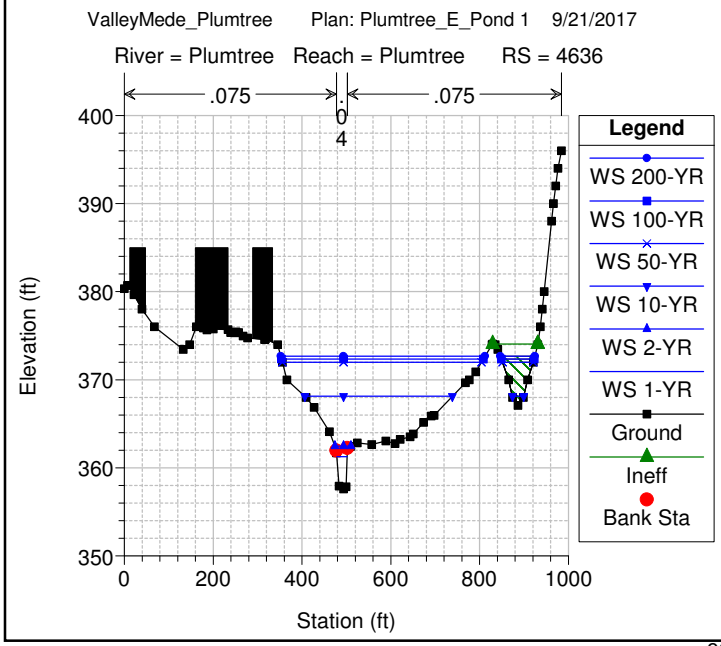

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

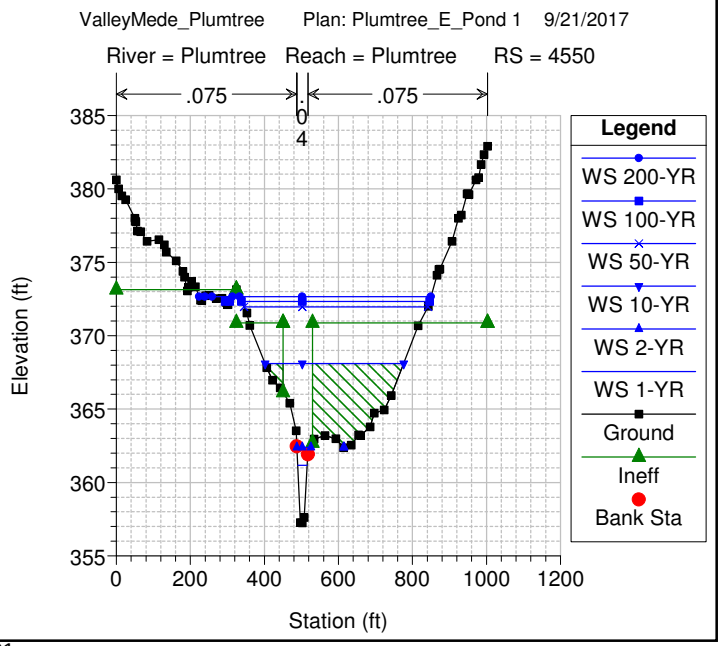

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

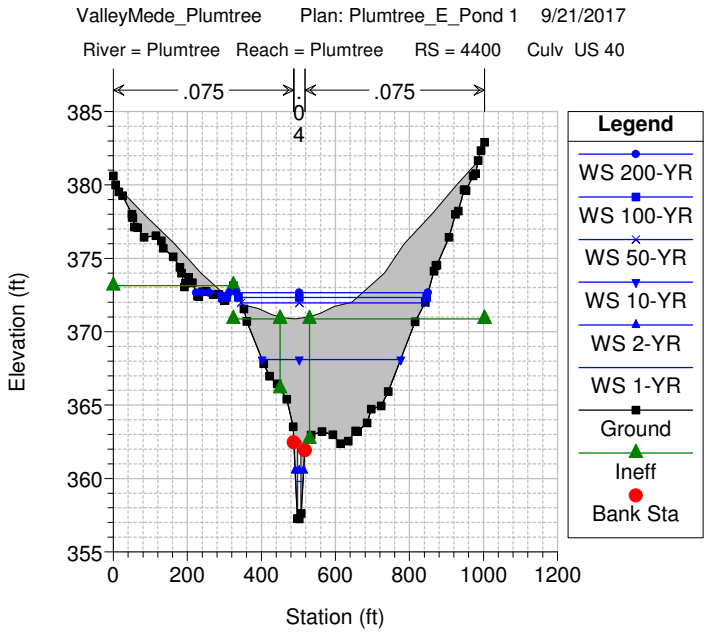

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4932
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

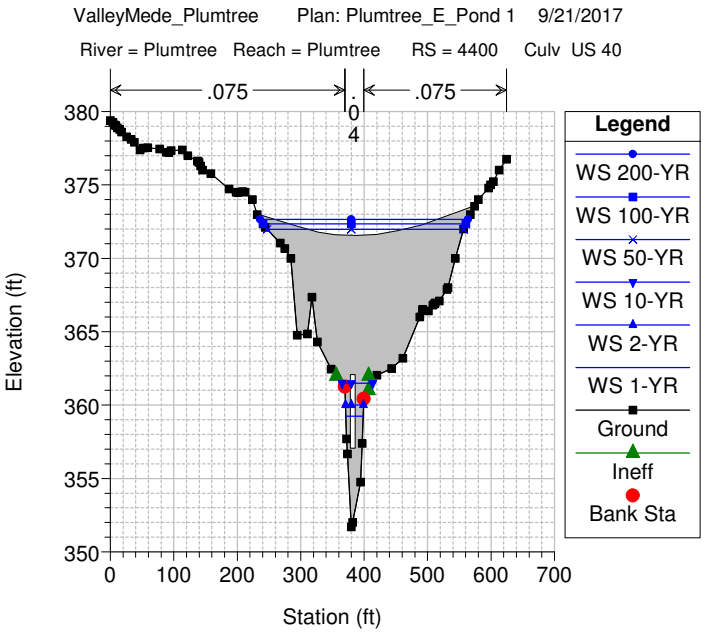

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4845
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

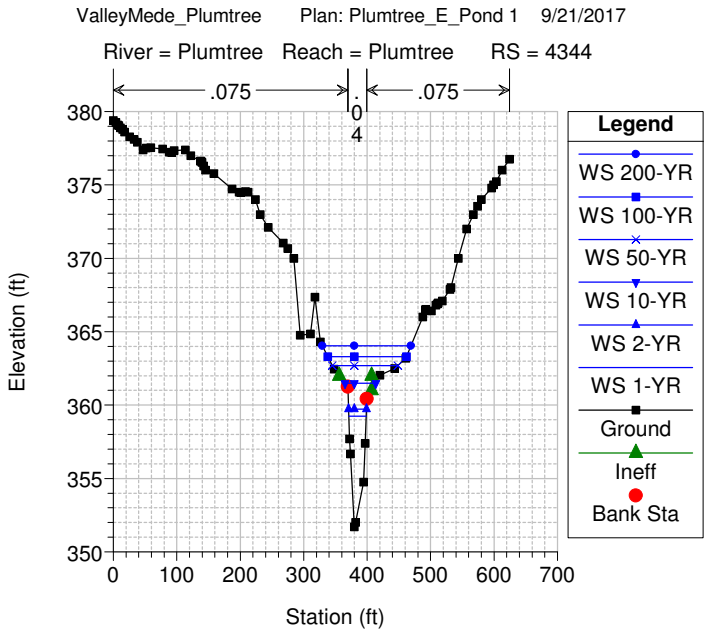

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4745
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

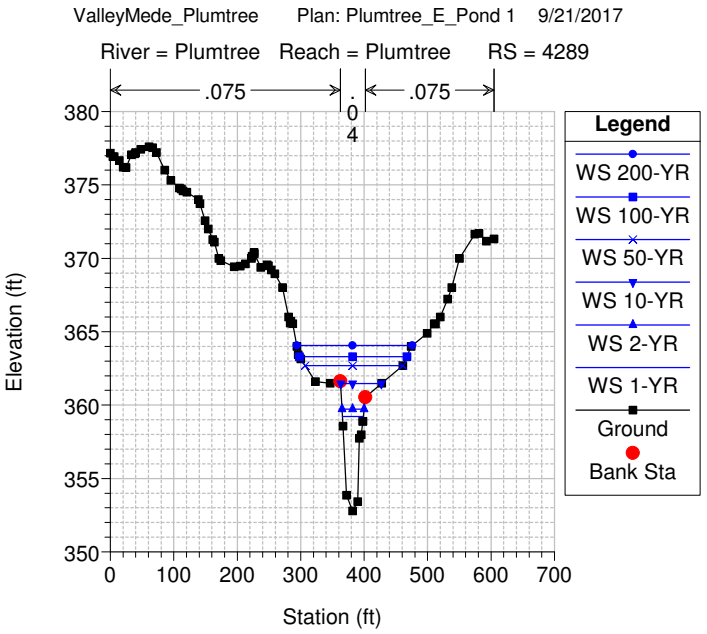

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4636
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

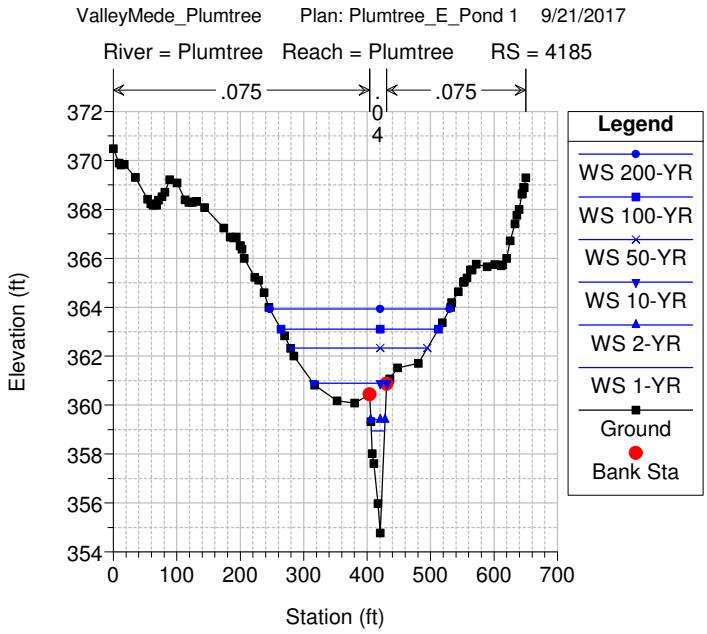

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4550
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

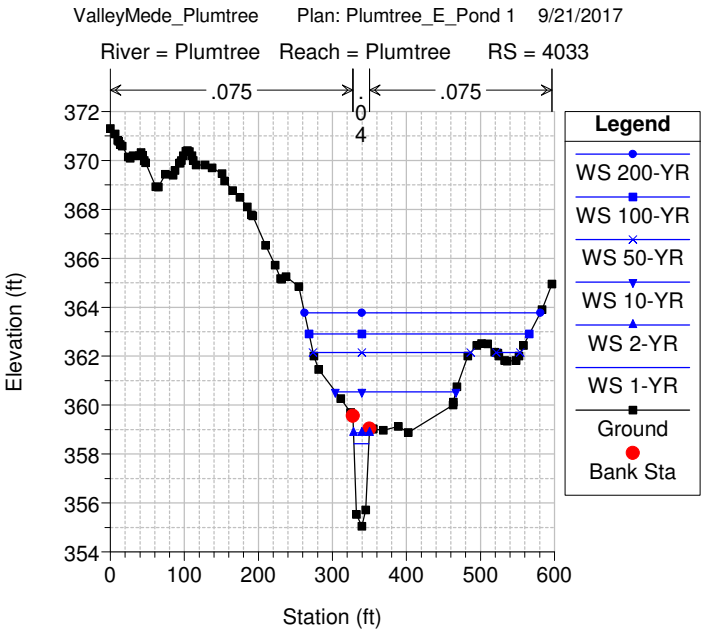

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

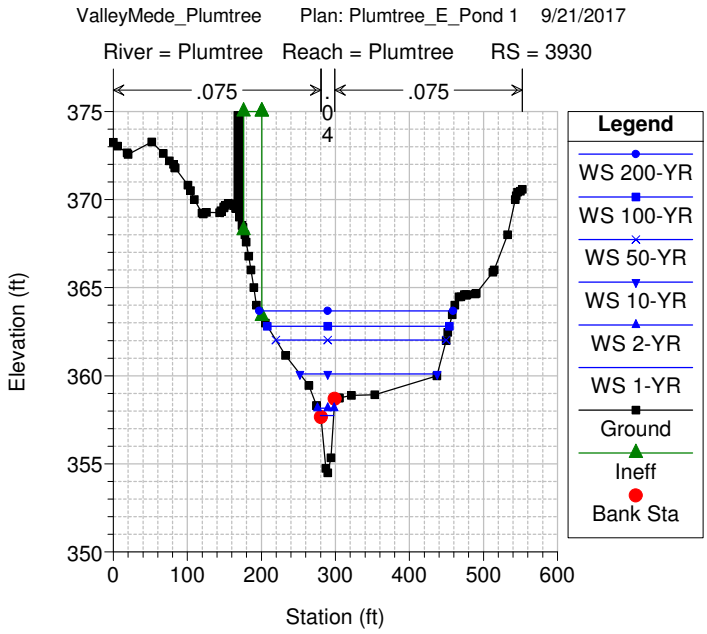

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

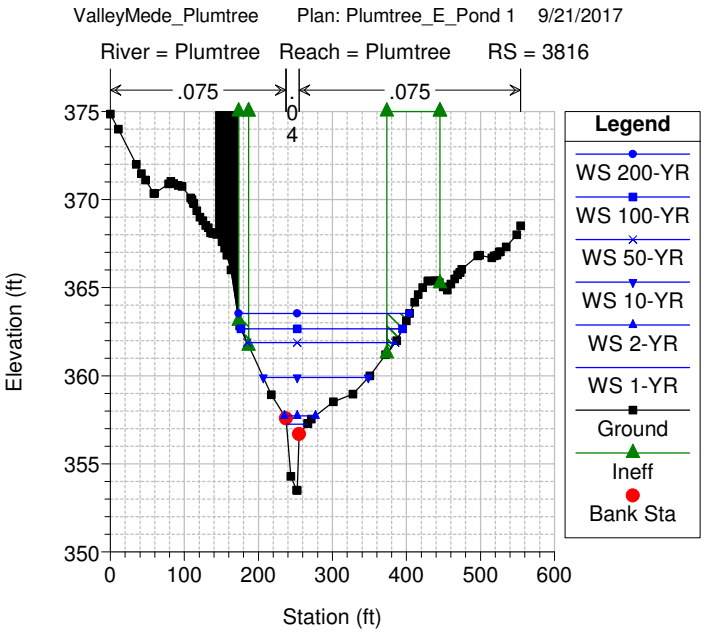

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4344
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

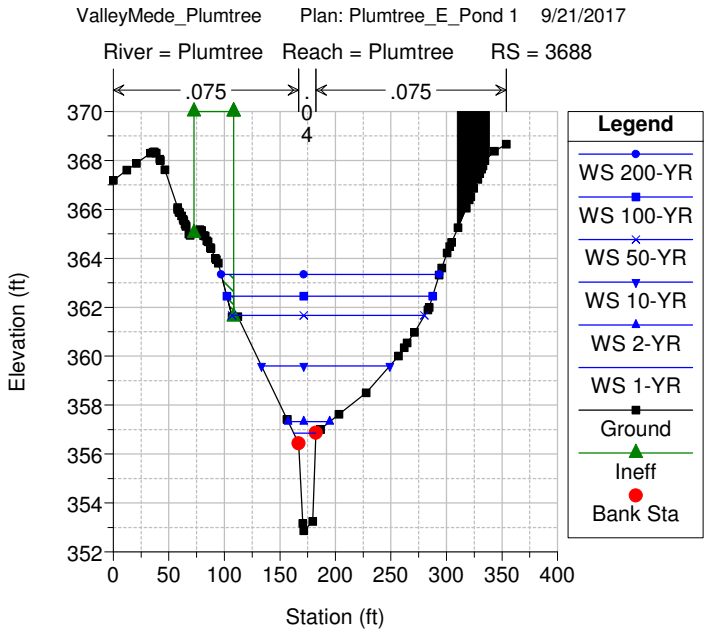

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4289
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

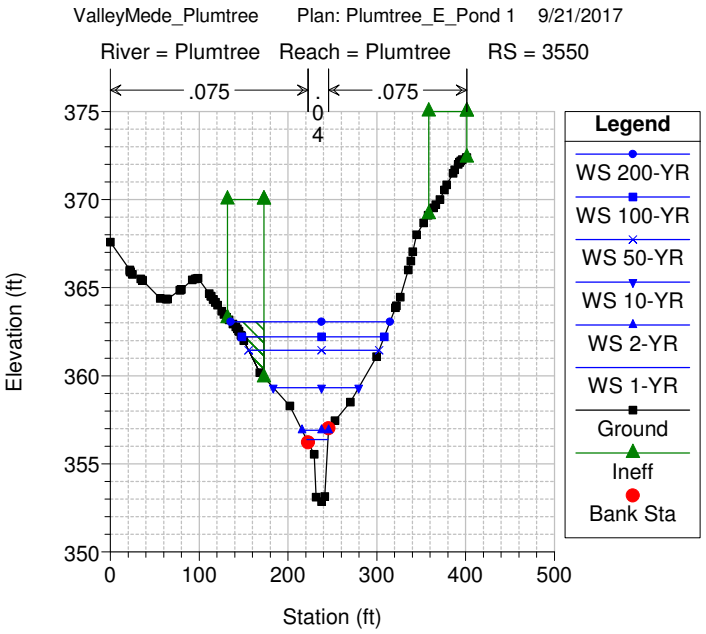

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4185
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

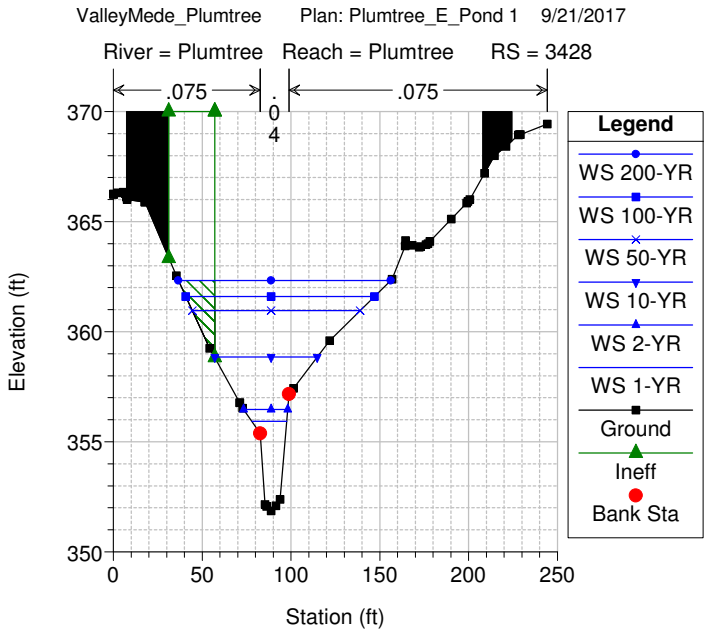

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 4033
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

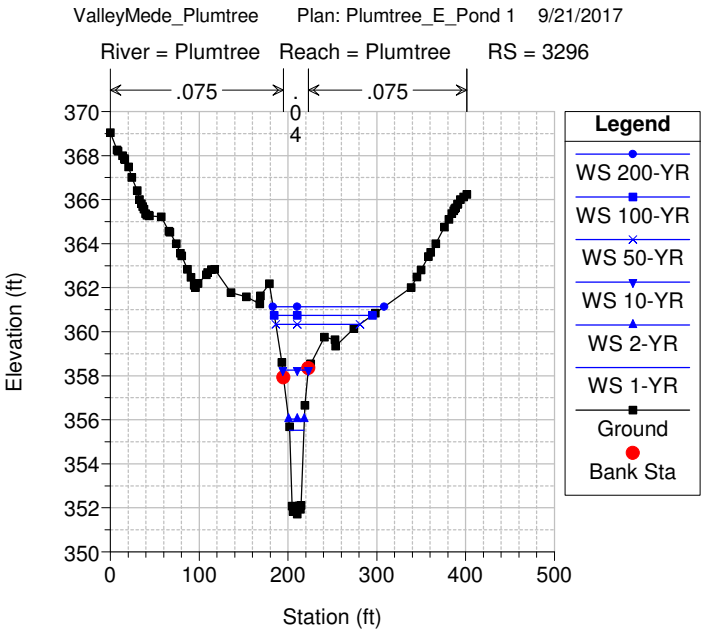

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 3930
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

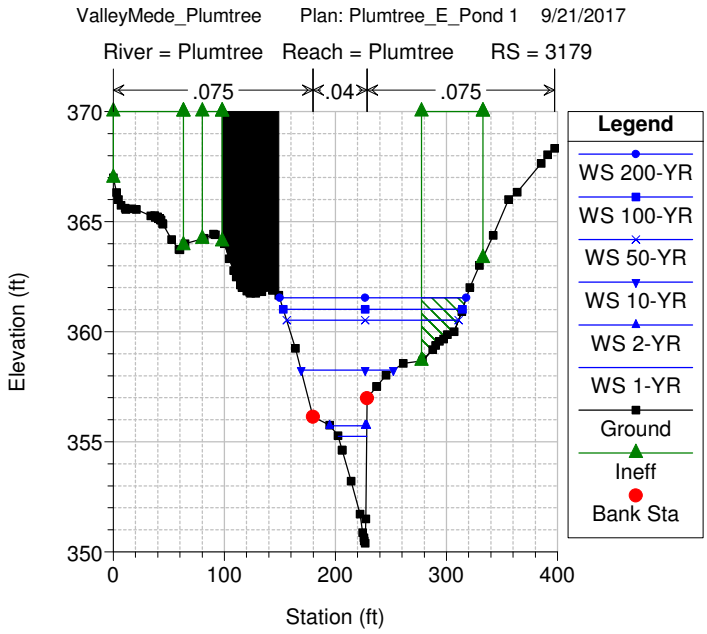

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 3816
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

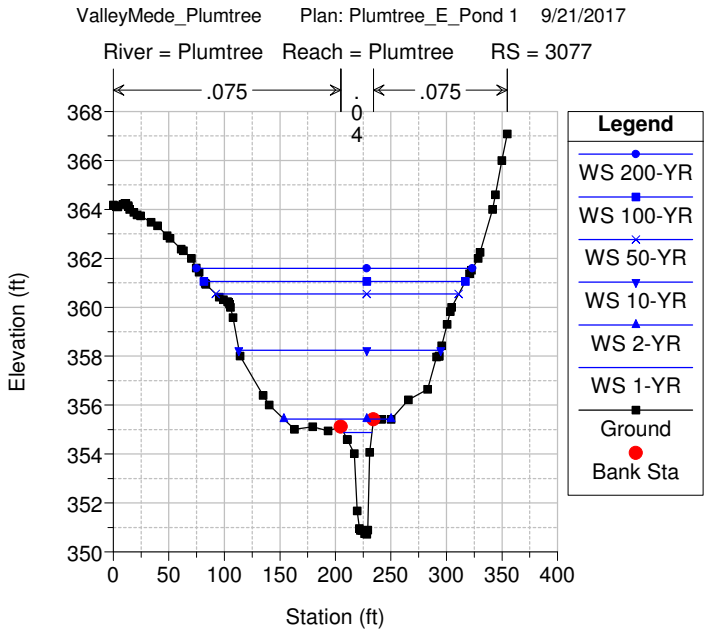

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 3688
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

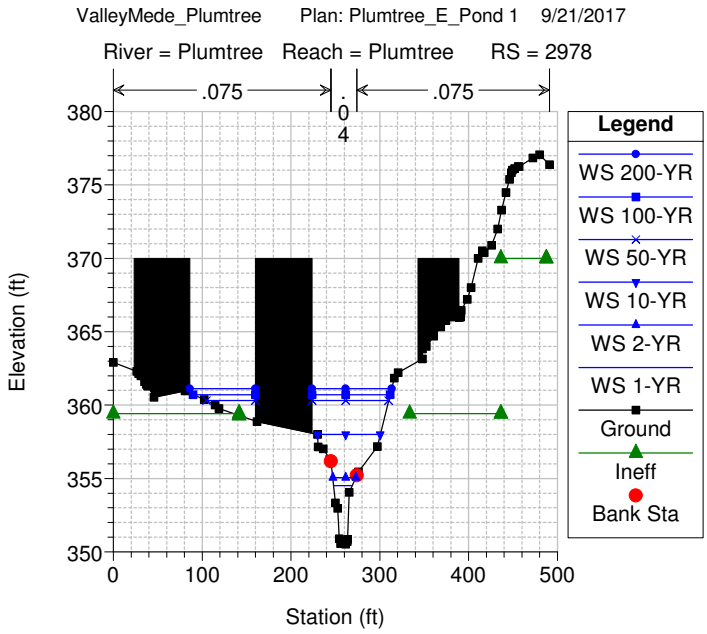

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 3550
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

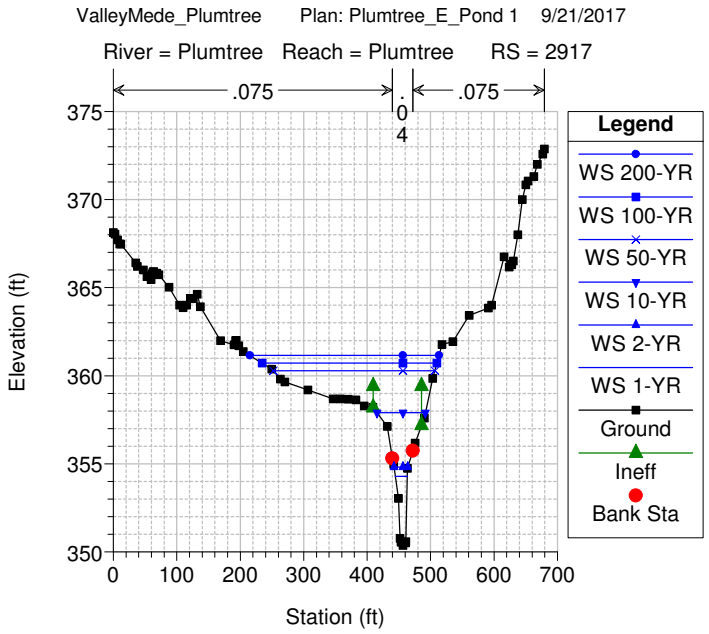

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 3428
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

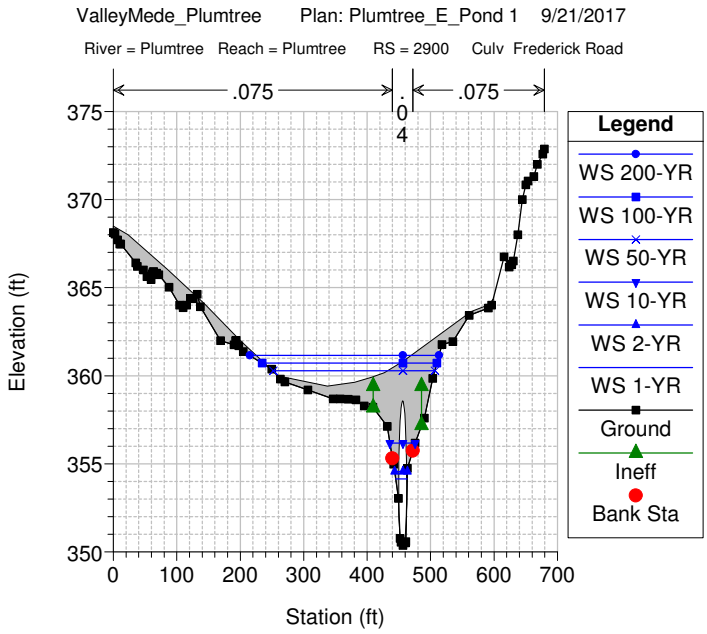

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 3296
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

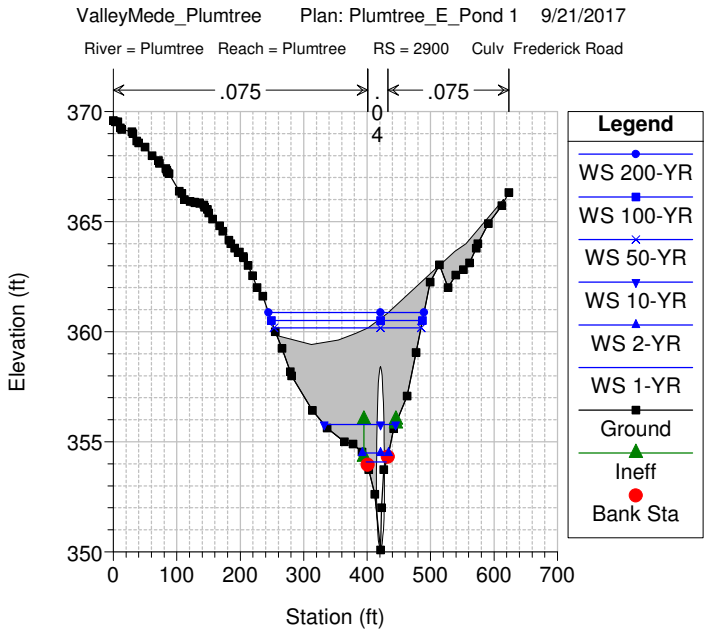

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 3179
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

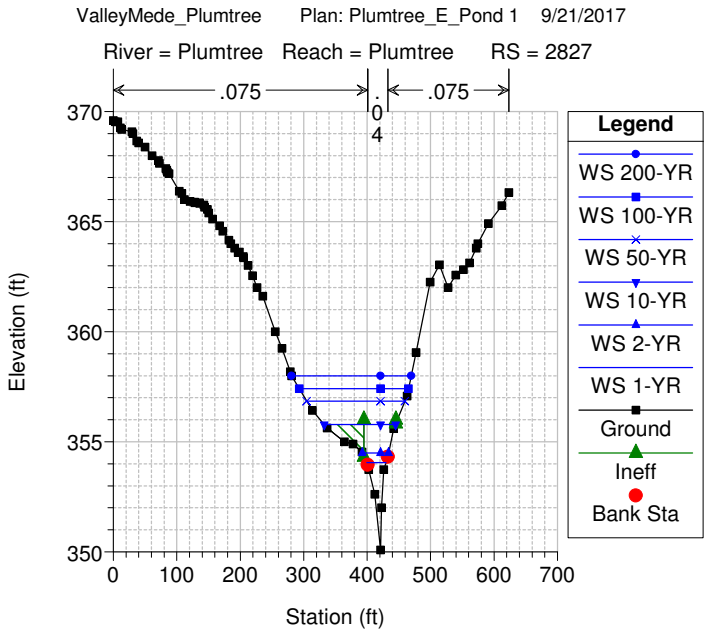

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 3077
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

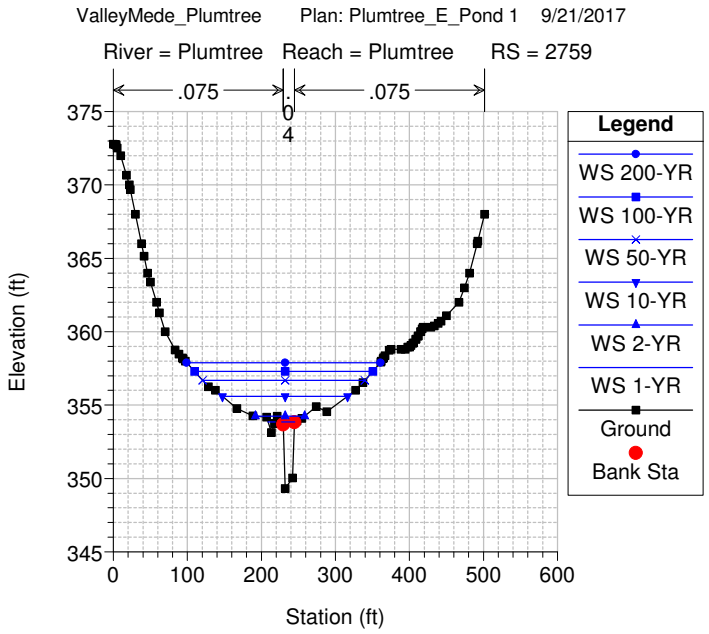

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 2978
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

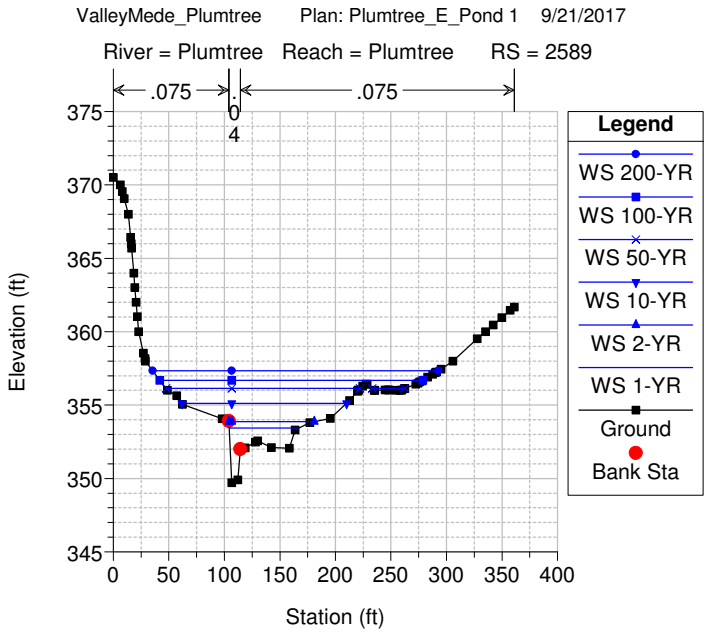

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 2917
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

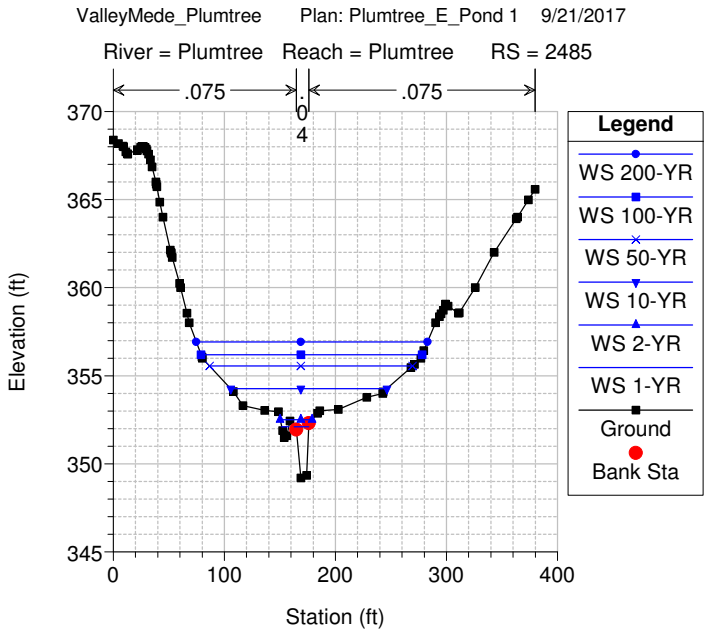

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

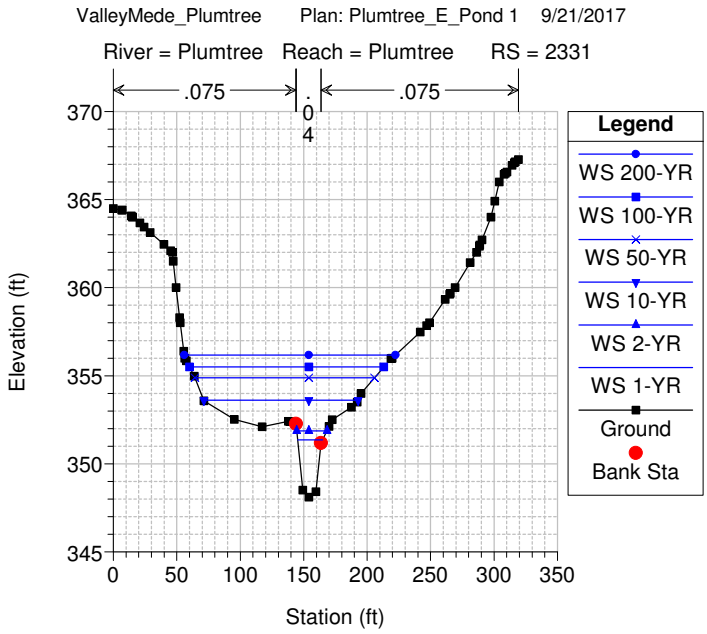

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

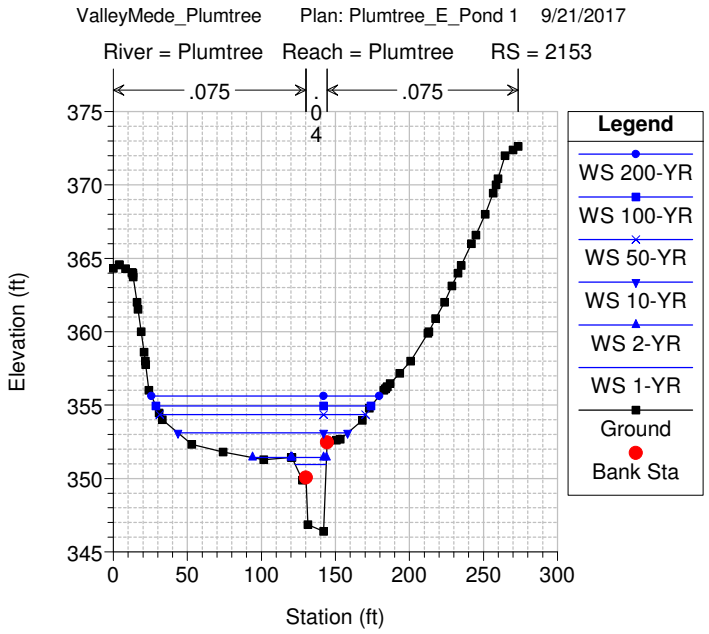

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 2827
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

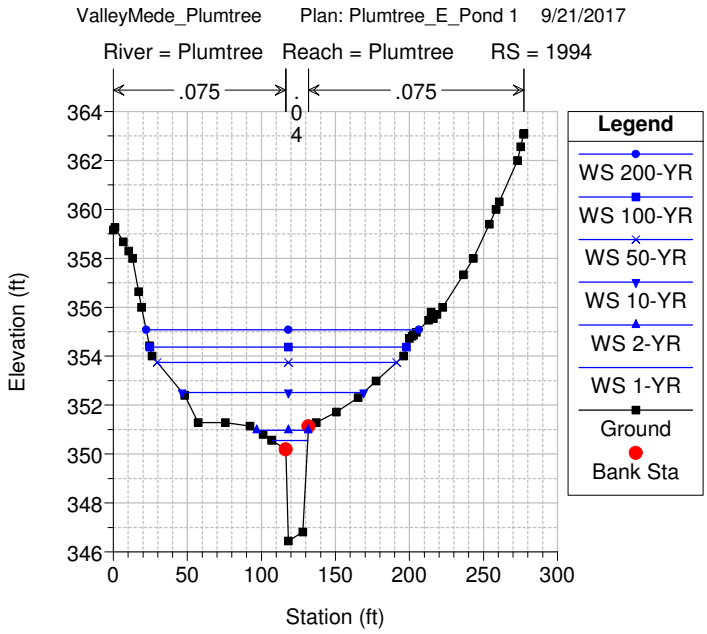

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 2759
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

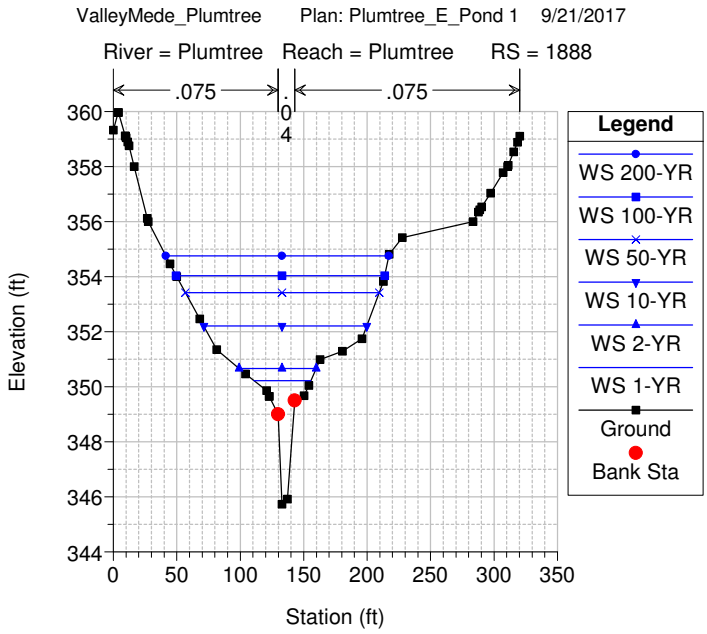

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 2589
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

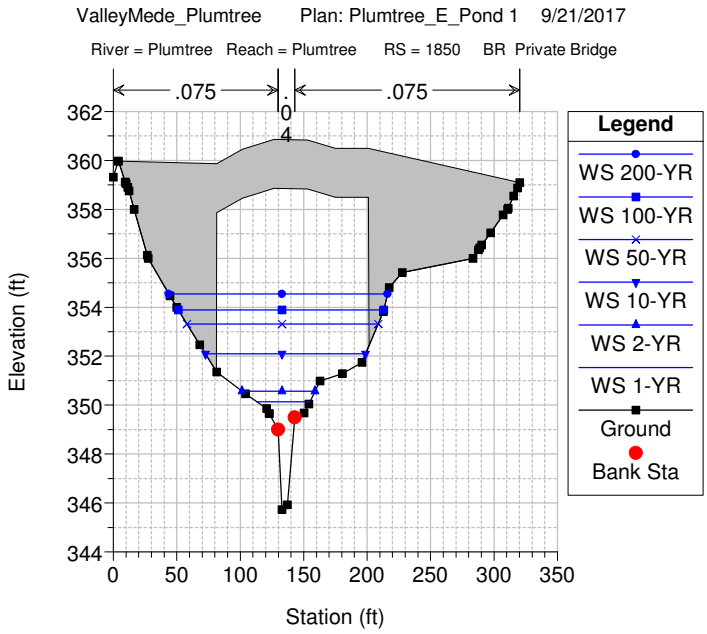

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 2485
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

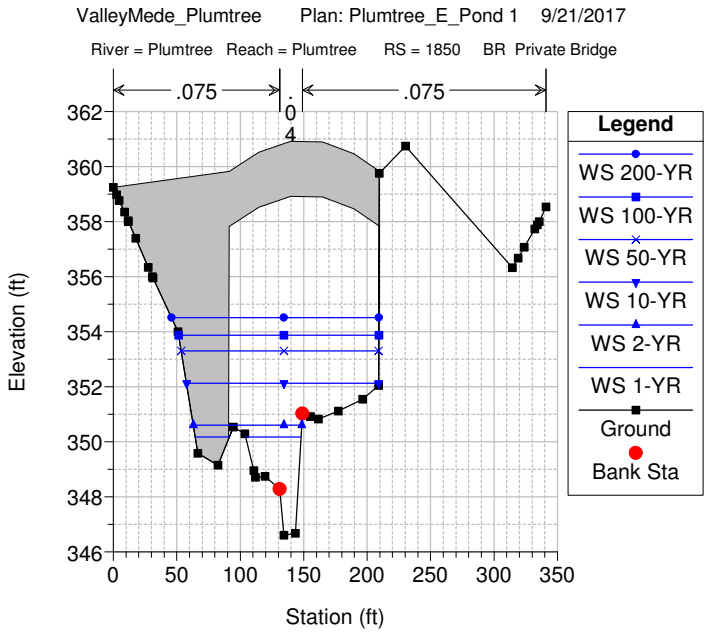

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 2331
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

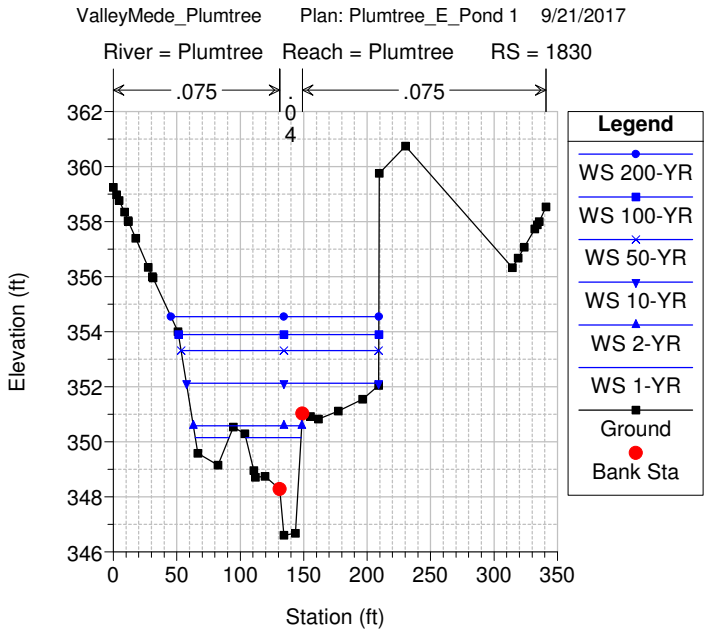

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 2153
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

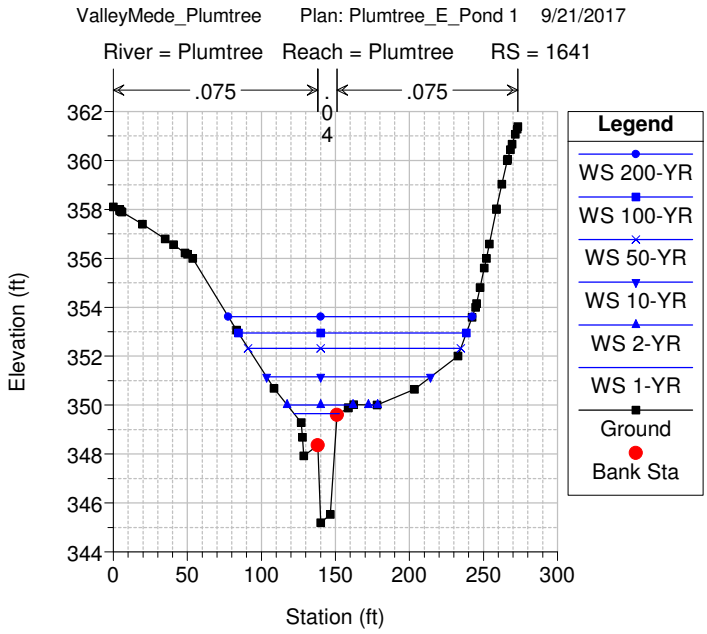

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 1994
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

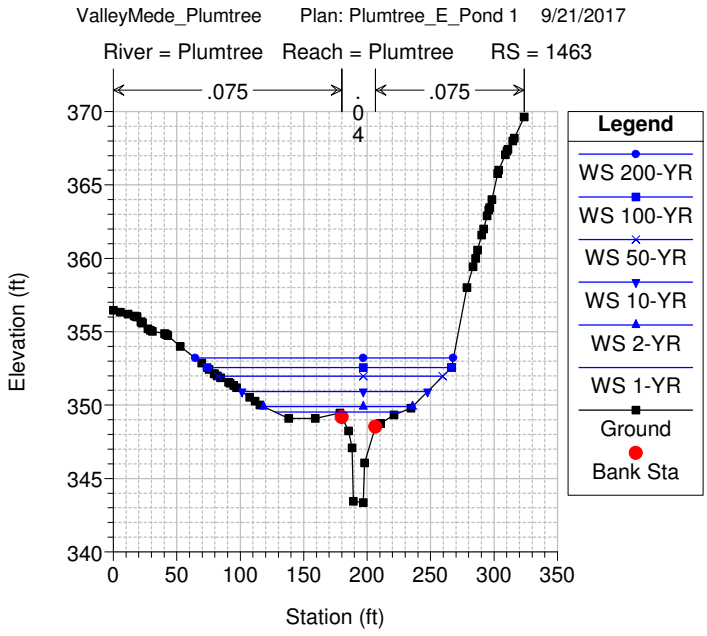

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 1888
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

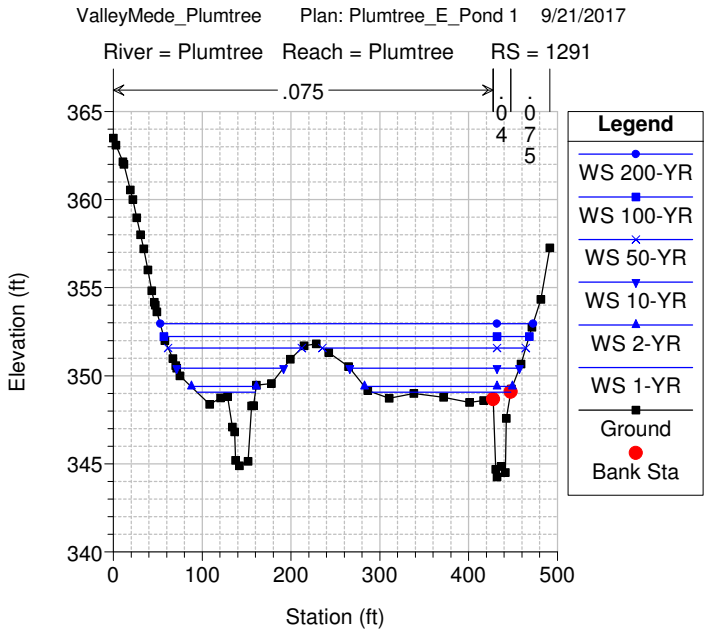

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

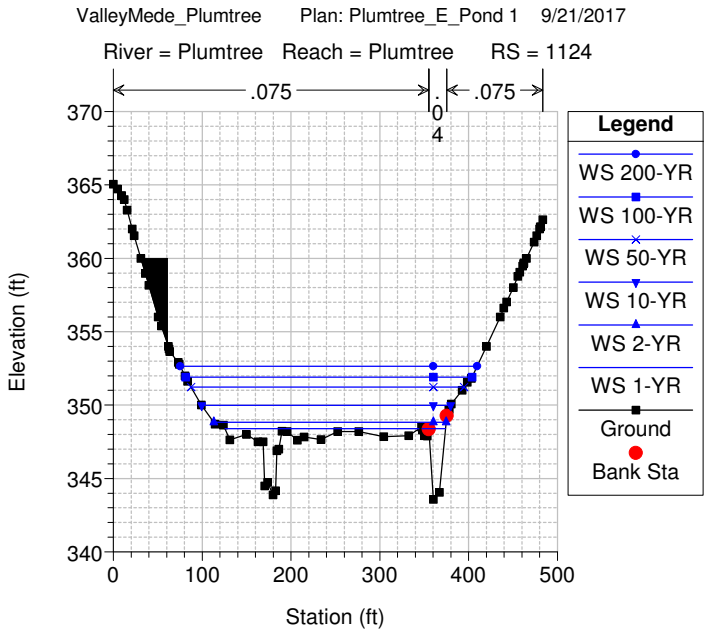

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

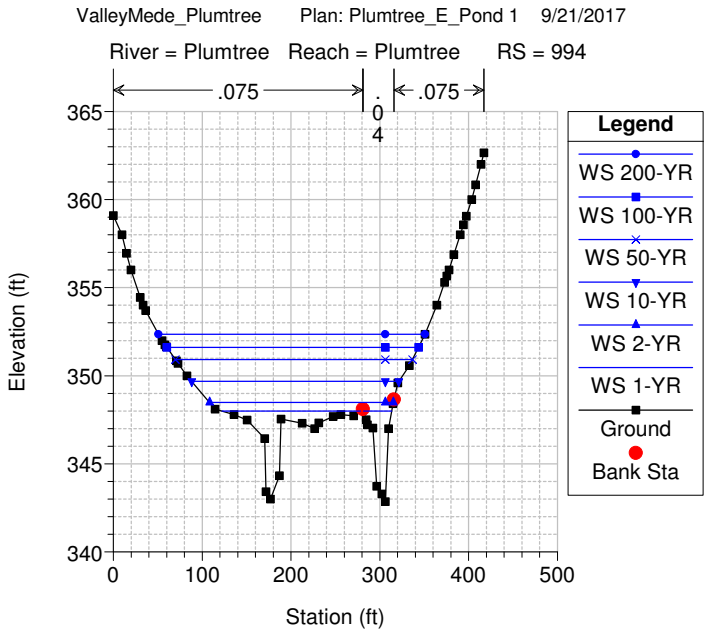

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 1830
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

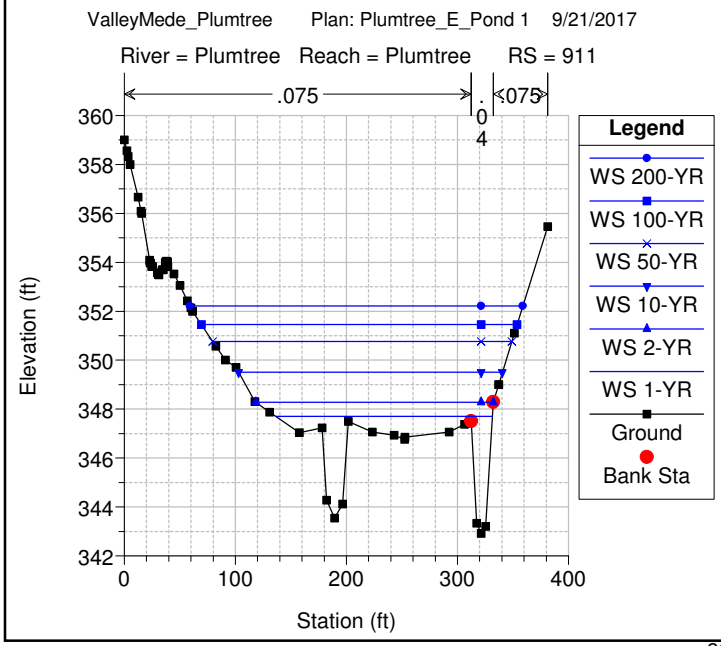

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 1641
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

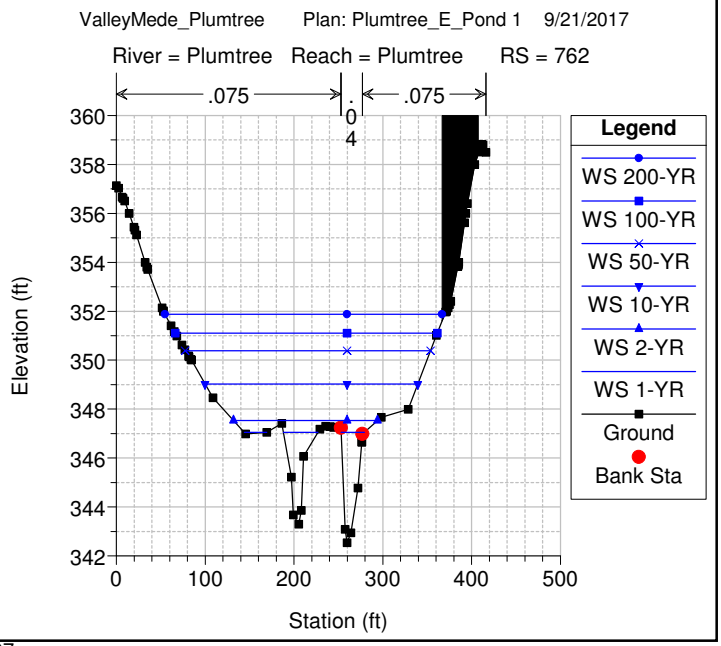

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 1463
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

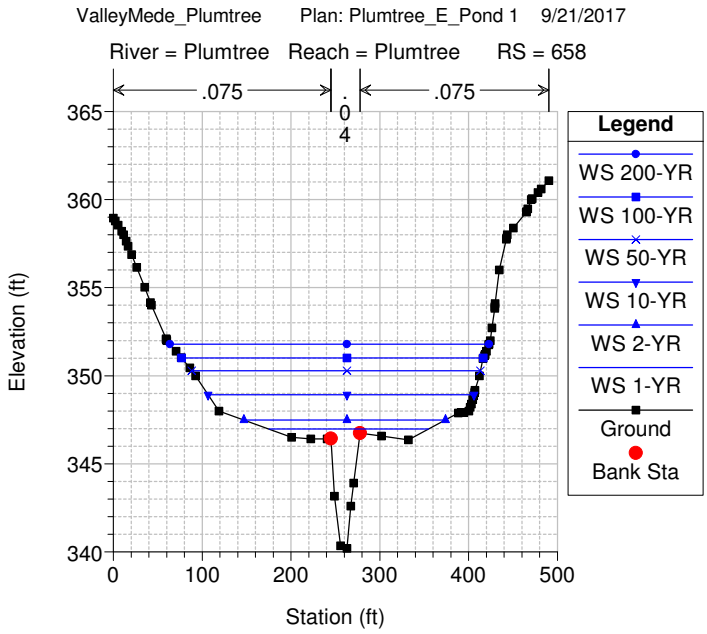

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 1291
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

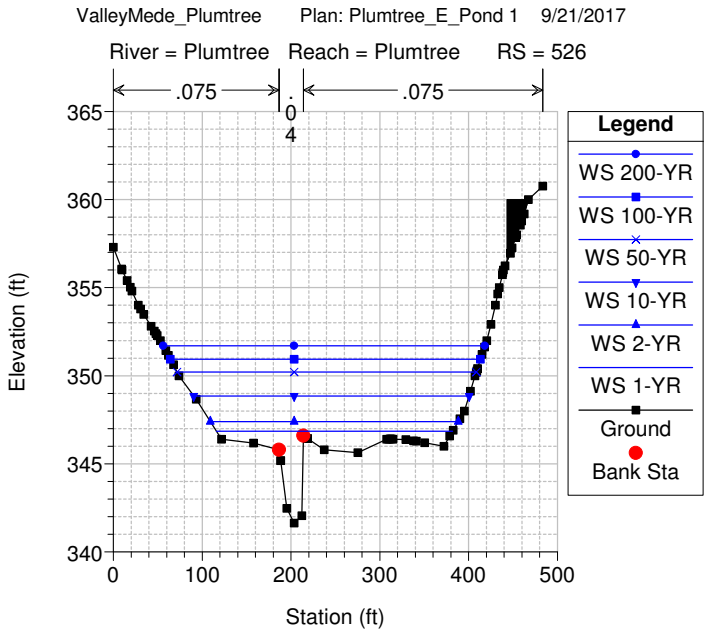

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 1124
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

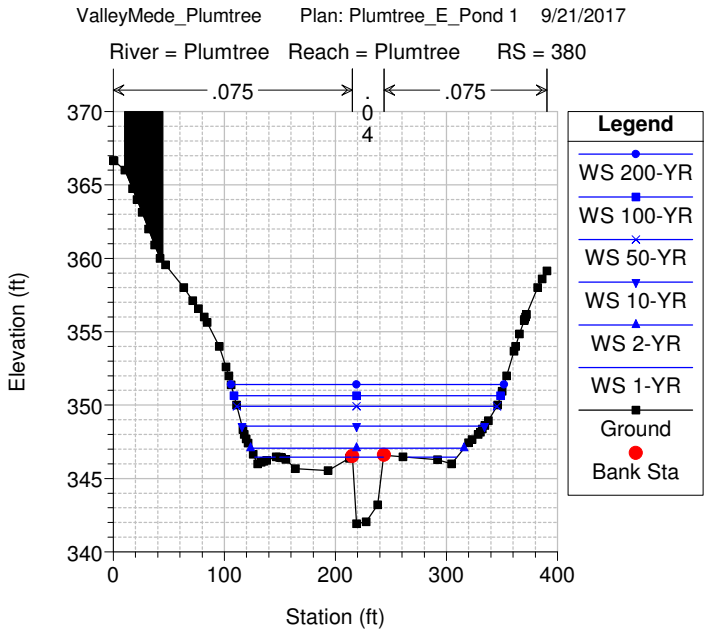

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 994
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

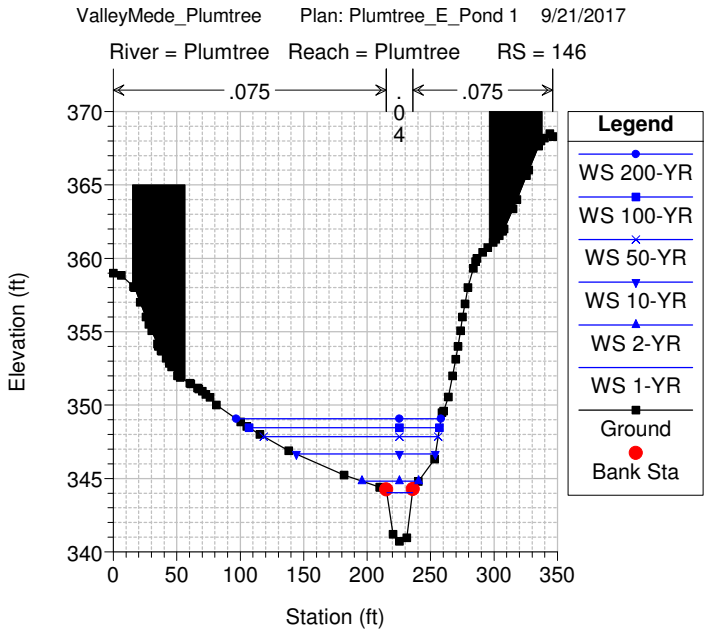

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 911
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

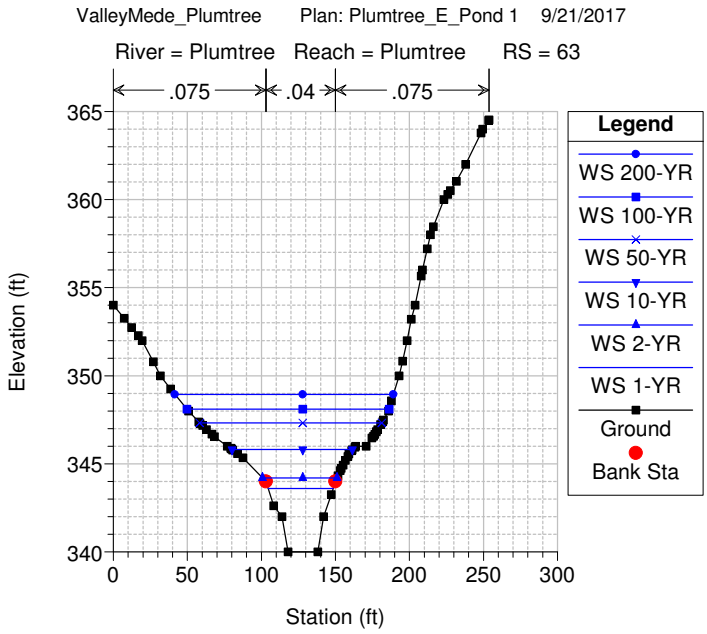

ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 762
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 658
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 526
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 380
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 146
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_E_Pond 1 9/21/2017
River = Plumtree Reach = Plumtree RS = 63
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
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PROJECT DATA
Project Title: ValleyMede_Plumtree
Project File : ValleyMede_Plumtree.prj
Run Date and Time: 9/21/2017 4:30:24 PM

Project in English units

PLAN DATA

Plan Title: Plumtree_E_Pond 1
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.p06

Geometry Title: Plumtree_E_Pond 1
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g10

Flow Title : Plumtree_E_Pond 1
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f09

Plan Description:
Proposed condition which includes grading for online storage in Plumtree Branch above Michaels Way. (Pond 1)

Plan Summary Information:
Number of: Cross Sections = 85 Multiple Openings = 0
Culverts = 6 Inline Structures = 0
Bridges = 2 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Plumtree_E_Pond 1
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f09

Flow Data (cfs)

River	Reach	RS	1-YR	2-YR	10-YR	50-YR	100-YR	200-YR

Plumtree	Plumtree	10286	223	307	596	995
1200	1441					
Plumtree	Plumtree	9499	138	210	544	1038
1384	1776					
Plumtree	Plumtree	6568	151	232	610	1152
1517	1943					
Plumtree	Plumtree	4185	174	227	609	1166
1529	1999					
Plumtree	Plumtree	1291	420	586	1265	2188
2798	3565					

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Plumtree	Plumtree	1-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	2-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	10-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	50-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	100-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	200-YR	Critical	Normal S = 0.0035

GEOMETRY DATA

Geometry Title: Plumtree_E_Pond 1
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g10

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10286

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	421.06	4.46	420.89	12.57	420.32	16.13	420	21.94	419.29
34.88	418	40.42	417.33	49.09	416.56	55.82	416.21	59.64	416.08
64.03	416.14	69.28	416.31	71.51	416.31	77.01	416.75	78.81	416.76
87.6	416	91.89	415.92	104.16	414	107.04	413.94	110.15	414
119.18	415.05	122.23	414.9	125.21	414.83	141.42	414.84	151.61	414.58
159.6	414.54	167.19	414.69	175.25	414.38	179.96	413.77	184.56	413.83
198.65	413.63	213.29	412.97	221.19	413.06	244.79	412.19	252.86	412
260.69	411.14	268.55	410	275.66	409.1	281.64	408	295.07	406.35
301.98	405.73	324.56	404	331.77	402.81	335.97	402	342.56	400
348.24	398	350.27	397.89	356.41	396	360.42	395	363.48	394
369.55	392	375.62	390	380.47	388.4	381.68	388	486.9	388
492.96	390	499.01	392	511.13	396	514.52	396	527.48	398
535.86	400	542.87	402	555.37	406	562.67	408	571.1	410
582.03	412	599.19	414	605.88	414.94	612.34	415.57	635.29	417.19

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.085	350.27	.055	369.55	.04	499.01	.055	514.52	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
369.55	499.01	240.46	241.25	237.2	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10044

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	412.61	5.59	412.52	12.02	412	24.56	410	43.68	408
63.32	407.31	82.83	408	95.82	408.67	112.17	408.9	135.95	408
150.67	407.02	155.38	406.93	170.58	407.72	184.39	408.12	187.95	408
198.17	406	207.41	404.64	213.72	403.97	220.01	403.47	230.16	403.33
237.26	402.98	240.08	402.75	253.05	401.3	261.48	400	269.64	398

```
  272.75     396  275.83     395  280.91  393.35  285.04     392  291.19     390
  297.33     388  489.28     388  495.29     390   501.3     392  507.31     394
  510.32     395  513.32     396  547.82     396  555.48  396.43  564.03  396.66
  570.08  396.96  600.19   397.8  605.55  398.35  610.97  398.79  622.38  399.08
  632.53     400  658.42  401.23  661.34  401.26  665.82  401.48  679.52  401.73
  692.52  401.54  695.05  401.76  701.43  401.68  704.45   401.5  715.06  401.24
  723.65  401.19  738.24  400.62  741.08  400.41  748.78  400.57  754.02  400.82
  766.27  400.65  779.16  401.67  781.77     402  794.47     404  812.23     408
  815.19   408.2

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  269.64    .055  285.04     .04   501.3    .055  547.82    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        285.04   501.3            233.9  230.57  222.97            .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9814

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  408.67   12.64     408    20.9   407.3   27.53  406.98    42.5  406.44
   45.07  406.25   49.58  405.72   78.23  403.56   83.62  402.79   92.79  403.11
  109.61   402.4   113.8     402  123.62  401.65  158.68  400.12  170.91  398.99
  182.64     398  185.71     396  195.08  392.88  209.71     388  491.68     388
  507.27  392.96  510.52     394  513.65     395  518.53   395.7  538.06  395.23
  547.13  395.22  564.37     396  575.99  396.66  593.58  397.53   602.7  396.78
  604.57  396.76  609.13  397.48  610.69     398  617.78   398.3   636.1  398.77
  690.36  399.64  696.36  399.66  731.55   398.7   739.3  398.59  745.07  398.39
  755.19  398.48   767.5  398.81  779.98  399.52  790.91  399.95  806.05     402
  818.51   403.5  823.74     404  826.23   404.1

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  182.64    .055  195.08     .04  507.27    .055  518.53    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        195.08  507.27            52.2   51.56   50.88            .1       .3
Right Levee     Station=  518.53      Elevation=   395.7

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9762

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  406.21    1.37     406   14.09  404.95   24.55  404.21   38.68  402.62
   47.25     402   67.31     400   71.18  399.81    79.7  399.62   84.43  399.37
  117.61  398.32   130.2  398.16  134.88     398  147.37  397.38  157.13  397.03
  162.41  397.34  174.01  396.74  180.15     396  183.28     395   186.4     394
  192.66     392  205.16     388  471.31     388  484.05     392  490.41     394
   493.6     395  507.72  395.47  543.73  396.64  554.26  396.66  559.24  396.89
  562.97  396.96  568.76  397.23  584.75  397.94  589.53  398.31  594.28     398
  601.77  397.68  611.77     398   662.6   399.2  729.79  397.67  753.67  397.86
  761.91     398   785.2  399.61  794.52  400.41  805.84  402.01

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  180.15    .055  192.66     .04  484.05    .055  507.72    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        192.66  484.05            32.64   30.09   27.57            .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9732
```

```
INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   29.73     396   32.75     395
   35.75     394   41.77     392    47.8     390   53.85     388    82.5  387.93
  100.87  387.89   104.5     387   110.8  387.67  121.15  387.71  188.96     388
  235.44     390  281.92     392  319.96     394  323.08     395  326.21     396
  333.46  396.42  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .055    82.5     .04  121.15    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  121.15           145.71  143.47  141.55             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 9650

INPUT
Description: Michaels Way
Distance from Upstream XS =      51
Deck/Roadway Width        =      50
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  396.38           26.1 395.934           49.6 395.582
    91.4 394.914          117.4 394.746          144.9 394.497
   186.3 394.402          211.94 394.376         238.63 394.594
  353.45     396

Upstream Bridge Cross Section Data
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   29.73     396   32.75     395
   35.75     394   41.77     392    47.8     390   53.85     388    82.5  387.93
  100.87  387.89   104.5     387   110.8  387.67  121.15  387.71  188.96     388
  235.44     390  281.92     392  319.96     394  323.08     395  326.21     396
  333.46  396.42  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .055    82.5     .04  121.15    .055

Bank Sta: Left   Right    Coeff Contr.   Expan.
          82.5  121.15             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  397.96           8.6   397.3           45.6 396.969
    68.8 396.671          92.4  396.38          123.2 395.934
   146.8 395.582          191.3 394.914          209.6 394.746
   232.9 394.497          262.2 394.402          288.2 394.376
  314.98 394.594          417.56     396

Downstream Bridge Cross Section Data
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.96   15.99  396.01   17.57     396   20.76  395.29   25.99  395.01
   29.32  394.71   29.33  394.38   39.55  392.85   60.92  392.22   95.59   390.4
  100.13  389.82  106.73  388.97  116.38  387.66  117.95  386.81  124.68  386.27
  130.57  386.46  134.27   387.9   134.7     388  137.88  388.68  144.79  390.87
  157.88  392.09  174.45  391.81  191.33  392.09  218.95   392.7   229.4  392.07
  229.72  392.09  239.13  392.16  239.87  392.21  251.99  392.37  252.81  392.33
  253.84  392.05  264.78  392.06  265.66  392.35  265.82  392.37  274.13  392.48
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  275.38  392.39   275.8  392.37  280.37  392.38  285.74  392.34  288.04  392.35
  289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
  294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
  302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
  336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
  353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
  363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        106.73  137.88            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8   391.2       F
   140.7  417.56   391.2       F

Upstream Embankment side slope              =       3 horiz. to 1.0 vertical
Downstream Embankment side slope            =       3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.5     .024     .016        0                  .5                1
Upstream   Elevation =  387.74
           Centerline Station =  102
Downstream Elevation =  386.61
           Centerline Station =  120

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.6     .024     .016        0                  .5                1
Upstream   Elevation =  387.77
           Centerline Station =  112
Downstream Elevation =  386.6
           Centerline Station =  130

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        112.62    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          7.43
  Q Barrel (cfs)            112.62    Culv Vel DS (ft/s)          6.49
  E.G. US. (ft)             391.04    Culv Inv El Up (ft)       387.74
  W.S. US. (ft)             391.01    Culv Inv El Dn (ft)       386.61
  E.G. DS (ft)              389.24    Culv Frctn Ls (ft)          0.17
  W.S. DS (ft)              388.90    Culv Exit Loss (ft)         0.31
  Delta EG (ft)               1.80    Culv Entr Loss (ft)         0.43
  Delta WS (ft)               2.11    Q Weir (cfs)
  E.G. IC (ft)              390.65    Weir Sta Lft (ft)
  E.G. OC (ft)              391.04    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        389.76    Weir Max Depth (ft)
  Culv WS Outlet (ft)       388.90    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.02    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         1.96    Min El Weir Flow (ft)     394.39


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        146.42    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          8.10
  Q Barrel (cfs)            146.42    Culv Vel DS (ft/s)          6.74
  E.G. US. (ft)             391.55    Culv Inv El Up (ft)       387.74
```

W.S. US. (ft)	391.51	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.76	Culv Frctn Ls (ft)	0.24
W.S. DS (ft)	389.40	Culv Exit Loss (ft)	0.34
Delta EG (ft)	1.79	Culv Entr Loss (ft)	0.51
Delta WS (ft)	2.11	Q Weir (cfs)	
E.G. IC (ft)	391.22	Weir Sta Lft (ft)	
E.G. OC (ft)	391.64	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.11	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.40	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.37	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.37	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	298.50	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.78
Q Barrel (cfs)	298.50	Culv Vel DS (ft/s)	9.71
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	393.90	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	391.13	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	390.62	Culv Exit Loss (ft)	0.96
Delta EG (ft)	2.83	Culv Entr Loss (ft)	0.74
Delta WS (ft)	3.28	Q Weir (cfs)	
E.G. IC (ft)	393.54	Weir Sta Lft (ft)	
E.G. OC (ft)	393.95	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.72	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.62	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.98	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	375.26	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.07
Q Barrel (cfs)	375.26	Culv Vel DS (ft/s)	10.23
E.G. US. (ft)	395.23	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.22	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.31	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	391.62	Culv Exit Loss (ft)	0.93
Delta EG (ft)	2.91	Culv Entr Loss (ft)	0.79
Delta WS (ft)	3.60	Q Weir (cfs)	244.33
E.G. IC (ft)	395.02	Weir Sta Lft (ft)	72.09
E.G. OC (ft)	395.22	Weir Sta Rgt (ft)	289.96
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.85	Weir Max Depth (ft)	0.85
Culv WS Outlet (ft)	391.62	Weir Avg Depth (ft)	0.55
Culv Nml Depth (ft)	5.32	Weir Flow Area (sq ft)	118.90
Culv Crt Depth (ft)	4.04	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	372.80	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.46
Q Barrel (cfs)	372.80	Culv Vel DS (ft/s)	9.52
E.G. US. (ft)	395.52	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.51	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.92	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	392.22	Culv Exit Loss (ft)	0.71
Delta EG (ft)	2.61	Culv Entr Loss (ft)	0.70
Delta WS (ft)	3.30	Q Weir (cfs)	453.67
E.G. IC (ft)	394.96	Weir Sta Lft (ft)	53.23
E.G. OC (ft)	395.52	Weir Sta Rgt (ft)	314.58
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.43	Weir Max Depth (ft)	1.15
Culv WS Outlet (ft)	392.22	Weir Avg Depth (ft)	0.73
Culv Nml Depth (ft)	5.25	Weir Flow Area (sq ft)	191.13
Culv Crt Depth (ft)	4.02	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	351.48	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.78
Q Barrel (cfs)	351.48	Culv Vel DS (ft/s)	8.78

E.G. US. (ft)	395.83	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.82	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.46	Culv Frctn Ls (ft)	1.14
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.62
Delta EG (ft)	2.36	Culv Entr Loss (ft)	0.60
Delta WS (ft)	2.93	Q Weir (cfs)	737.57
E.G. IC (ft)	394.46	Weir Sta Lft (ft)	33.47
E.G. OC (ft)	395.82	Weir Sta Rgt (ft)	325.66
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.45
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	0.94
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	274.90
Culv Crt Depth (ft)	3.85	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.38	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.47
Q Barrel (cfs)	110.38	Culv Vel DS (ft/s)	6.33
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	391.01	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.24	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	388.90	Culv Exit Loss (ft)	0.28
Delta EG (ft)	1.80	Culv Entr Loss (ft)	0.43
Delta WS (ft)	2.11	Q Weir (cfs)	
E.G. IC (ft)	390.64	Weir Sta Lft (ft)	
E.G. OC (ft)	391.04	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.74	Weir Max Depth (ft)	
Culv WS Outlet (ft)	388.90	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.97	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.94	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	160.58	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.38
Q Barrel (cfs)	160.58	Culv Vel DS (ft/s)	7.36
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	391.51	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.76	Culv Frctn Ls (ft)	0.42
W.S. DS (ft)	389.40	Culv Exit Loss (ft)	0.48
Delta EG (ft)	1.79	Culv Entr Loss (ft)	0.10
Delta WS (ft)	2.11	Q Weir (cfs)	
E.G. IC (ft)	391.46	Weir Sta Lft (ft)	
E.G. OC (ft)	391.90	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	390.27	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.40	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.49	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.50	Min El Weir Flow (ft)	394.39

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	297.50	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.87
Q Barrel (cfs)	297.50	Culv Vel DS (ft/s)	9.66
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	393.90	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	391.13	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	390.62	Culv Exit Loss (ft)	0.94
Delta EG (ft)	2.83	Culv Entr Loss (ft)	0.76
Delta WS (ft)	3.28	Q Weir (cfs)	
E.G. IC (ft)	393.55	Weir Sta Lft (ft)	
E.G. OC (ft)	393.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.70	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.62	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	375.40	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.15
Q Barrel (cfs)	375.40	Culv Vel DS (ft/s)	10.22
E.G. US. (ft)	395.23	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.22	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.31	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	391.62	Culv Exit Loss (ft)	0.92
Delta EG (ft)	2.91	Culv Entr Loss (ft)	0.80
Delta WS (ft)	3.60	Q Weir (cfs)	244.33
E.G. IC (ft)	395.06	Weir Sta Lft (ft)	72.09
E.G. OC (ft)	395.23	Weir Sta Rgt (ft)	289.96
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.83	Weir Max Depth (ft)	0.85
Culv WS Outlet (ft)	391.62	Weir Avg Depth (ft)	0.55
Culv Nml Depth (ft)	5.15	Weir Flow Area (sq ft)	118.90
Culv Crt Depth (ft)	4.04	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	373.53	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.51
Q Barrel (cfs)	373.53	Culv Vel DS (ft/s)	9.53
E.G. US. (ft)	395.52	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.51	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.92	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	392.22	Culv Exit Loss (ft)	0.71
Delta EG (ft)	2.61	Culv Entr Loss (ft)	0.70
Delta WS (ft)	3.30	Q Weir (cfs)	453.67
E.G. IC (ft)	395.01	Weir Sta Lft (ft)	53.23
E.G. OC (ft)	395.53	Weir Sta Rgt (ft)	314.58
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.42	Weir Max Depth (ft)	1.15
Culv WS Outlet (ft)	392.22	Weir Avg Depth (ft)	0.73
Culv Nml Depth (ft)	5.09	Weir Flow Area (sq ft)	191.13
Culv Crt Depth (ft)	4.03	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	351.95	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.80
Q Barrel (cfs)	351.95	Culv Vel DS (ft/s)	8.80
E.G. US. (ft)	395.83	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.82	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.46	Culv Frctn Ls (ft)	1.14
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.63
Delta EG (ft)	2.36	Culv Entr Loss (ft)	0.60
Delta WS (ft)	2.93	Q Weir (cfs)	737.57
E.G. IC (ft)	394.50	Weir Sta Lft (ft)	33.47
E.G. OC (ft)	395.83	Weir Sta Rgt (ft)	325.66
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.45
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	0.94
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	274.90
Culv Crt Depth (ft)	3.85	Min El Weir Flow (ft)	394.39

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01
29.32	394.71	29.33	394.38	39.55	392.85	60.92	392.22	95.59	390.4
100.13	389.82	106.73	388.97	116.38	387.66	117.95	386.81	124.68	386.27
130.57	386.46	134.27	387.9	134.7	388	137.88	388.68	144.79	390.87
157.88	392.09	174.45	391.81	191.33	392.09	218.95	392.7	229.4	392.07
229.72	392.09	239.13	392.16	239.87	392.21	251.99	392.37	252.81	392.33
253.84	392.05	264.78	392.06	265.66	392.35	265.82	392.37	274.13	392.48
275.38	392.39	275.8	392.37	280.37	392.38	285.74	392.34	288.04	392.35

```
  289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
  294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
  302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
  336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
  353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
  363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        106.73  137.88             74.95   89.37  103.36             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8   391.2       F
   140.7  417.56   391.2       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9499

INPUT
Description:
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.42    1.16  397.39   10.04     396   12.41   395.1    15.2     394
   19.89   392.3   20.69     392   30.94  390.03   58.35  389.54   78.64   389.7
   91.71  389.72   91.72  389.72   95.66  389.73  106.35   385.4  108.48  385.35
  121.85  388.31  126.28  389.29   134.6  389.39  148.99  387.24  154.41  388.47
  172.52  389.82  180.01     390  192.12     392  192.21  392.01   204.6     394
  211.88  395.17  217.46     396  219.87  396.49  223.11  397.11  227.54     398
  230.91  398.56  233.71     399  240.41     400  246.88  400.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   95.66     .04  126.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         95.66  126.28             98.65   101.8  104.92             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9398

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   398.2    5.52  398.06    6.45     398   10.27  396.93   13.95     396
   17.15   395.1   21.18     394   22.21  393.72   23.21  393.45   25.97  392.71
   28.56     392   35.43  391.01   38.29   390.6   43.03     390   43.15  389.99
   46.04  389.74   46.81   389.7   47.09  389.68   47.37  389.65   55.11   389.4
   55.76  389.36   56.28  389.32   56.92  389.26   63.39  388.58   69.33  388.73
    71.4  388.44   71.45  389.03   80.15  389.63   92.99  388.55  114.44  388.98
  120.46  388.94  120.47  388.94  128.65  388.89  134.08  384.53  135.79  384.42
  141.88  384.75  145.59  388.85  150.79  388.83  167.65  388.75  186.81  388.92
  200.79  389.39   202.6     390  212.88  391.15  214.18     392  222.75   392.3
  224.12  392.62  227.87  392.98  232.15  393.19  232.46  393.21  235.68  393.41
  238.89  393.56  241.36  393.69  244.69  393.87  245.13  393.89  247.11     394
   255.3  394.93  262.09  395.66  265.18     396  268.55  396.34  272.92  396.76
  279.66  397.44  280.66  397.53  281.55  397.61  285.79     398   291.8  399.12
  296.37     400   301.1  400.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  128.65     .04  145.59    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        128.65  145.59             97.24   96.47   94.54             .1       .3

CROSS SECTION


RIVER: Plumtree
```

REACH: Plumtree RS: 9301

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400.19	3.07	400	4.08	399.94	4.2	399.94	13.57	399.39
15.2	399.29	20.44	399.07	21.01	399.05	21.75	399.02	22.33	399
33.53	398.93	34.16	398.91	34.62	398.89	50.07	398.18	51.97	398.04
52.52	398	56.81	396.58	58.64	396	59.61	395.91	64.07	395.25
72.56	394	73.12	393.94	74.3	393.83	84.4	392.97	90.89	392.65
97.02	392.35	101.28	392.17	101.59	392.16	101.86	392.14	101.98	392.14
104.04	392	106.2	392.22	109.76	392.28	110.09	392.26	110.2	392.25
111.04	392.21	113.1	392.09	140.12	387.83	145.5	387.55	154.95	387.07
157.77	384.36	160.52	383.31	166.94	384.65	171.14	388.29	175.86	388.27
175.87	388.27	183.69	388.23	215.21	388.62	222.39	389.2	234.24	392.69
252.67	392.11	269.21	391.61	287.95	393.96	291.68	394	304.65	395.18
314.29	395.71	317.24	395.93	317.28	395.93	318.14	396	320.84	396.21
321.8	396.3	324.25	396.51	326.08	396.68	329.75	397.01	336.95	397.7
338.16	397.81	340.03	398	341.44	398.43	347.8	400	351.27	400.78
352.31	401.05								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	154.95	.04	171.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
154.95	171.14	109.84	105	100.42	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
42.5	98.1	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9196

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.06	3.11	399.1	7.66	399.14	8.21	399.14	11.14	399.2
14.16	399.24	15.16	399.23	16.06	399.21	16.45	399.2	16.79	399.18
17.07	399.17	44.77	399	46.3	398.96	57.79	398.17	58.05	398.12
58.52	398.07	59.24	398.01	59.47	398	59.81	397.95	60.63	397.83
60.69	397.82	61.36	397.83	62.34	397.8	62.8	397.77	63.34	397.77
63.74	397.73	73.15	396.86	74.17	396.76	74.98	396.67	80.24	396
91.29	394.71	96.77	394	103.28	393.2	108.02	392.64	109.29	392.48
110.44	392.34	113.4	392	129.6	390	133.01	389.51	134.1	389.41
135.16	389.31	138.39	388.96	141.78	388.59	143.61	388.38	145.61	388.15
146.23	388.08	146.93	388.04	146.98	388	156.92	387	192.18	386.94
214.32	387.26	224.37	387.23	224.38	387.23	230.17	387.21	234.05	385.77
239.97	384.81	241.03	384.18	243	383.81	247.36	387.68	256.1	387.12
258.34	386.98	282.41	388.4	293.08	392.68	309.62	391.47	323.53	392.22
323.58	392.18	354.2	394	361.45	395.27	365.79	396	370.25	397.12
373.9	398	375.39	398.33	383.13	400	386.3	400.73	391.87	402
395.39	402.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	230.17	.04	247.36	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
230.17	247.36	197.07	208.89	195.59	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
11	50.8	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8987

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	402.15	2.15	402.17	3.39	402.13	6.04	402.17	12.51	402.07
13.01	402.08	14.07	402.07	15.03	402.07	16.62	402.1	16.88	402.09
17.7	402.05	18.67	402	24.82	401.62	50.49	400	71.91	398.02
72.1	398	72.14	397.99	82.9	396	83.83	395.8	92.09	394
100.48	392.04	100.64	392	100.82	391.96	101.02	391.92	110.17	390
121.03	388.29	142.19	386.02	152.75	385.4	161.75	385.92	161.76	385.92
161.94	385.93	170.22	385.8	172.51	383.34	178.25	382.77	183.07	383.36
185.81	386.43	193.25	386.15	202.96	385.78	222.78	385.7	249.39	385.47
263.78	390.18	301.3	390	301.69	390.04	302.4	390.1	313.7	391.1
324.37	392	326.83	392.6	329.22	393.19	332.48	394	335.16	394.95
338.19	396	340.18	396.58	342.55	397.27	344.45	397.82	345.03	398
346.35	398.38	351.77	400	352.66	400.28	356.31	401.47	357.07	401.72
357.94	402	358.9	402.3	364.45	404	365.62	404.4	369.07	405.49

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	170.22	.04	185.81	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
170.22	185.81	233.38	233.77	226.61	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8753

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.84	3.57	392.36	4.48	392.24	6.24	392	14.25	391.04
22.57	390	39.19	388.36	42.66	388	43.14	387.95	44.71	387.76
45.13	387.7	53.93	387	55.07	386.91	55.91	386.89	59.98	386.86
67.22	387.07	71.26	386.74	71.58	386.73	74.94	386.49	75.24	386.48
79.99	386.13	80.09	386.12	81.64	386	140.52	386.79	179.2	384.55
199.15	384.94	212.08	384.65	214.59	384.6	226.78	384.34	229.61	382.96
231.97	382.55	232.78	382.41	236.12	381.99	237.03	382.27	237.82	384.79
243.64	385.02	243.65	385.02	246.4	385.13	254.4	387.48	262.5	388.23
269.36	387.48	284.51	387.86	284.57	388.25	284.6	388.25	284.74	388.27
302.51	390	304.49	390.31	314.62	392	318.02	392.86	322.27	394
323.63	394.41	327.41	395.54	328.32	395.82	328.9	396	329.96	396.36
334.49	398	337.27	399.01	339.54	400	340.77	400.45	344.57	402
346.47	402.7	350	404	351.3	404.47	352.94	405.01	353.27	405.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	226.78	.04	237.82	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
226.78	237.82	178.41	174.76	168.62	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8579

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400.17	3.31	400	17.74	399.07	34.62	398	35.22	397.93
46.41	397.26	51.75	396.96	59.26	396.5	60.57	396.41	63.23	396.27
68.83	396	75.46	394.89	76.44	394.72	79.84	394.17	80.17	394.11
80.95	394	93.93	392.04	94.14	392	94.63	391.88	95.67	391.71
95.96	391.67	96.13	391.66	102.2	391.37	103.3	391.28	107.14	391.06
111.25	390.74	112.8	390.64	116.2	390.33	116.74	390.29	119.66	390
124.86	389.68	126.23	389.59	129.14	389.43	130.57	389.33	132.66	389.17
135.1	389.03	138	388.83	141.06	388.61	147.32	388.13	148.92	388
153.19	387.46	172.43	385.68	186.19	383.82	200.87	383.46	218.33	383.53
227.14	382.25	231.16	382.93	233.37	383.31	235.71	383.61	242.87	381.38
248.28	381.13	250.03	381.37	251.19	383.67	263.28	383.69	264.68	383.7
279.14	384.5	298.66	387.04	300.8	387	315.88	390	320.59	391.65
321.5	392	322.64	392.54	325.53	394	328.7	395.54	329.55	396
332.04	397.23	333.33	398	334.37	398.44	338.88	400	339.68	400.16
340.45	400.35	347.58	402	352.32	402.8				

Manning's n Values num= 3

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     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  235.71     .04  251.19    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.71  251.19           198.29  204.23  206.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8374

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  401.05     .39  401.02   14.71     400   17.51  399.78   17.87  399.76
   18.37  399.72   19.63  399.64   20.25   399.6      22  399.47   31.49  398.77
   42.12     398   43.17  397.92   43.74  397.88   48.54  397.52   49.54  397.46
   51.19  397.35   54.98  397.06   67.52   396.4   67.98  396.37    72.6  396.03
      73     396   77.65  395.72   79.49   395.6   80.67  395.52   82.29  395.41
   83.66  395.31   85.08   395.2  104.07     394  108.69  393.72  110.21  393.61
  111.59  393.51  116.39  393.15  122.53  392.72  129.15  392.19  131.43     392
  140.54  390.76  146.03     390  147.63  389.84  149.67  389.65   158.7  388.75
  166.96     388  174.92  387.31  176.26  387.21  182.29     386  189.22  384.97
  217.89   382.7  254.28  382.69  262.97  382.52  262.98  382.52   272.5  382.34
  274.84   380.5  276.51  380.31  286.75  380.32  292.45  384.62  293.85  384.83
  305.64   386.6  321.38     388  325.59  388.89  331.68     390  334.17  390.71
  336.02   391.3   338.3     392  343.97  393.91  344.22     394  345.13  394.36
  349.46     396  350.95   396.6  354.45     398  356.99  399.37  358.18     400
  359.59  400.71  360.34  401.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   272.5     .04  292.45    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         272.5  292.45            144.9  145.45  146.03             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8229

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  394.36    5.81  394.06    6.29     394    7.37  393.95   45.41     392
   69.28  390.22   72.15     390   72.18     390   72.26  389.98   72.54  389.95
      73  389.89   74.69  389.72   75.45  389.65   75.92  389.61   75.99   389.6
   79.77  389.37    82.3  389.25  100.97  388.39  107.53     388  110.36   387.9
  110.76   387.9  112.75  387.84  132.43     386  139.68   385.1  170.44  382.68
  187.75  382.12  197.62  382.13  197.63  382.13  207.39  382.14  209.28   380.1
  212.63  379.79  215.85  380.15  217.64  381.75  227.71  382.65  227.84  382.66
  243.37  383.19  265.96  384.67     268  384.46  288.88     388  293.09  388.12
  308.33  389.98  308.55  389.98  309.46  389.99  310.08     390  315.47   391.1
  319.76  391.98   319.9     392  320.02  392.04  321.07  392.37     326   393.9
  326.33     394   328.6  394.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  207.39     .04  217.64    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        207.39  217.64           135.27  135.16  134.66             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8094

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  394.62    2.48   394.2    3.72     394     3.8  393.98     4.1  393.92
```

```
    4.62  393.84    5.04  393.78    5.44  393.73     5.7   393.7   24.53  392.35
   27.13   392.1   27.41  392.08   28.22     392   37.38  391.13   48.65     390
   55.52  389.55   79.43  388.11   79.45  388.11    79.5   388.1   79.73  388.02
   79.79     388   96.53  386.44   99.06   386.2  101.25     386  106.88  385.44
  109.08  385.26  113.06  384.89   116.1  384.62  119.34   384.4  120.88  384.28
  121.97  384.22  122.35  384.19  122.91  384.14  134.05   383.5  144.72   382.7
  163.81  381.63  182.02  380.88  183.82  381.01  183.84  381.01  194.28  381.76
  195.27  379.09  198.85  378.24  204.43  378.53  207.68  381.82  215.37  381.59
  219.87  381.46  228.39  381.39  231.06  382.03  246.18   381.9  274.41  383.36
  311.66  389.55  311.72  389.81  311.73  389.81  329.62     392  337.85  393.59
  339.81     394  342.65  394.79  346.84     396  349.21  396.76  352.92     398
  358.41  399.96  358.53     400  358.64  400.03  368.44     402  368.97  402.04
  369.04  402.04  369.13  402.05  375.87  402.56  376.87  402.63  378.22  402.73
  382.48  403.06  386.91  403.38  388.95  403.53  390.87  403.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  194.28     .04  207.68    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        194.28  207.68           138.21  139.81  140.01             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7954

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  390.87    1.06  390.76    5.56  390.36    8.09  390.17     9.7  390.06
   12.95  389.88   15.86  389.75   20.41  389.55   21.37  389.49   22.17  389.45
   26.06  389.27    27.8  389.18   29.65   389.1   31.21  389.02   32.58  388.93
   33.19  388.89   40.18  388.65   41.65  388.54   44.29  388.45   47.14  388.32
   47.67  388.28   49.22   388.2   50.93  388.11   52.62     388   54.06  387.89
   58.14  387.52   60.02  387.34   70.48  386.32   73.92     386   75.83  385.87
   81.99  385.49   86.05  385.25   88.16  385.06   94.21  384.69   95.33  384.57
   98.59  384.23   99.42  384.17  100.92     384  114.44  382.88  125.39     382
  130.61  381.95  156.45  380.05  188.73  379.73  199.32  380.23  210.56  380.77
     212   378.9  214.38  377.79  218.13  379.54  221.11  380.65  229.58  380.68
  231.23  380.69  249.42  380.31   281.8  380.49   295.4     380  299.39  381.16
  302.17     382  305.31  382.93  310.71  384.55  316.22     386  323.56  387.01
  330.85     388  342.34   389.5  345.84     390  347.98   390.9  350.48     392
  352.14  392.75  355.01     394  357.39  394.99  359.91     396  362.57  396.94
  365.15  397.64  366.49     398  375.99  398.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  210.56     .04  221.11    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        210.56  221.11           155.28  153.64  152.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7800

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  389.23     6.4  388.77   18.95     388   32.05  387.12   34.38  386.96
   40.95  386.52   41.74  386.47   42.88  386.38   48.62     386   49.93  385.92
   50.74  385.86   62.21   385.1   65.97  384.84    73.9  384.32   75.81   384.2
   77.92  384.08   78.06  384.07   79.37     384   79.61  383.95   79.79  383.92
    79.9  383.91    81.2  383.76   81.59  383.72   81.85  383.71   82.72  383.74
   88.11  383.68   89.08  383.64   89.68  383.58   90.64  383.53   91.54  383.48
   92.48  383.38   93.55  383.29   96.76     383   98.06  382.88   99.04  382.78
  102.88  382.37  106.07     382  129.44  380.05  152.75  378.79  172.94  379.22
  186.27  379.75  187.83  378.84  191.51  378.79  198.74  378.73     200  379.32
  200.83   379.7  211.69     379  223.63  379.27  230.99   379.1  240.48  378.88
  259.49  379.02  278.05  378.97  305.83  379.75  307.52     380  314.08   381.6
  315.71     382  316.56  382.21  318.83  382.81  323.87     384  331.19  385.58
  333.53     386   340.6  386.91  350.42     388  352.19  388.23  353.07  388.36
  356.29  388.87  360.39  389.49  361.84  389.72  363.36     390  364.77  390.43
```

```
  366.25  390.85  370.11     392  372.25  392.58

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.27     .04  200.83    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.27  200.83           252.37  252.82  252.55             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7548

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.07     .78     384    5.11  383.66    7.63   383.5   11.97  383.17
   14.64  382.99   17.76  382.76   24.91  382.21   27.52     382   28.85  381.83
   29.51  381.79   32.65  381.46   35.07  381.21   46.63     380   59.52  379.12
   61.36     379   65.17  378.74   75.34  378.13   77.34  378.05   77.62     378
   83.55  378.07   85.43  378.08   88.35  378.07   95.64  378.09  101.54  378.13
  108.95  378.07  110.55  378.08  119.01  378.06  138.28  378.06  168.39  378.45
  198.66  378.25  217.53  377.85  219.53  377.83  219.55  377.83  230.43  377.75
  232.68  376.67  235.51  375.57  238.58  376.37  240.21  377.92  249.56   377.9
  258.68  377.89  288.89  377.64  323.87  376.92   330.2  377.07  336.47     378
  340.56  378.61  343.65  379.04  345.35  379.25  349.52  379.62  352.72  379.89
  353.04  379.92  353.25     380  353.89  380.15   356.3  380.75  360.75     382
  369.15     384  377.97  385.33  382.29     386  383.74  386.27  393.23     388
  398.11     389  402.86     390  406.24  390.27  406.63  390.26  409.53     390
  411.75  389.85   413.2  389.77   418.1  389.46  420.07  389.37  423.04  389.17
  425.75  388.96   431.8   389.4  440.42     390   442.9  390.41  445.97  390.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  230.43     .04  240.21    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        230.43  240.21           174.12  180.41  186.79             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7367

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.88   17.18  384.04   17.79     384   19.31  383.69   27.57     382
   33.56  381.11   40.22     380   72.92     378   75.63  377.86   83.54  377.49
   84.36  377.49    86.2  377.54   86.99  377.54   87.28  377.52   88.37  377.57
   88.81  377.59    98.7  377.77   99.18  377.78   99.84  377.77   153.1  379.18
  184.66  379.38  209.09  379.76  209.11  379.76  216.46  379.87  218.28  379.16
  220.46  378.71  224.14   378.3  227.18   379.5  239.26  379.44  239.27  379.44
  256.12  379.35  283.76  378.85  301.95     376  306.84  375.99  309.51  375.94
  311.37  375.92  312.47  375.93  313.98  375.94  315.54     376  317.31  376.05
  328.94  376.26  339.82  376.48  386.56  377.48  387.24  377.47  389.22  377.48
  389.83  377.49  393.84  377.67  396.67  377.79     398  377.85   399.4  377.89
  400.73  377.95  403.02     378  405.65   378.1  407.78  378.19  409.29  378.26
  410.92  378.34  413.44  378.46  417.48  378.69  420.02  378.83  428.31  379.29
   429.6  379.36  436.31  379.72  436.88  379.75  441.68     380  449.79  380.68
  452.35   380.9  458.41  381.46  460.97  381.69  464.19     382  470.57  382.96
  477.61     384  480.68  384.57  488.87     386  495.27  386.99  498.55  387.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  216.46     .04  227.18    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        216.46  227.18           143.37  150.84   157.8             .1       .3

CROSS SECTION


RIVER: Plumtree
```

REACH: Plumtree RS: 7216

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.75	1.08	385.65	5.95	385.32	10.54	384.89	18.99	384.19
19.48	384.13	19.51	384.13	19.72	384.03	19.77	384.03	19.83	384
21.34	383.6	24.22	382.82	25.18	382.55	27.46	382	33.57	381.07
41.34	379.98	60.13	379	65.81	378.72	75.73	378.27	77.55	378.18
79.67	378.07	80.08	378.07	80.17	378.06	81.18	378	81.5	377.95
81.94	377.89	82.7	377.88	134.09	376.01	134.34	376	135.9	375.99
142.56	375.98	148.85	376	148.97	376	159.54	375.75	186.07	376.5
205.76	375.8	205.79	375.8	221.2	375.26	236.22	376.17	236.23	376.17
243.36	376.61	267.12	376.15	298.57	377.1	324.96	378	344.89	379.72
346.99	379.9	348.24	380	355.59	380.52	358.24	380.72	369.12	381.55
372.54	381.8	375.03	382	377.33	382.49	384.79	384	385.68	384.2
393.83	386	394.81	386.17	399.71	387.05	405.49	388	406.42	388.18
407.5	388.41	413.63	389.1	417.54	389.6	418.61	389.74	420.77	390
421.3	390.07	421.95	390.14	429.79	391.08	433.06	391.43	434.12	391.56
434.45	391.61	438.52	392	445.08	392.32	449.48	392.54	451.09	392.66

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.07	.04	243.36	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
186.07 243.36 190.28 186.42 181.46 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
377.1	439.5	390	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7030

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.29	2.41	387	10.05	386	29.45	384.45	32.78	384.15
33.33	384	36.52	383.46	40.31	382.87	43.31	382.38	46.06	382
46.12	381.98	48.59	381.84	49.64	381.82	49.97	381.8	50.4	381.79
50.62	381.77	71.01	380.53	81.91	380	92.52	379.05	103.93	378
123.79	376.72	134.74	376.11	135.07	376.05	135.57	376	135.6	375.99
137.36	375.81	139.35	375.62	140.29	375.67	145.45	375.59	151.15	375.29
153.13	375.29	164.88	375.94	165.28	375.96	165.81	376	175.82	375.48
205.64	375.09	233.21	375.65	248.05	375.46	259.75	375.31	261.56	373.84
262.29	373.43	263.48	373.62	268.09	375.54	278.5	375.62	279.83	375.63
309.7	376.93	312.89	376.93	319.01	378	322.75	379.67	328.88	379.92
332.16	380	333.98	380.26	345.53	382	358.26	384	368.51	385.52
371.9	386	379.53	387.21	385.4	388	395.57	389.56	398	389.92
398.64	390	402.14	390.27	406.61	390.59	410.26	390.83	412.74	390.96
415.65	391.11	416.49	391.16	419.22	391.29	423.04	391.64	423.34	391.66
427.09	392	428.37	392.13	432.56	392.47	446.6	393.09		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	259.75	.04	268.09	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
259.75 268.09 140.13 137.19 133.92 .1 .3
Blocked Obstructions num= 1

Sta L	Sta R	Elev
372.8	404.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6893

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.2	2.38	382.99	8.39	382.4	12.65	382	20.07	381.43

```
   21.04  381.32   23.89  381.07   32.28     380   33.24  379.94   36.89  379.63
   54.28  378.25   56.67     378   75.57  376.96   78.59   376.8   93.69     376
   94.91  375.96   96.44  375.86  117.75  374.81  136.62     374  152.27   373.6
  154.13  372.23  157.36   371.8  159.62  372.29  160.73  373.73  187.35  373.86
  202.43  373.44   213.2  373.14  214.26  371.39  217.55  370.68  220.85  371.53
   222.2  372.36  232.55  373.36  240.97  374.18  259.97  375.25   279.8  378.38
  290.19     380  292.23   380.3  302.91     382     311  382.83  315.48  383.17
  321.02  383.61  322.67  383.75  325.93     384  327.14  384.17  327.77  384.24
  330.51   384.6  331.06  384.66  331.73  384.74   332.6  384.85  333.79  385.01
  335.83   385.3  339.56  385.84  340.65     386  353.87  389.13  355.81   389.6
  357.43     390  357.61  390.01  361.03  390.33  362.39  390.43  362.61  390.44
  365.01  390.49  366.06  390.54  368.05  390.54  368.79  390.56  380.19  390.59
  388.25  390.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   213.2     .04  232.55    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         213.2  232.55           124.46  126.53  128.02             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   333.6   364.1     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6766

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.56    7.75  380.34    9.62  380.18   11.59   380.1   27.69   379.6
   34.11  379.36   42.51  378.88   44.96  378.81   50.68   378.9   55.82  378.75
   59.91  378.59   69.06  378.34   72.96   378.1   76.53  377.98   77.17  377.98
   78.44  377.94   85.15  377.54  110.99  376.09  111.42     376  115.69  375.87
  158.02  374.36  160.91     374  186.61  372.66  212.26  373.01  237.02   373.1
  242.58  372.73  249.33  372.28  253.11  370.17   254.8  369.76  259.27  370.49
  262.36  373.11  274.27  374.24  274.29  374.25  278.85  374.68  293.57  375.12
  310.54  376.12  337.65     378   341.5  378.38  344.84  378.75  345.88  378.88
  348.32  378.95   351.5  379.16  353.85  379.26   354.2  379.31  358.69  379.46
  365.18  379.62  366.28  379.73  367.47     380  369.55   380.4  370.86  380.58
  373.19  381.02  375.37  381.31  379.99     382  390.01     384   392.8  384.16
   404.5  384.66  418.06  384.49  421.86   384.5  423.36  384.56  430.23  384.62
  434.86  384.68  447.58  385.29  449.06   385.3  453.71  385.19  463.39  384.68
  463.96  384.68  468.82  384.87  472.42  384.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  237.02     .04  262.36    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        237.02  262.36           103.31  103.53  104.46             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   367.4   402.8     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6663

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  387.81    5.71  387.58   42.61  386.42   45.32  386.36   48.81  386.32
   50.39  386.29   52.99  386.11   54.86     386   63.52     384    72.4     382
   77.53  381.09   78.45  381.02   81.39  381.16   82.73  381.16   83.84  381.06
   85.14  381.03   90.04   380.7   91.84  380.48   94.76     380  107.44  379.41
  109.18  379.29  112.44  379.13  115.99  378.92  130.42     378  130.89  377.95
  160.38  376.65  180.56  376.17  184.97  375.98  189.81  375.85  195.23  375.67
  199.49  375.58  206.72  375.37  221.58  374.58  234.91     374  259.85  373.17
  294.97  372.71  311.02  372.56  311.04  372.56  319.15  372.49  321.59  371.64
  322.41  371.16  323.12   369.4  326.04  369.26  336.33  370.36  339.84  373.35
  341.19  373.46  341.21  373.46  355.51  374.57  385.65  374.57  391.75     376
```

435.14	377.35	436.73	377.48	438.03	377.5	441.59	377.71	445.02	378
461.23	380	462.22	380.21	465.24	380.76	470.16	381.69	472.06	382
479.53	383.54	481.93	384	486.28	384.27	488.32	384.35	505.54	384.31
515.18	384.49	518.45	384.46	533.6	385.11	535.47	385.12	546.46	384.34
548.83	384.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	319.15	.04	339.84	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
319.15	339.84	90.58	94.53	97.72	.1 .3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
49.7	87.5	390	451.6	492.3	390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6568

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.88	11.84	387.56	41.49	386.42	44.7	386.32	47.75	386.21
48.2	386.2	51.49	386.19	52.85	386.15	53.93	386.14	56.03	386.06
57.13	386	62.1	385.38	72.23	384.41	73.61	384.08	74	384
78.37	383.37	81.15	382.86	83.41	382.52	85.95	382	87.39	381.89
89.26	381.77	106.91	380.23	109.52	380.12	112.81	380	123.86	379.46
127.28	379.12	128.69	379.02	131.4	378.74	133.26	378.6	138.52	378
144.95	377.67	154.93	377.2	167.84	376.57	179.91	376	190.81	375.63
206.03	375.07	215.11	374.75	231.43	374.02	231.55	374	251.99	373.42
286.56	372.07	303.48	372	303.5	372	307.17	371.99	309.55	369.54
314.39	368.65	318.89	369.1	320.63	372.7	333.89	373.01	335.3	373.05
354.94	374.07	388	376.19	406.97	378	432.51	380	436.02	380.51
440.79	381.03	449.38	382	453.12	382.55	464.72	383.92	465.61	384
472.99	385.68	474.22	386	482.07	387.25	486.94	388	503.32	390
506.03	390.12	516.08	390.61	558.49	391.41	562.74	391.48	574.89	391.54

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	307.17	.04	320.63	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
307.17	320.63	112.95	114.27	115.74	.1 .3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
56.9	70	395	480	528.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6454

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.74	7.58	382.41	11.61	382.36	18.35	382.85	20.37	382.77
21.37	382.79	29.92	382.63	32.76	382.6	39.52	382.39	47.69	382
53.79	381.37	55.59	381.15	62.67	380	71.51	378.91	77.75	378
80.09	377.84	81.89	377.87	84.21	378	85.66	378.04	91.88	378.33
93.96	378.47	103.28	378.95	112.28	379.59	117.21	379.85	119.53	380
122.79	380.14	126.31	380.18	133.22	380	134.81	379.84	137.81	379.45
141.48	378.79	145.53	378	155.89	376	166.96	373.47	173.88	373.47
191.09	372.71	200.3	371.97	201.3	371.89	212.37	370.12	213.27	368.43
215.67	368.3	218.52	368.67	224.12	371.79	230.68	372.35	245.49	373.6
269.36	373.99	286.75	373.99	309.85	374	325.09	374.82	342.86	375.85
347.28	376.79	353.2	378	358.5	378.88	365.42	379.84	366.88	380
374.5	381.38	377.36	382	383.44	382.65	394.15	384	397.08	384.34
402.2	384.86	404.24	385.01	407.53	385.3	408.74	385.37	414.73	385.6
419.68	385.94	428.4	386.28	432.3	386.26	436.12	386.41	452.71	387.66
457.68	388	470.4	388.25						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .075   201.3     .04  224.12    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         201.3  224.12           102.69  103.78  104.74             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   120.4   125.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree          RS: 6350

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.25    2.84  383.98    4.85  383.88   29.21  382.05   29.42     382
   31.52  381.83   32.17   381.8   32.46  381.78   34.04  381.73   35.06  381.64
   53.47   380.4   61.23     380   61.52  379.95    62.6  379.83   66.18  379.72
   67.82  379.63   68.74  379.59  124.99     378  139.11  377.29  159.11  376.32
  161.58  376.22  169.81     376  175.65  375.83  176.25  375.83     201  374.61
  220.13  373.39  226.47  371.43  230.05  370.32  235.85   369.8  238.08  367.36
  241.57  366.97   246.9  368.37  249.25  372.63  256.57  374.75  266.03   377.5
  266.59     378  329.45     378  332.13  377.82  334.24  377.69  335.82  377.59
  339.75  377.35  347.23  377.86  349.56     378  359.53  377.16  360.29  377.08
  378.66     378  382.15  378.35  383.71  378.55  386.87  378.91  388.05  379.05
   394.9     380  395.88  380.18   400.2  380.85  405.44  381.69  407.44     382
  409.21  382.33  411.05   382.5  417.68  383.44  420.21  383.65  423.51  383.96
     426  384.23  427.13   384.2  428.56   384.3  433.67  384.73  437.93  385.11
  441.27  385.38  449.14  386.13  468.97     388

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  220.13     .04  249.25    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        220.13  249.25           52.33   53.78   55.24             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   264.6   271.9     390       F
   325.6   345.5     390       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   271.9   325.6     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree          RS: 6296

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  386.85    5.73  386.49   14.33     386   18.53  385.51   23.71  384.86
   25.79  384.56   29.31     384   30.39   383.8   37.57  382.43   39.51  382.02
   41.76  381.69   54.85     380   70.55   379.5   94.75  378.51   95.08  378.49
   95.41  378.49   98.12  378.36   99.34  378.31  103.26   378.2  106.66  378.14
  108.29  378.08  109.53  378.06  141.16  376.68  172.07   375.5  191.67  374.94
  202.55  371.87  209.11  370.03  214.77  369.87  215.93  367.68  217.55  367.41
  219.25  367.49  221.17     369   223.1  368.24  224.71   368.4  227.95  371.85
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.77  227.95           98.47   99.02   99.58             .3       .5
```

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	183.5	377.1	F
269.7	479.75	377.1	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
378.4	432.4	395

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 6250

INPUT
Description: Hearthstone Road
Distance from Upstream XS = 41
Deck/Roadway Width = 30
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
109.53	378.06		126.2	378.165		148.4	377.583	
171.8	377.249		194.8	377.026		219.5	377.097	
242.2	377.664		267.9	378.981		291.3	380.656	
311.7	383.135		336.6	385.512		479.75	398	

Upstream Bridge Cross Section Data
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.85	5.73	386.49	14.33	386	18.53	385.51	23.71	384.86
25.79	384.56	29.31	384	30.39	383.8	37.57	382.43	39.51	382.02
41.76	381.69	54.85	380	70.55	379.5	94.75	378.51	95.08	378.49
95.41	378.49	98.12	378.36	99.34	378.31	103.26	378.2	106.66	378.14
108.29	378.08	109.53	378.06	141.16	376.68	172.07	375.5	191.67	374.94
202.55	371.87	209.11	370.03	214.77	369.87	215.93	367.68	217.55	367.41
219.25	367.49	221.17	369	223.1	368.24	224.71	368.4	227.95	371.85
232.63	373.42	243.36	377.02	259.81	378.9	289.8	379.01	303.36	379.05
308.59	379.33	337.18	380	341.87	380.42	350.42	381.43	353.73	381.8
355.27	382	358.1	382.65	364.11	384	366.25	384.53	371.48	385.78
372.48	386	389.73	388	393.2	388.71	393.82	388.77	394.89	388.96
396.31	389.18	398.15	389.31	401.07	389.7	406.01	389.86	406.78	389.82
409.23	389.97	409.46	390	423.29	390.45	424.72	390.55	426.95	390.71
438.44	391.5	444.21	391.79	445.96	392	456.32	394	459.74	394.71
466.2	396	479.75	398						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	214.77	.04	227.95	.075

Bank Sta: Left Right Coeff Contr. Expan.
214.77 227.95 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	183.5	377.1	F
269.7	479.75	377.1	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
378.4	432.4	395

Downstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
93.6	378		109	378.165		131.9	377.583	
155.7	377.249		179.1	377.026		204.2	377.097	
227.3	377.664		253.6	378.981		277.3	380.656	
306.1	383.135		331.6	385.512		338.94	386	

Downstream Bridge Cross Section Data
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39
225.24	370.02	227.55	372.22	227.56	372.23	229.54	374.1	255.33	377.5

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  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        197.54  225.24             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5  377.03       F
   229.3  443.14  377.03       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              24.8   62.23     .013     .013        0                  .5               1
Upstream   Elevation =  367.33
           Centerline Station =  217
Downstream Elevation =  367.76
           Centerline Station =  210

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              24.8   62.41     .013     .013        0                  .5               1
Upstream   Elevation =  367.28
           Centerline Station =  223
Downstream Elevation =  366.19
           Centerline Station =  215

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         67.59    Culv Full Len (ft)
  # Barrels                     1    Culv Vel US (ft/s)          5.63
  Q Barrel (cfs)             67.59    Culv Vel DS (ft/s)          7.74
  E.G. US. (ft)             371.70    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             371.53    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              370.43    Culv Frctn Ls (ft)          0.17
  W.S. DS (ft)              370.38    Culv Exit Loss (ft)         0.89
  Delta EG (ft)               1.28    Culv Entr Loss (ft)         0.25
  Delta WS (ft)               1.14    Q Weir (cfs)
  E.G. IC (ft)              371.17    Weir Sta Lft (ft)
  E.G. OC (ft)              371.71    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        370.97    Weir Max Depth (ft)
  Culv WS Outlet (ft)       370.38    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.48    Min El Weir Flow (ft)     377.04


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1
```

Q Culv Group (cfs)	113.84	Culv Full Len (ft)	38.70
# Barrels	1	Culv Vel US (ft/s)	9.06
Q Barrel (cfs)	113.84	Culv Vel DS (ft/s)	9.76
E.G. US. (ft)	373.75	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	373.65	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	371.32	Culv Frctn Ls (ft)	0.24
W.S. DS (ft)	371.26	Culv Exit Loss (ft)	1.42
Delta EG (ft)	2.43	Culv Entr Loss (ft)	0.64
Delta WS (ft)	2.39	Q Weir (cfs)	
E.G. IC (ft)	373.29	Weir Sta Lft (ft)	
E.G. OC (ft)	373.75	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	
Culv WS Outlet (ft)	371.26	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.22	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	167.60	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	13.34
Q Barrel (cfs)	167.60	Culv Vel DS (ft/s)	13.34
E.G. US. (ft)	378.23	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	378.16	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	373.42	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	373.23	Culv Exit Loss (ft)	2.57
Delta EG (ft)	4.81	Culv Entr Loss (ft)	1.38
Delta WS (ft)	4.92	Q Weir (cfs)	274.73
E.G. IC (ft)	377.10	Weir Sta Lft (ft)	101.01
E.G. OC (ft)	378.23	Weir Sta Rgt (ft)	253.89
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	1.24
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	0.73
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	110.96
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	155.59	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.38
Q Barrel (cfs)	155.59	Culv Vel DS (ft/s)	12.38
E.G. US. (ft)	379.13	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	378.95	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	375.23	Culv Frctn Ls (ft)	0.73
W.S. DS (ft)	374.82	Culv Exit Loss (ft)	1.97
Delta EG (ft)	3.90	Culv Entr Loss (ft)	1.19
Delta WS (ft)	4.13	Q Weir (cfs)	840.64
E.G. IC (ft)	376.13	Weir Sta Lft (ft)	79.69
E.G. OC (ft)	379.13	Weir Sta Rgt (ft)	269.93
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.10
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.35
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	257.40
Culv Crt Depth (ft)	3.64	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	149.82	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.92
Q Barrel (cfs)	149.82	Culv Vel DS (ft/s)	11.92
E.G. US. (ft)	379.53	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.28	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.12	Culv Frctn Ls (ft)	0.68
W.S. DS (ft)	375.54	Culv Exit Loss (ft)	1.63
Delta EG (ft)	3.42	Culv Entr Loss (ft)	1.10
Delta WS (ft)	3.74	Q Weir (cfs)	1217.18
E.G. IC (ft)	375.68	Weir Sta Lft (ft)	69.26
E.G. OC (ft)	379.53	Weir Sta Rgt (ft)	275.72
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.51
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.64
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	339.60
Culv Crt Depth (ft)	3.59	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	143.52	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.42
Q Barrel (cfs)	143.52	Culv Vel DS (ft/s)	11.42
E.G. US. (ft)	379.92	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.57	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	377.02	Culv Frctn Ls (ft)	0.62
W.S. DS (ft)	376.24	Culv Exit Loss (ft)	1.25
Delta EG (ft)	2.90	Culv Entr Loss (ft)	1.01
Delta WS (ft)	3.33	Q Weir (cfs)	1655.46
E.G. IC (ft)	375.21	Weir Sta Lft (ft)	56.47
E.G. OC (ft)	379.91	Weir Sta Rgt (ft)	281.41
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.92
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.90
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	427.46
Culv Crt Depth (ft)	3.54	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	83.41	Culv Full Len (ft)	13.70
# Barrels	1	Culv Vel US (ft/s)	8.99
Q Barrel (cfs)	83.41	Culv Vel DS (ft/s)	6.64
E.G. US. (ft)	371.70	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	371.53	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	370.43	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	370.38	Culv Exit Loss (ft)	0.64
Delta EG (ft)	1.28	Culv Entr Loss (ft)	0.40
Delta WS (ft)	1.14	Q Weir (cfs)	
E.G. IC (ft)	371.70	Weir Sta Lft (ft)	
E.G. OC (ft)	371.93	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	370.05	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.86	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.77	Min El Weir Flow (ft)	377.04

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	118.16	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	9.40
Q Barrel (cfs)	118.16	Culv Vel DS (ft/s)	9.40
E.G. US. (ft)	373.75	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	373.65	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	371.32	Culv Frctn Ls (ft)	0.42
W.S. DS (ft)	371.26	Culv Exit Loss (ft)	1.31
Delta EG (ft)	2.43	Culv Entr Loss (ft)	0.69
Delta WS (ft)	2.39	Q Weir (cfs)	
E.G. IC (ft)	373.44	Weir Sta Lft (ft)	
E.G. OC (ft)	373.74	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.28	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	167.66	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	13.34
Q Barrel (cfs)	167.66	Culv Vel DS (ft/s)	13.34
E.G. US. (ft)	378.23	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.16	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	373.42	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	373.23	Culv Exit Loss (ft)	2.57
Delta EG (ft)	4.81	Culv Entr Loss (ft)	1.38
Delta WS (ft)	4.92	Q Weir (cfs)	274.73
E.G. IC (ft)	377.01	Weir Sta Lft (ft)	101.01
E.G. OC (ft)	378.23	Weir Sta Rgt (ft)	253.89
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	1.24
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	0.73
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	110.96
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	155.76	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.40
Q Barrel (cfs)	155.76	Culv Vel DS (ft/s)	12.40
E.G. US. (ft)	379.13	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.95	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	375.23	Culv Frctn Ls (ft)	0.73
W.S. DS (ft)	374.82	Culv Exit Loss (ft)	1.98
Delta EG (ft)	3.90	Culv Entr Loss (ft)	1.19
Delta WS (ft)	4.13	Q Weir (cfs)	840.64
E.G. IC (ft)	376.04	Weir Sta Lft (ft)	79.69
E.G. OC (ft)	379.14	Weir Sta Rgt (ft)	269.93
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.10
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.35
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	257.40
Culv Crt Depth (ft)	3.64	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	150.00	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.94
Q Barrel (cfs)	150.00	Culv Vel DS (ft/s)	11.94
E.G. US. (ft)	379.53	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.28	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.12	Culv Frctn Ls (ft)	0.68
W.S. DS (ft)	375.54	Culv Exit Loss (ft)	1.64
Delta EG (ft)	3.42	Culv Entr Loss (ft)	1.11
Delta WS (ft)	3.74	Q Weir (cfs)	1217.18
E.G. IC (ft)	375.60	Weir Sta Lft (ft)	69.26
E.G. OC (ft)	379.54	Weir Sta Rgt (ft)	275.72
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.51
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.64
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	339.60
Culv Crt Depth (ft)	3.60	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	144.03	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.46
Q Barrel (cfs)	144.03	Culv Vel DS (ft/s)	11.46
E.G. US. (ft)	379.92	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.57	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	377.02	Culv Frctn Ls (ft)	0.63
W.S. DS (ft)	376.24	Culv Exit Loss (ft)	1.27
Delta EG (ft)	2.90	Culv Entr Loss (ft)	1.02
Delta WS (ft)	3.33	Q Weir (cfs)	1655.46
E.G. IC (ft)	375.15	Weir Sta Lft (ft)	56.47
E.G. OC (ft)	379.93	Weir Sta Rgt (ft)	281.41
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.92
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.90
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	427.46
Culv Crt Depth (ft)	3.55	Min El Weir Flow (ft)	377.04

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6197

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39

```
  225.24  370.02  227.55  372.22  227.56  372.23  229.54   374.1  255.33   377.5
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        197.54  225.24           75.78   74.81   73.83             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5  377.03       F
   229.3  443.14  377.03       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6122

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.69    8.11  379.53    9.53  379.45   17.27  379.23   20.32  379.02
   22.13  378.95    24.3  378.81   31.57  378.41   34.72  378.26   38.27  378.14
   47.27  377.96    49.2  377.94   52.81  377.79   56.11  377.88   60.11  377.91
   62.59  377.87   64.37  377.81   65.09  377.76   66.54   377.7   67.14  377.65
   68.62  377.58   71.62  377.27   75.62  376.99    79.3  376.57    81.7  376.35
   84.46     376  105.56  374.69  108.26  374.67  121.47  375.38  123.91   375.3
  125.19  375.41  127.48  375.55  129.74  375.66  131.98  375.57  134.89  375.74
  137.16  375.81  137.87  375.78  140.09  375.81  142.39  375.77  145.17  375.64
     148  375.41   151.1  375.05  154.75  374.52  159.06  373.88  159.11  374.24
   175.4  373.46  185.87  373.46  213.06  372.27  225.58  370.42  231.74  369.51
  232.66  367.04  234.89  366.62  240.64  367.46   244.1  370.65  253.02  370.54
  255.64  371.33  278.66  378.25  302.77  378.97  352.21     380   359.2  381.14
  364.26     382  367.65   382.7  370.16  383.19  373.86     384  378.45  385.21
  381.62     386  383.59  386.52  388.85     388  390.89  388.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  225.58     .04   244.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        225.58   244.1           98.18   94.21   91.92             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
   119.8   162.9     385       F
   185.6   201.5     385       F
   272.4   384.9     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   162.9   185.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6028

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   382.8   19.58  382.41   21.78  382.31   25.29     382   28.82  381.21
   33.73     380   38.53  378.96   47.92  377.02   53.08     376   53.61  375.96
   54.06  375.94    63.8  375.32   75.35  374.08   75.77     374   75.87     374
   79.55   373.5   79.83  373.47   80.44  373.45   80.74   373.5   108.3  372.93
  132.26  372.05  132.53     372  152.08     371  183.23  368.87  204.31   368.6
```

```
  204.32   368.6   205.1  368.59  214.72  368.32  216.43  366.61  219.36  365.53
  223.23  366.03  225.53  367.69  234.47  368.82  242.06  369.78  266.05  372.16
  283.38  373.66  295.75  374.49  302.61  375.35  306.21  375.74  307.44   375.9
  308.45     376  309.16  376.16  309.43  376.21  312.19  376.42  326.29  377.09
  336.37  377.85  338.16     378  343.77  379.27  346.84     380  352.57  381.65
  353.72     382  360.42     384  366.91     386  373.75     388  374.25  388.15
  375.39  388.44  376.82  388.77   382.2     390  385.62  390.91   387.5  391.38
  390.05     392  391.18  392.24  393.51   392.7  394.79  392.94   395.7  393.09
  396.68  393.28  398.05   393.5  400.71     394  401.05  394.02  401.31  394.02
  401.89  394.05  402.27  394.05  404.67  394.17

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.72     .04  234.47    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.72  234.47           100.93  101.91  101.19             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
      61   113.9     390       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    19.7      61     390   393.1  404.67     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5926

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.59     5.1     382     9.3  381.27   15.23  380.26   16.79     380
    17.4  379.93   17.99  379.89   25.61  379.19   28.72  378.92   41.87  378.06
   42.14  378.04   42.69  378.01    42.8     378   47.15  377.66   50.35  377.44
   52.95  377.29   54.78  377.18   55.85  377.13   57.24  377.07   58.56  376.99
   61.22   376.9    62.6   376.8   64.49  376.66    65.4  376.61   68.93  376.32
   69.43  376.28   72.62     376   79.17  375.23   79.85  375.13   81.75  374.86
   86.54  374.13    86.9  374.08   87.35     374   97.43   372.6  101.22     372
  101.71  371.98  102.49  371.97  103.31  371.98  103.65     372   103.7  371.95
  108.23  371.29  120.13  371.02  124.98  371.02  148.13   370.3   170.6  369.08
  174.12  367.61  175.06  367.22  180.45  367.62  186.44  367.24   187.3  365.38
  189.41  365.46  192.74  365.89  197.28  368.62  204.41  369.15  222.38  370.47
  248.76  371.19     255     372  274.29   373.9  275.14     374  287.23     376
  292.49  377.34  295.11     378  299.87  379.19  303.25     380  311.49     382
  318.69  383.66  320.08     384  327.45  385.84  328.11     386  335.19  387.48
  337.59     388  343.86  388.94  350.88     390  354.59  390.61   356.8  390.96

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.44     .04  197.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.44  197.28           102.11  102.54  102.93             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    60.6    75.4     385       F
   103.4   163.4     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    75.4   103.4     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5824

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.17    1.53  379.09    3.56  378.96    5.73   378.8    8.65  378.57
   10.86   378.4   11.67  378.34   15.69     378   20.08  377.29   27.83     376
   29.81  375.82   31.38  375.67   39.63  374.92   42.87  374.63   44.59   374.5
   49.91     374   62.23  371.55   92.34  370.63  109.26   369.2  110.94  369.06
  120.72  365.29  124.37  365.08  126.51  365.24  130.92  367.14  139.51  368.75
```

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  157.36   372.1  180.06  370.47  190.05  370.47  216.33     372  219.38  372.57
  223.55  373.34  225.27  373.66  227.19     374  231.58  375.26  234.22     376
  234.79  376.18  240.58     378  243.82  379.15  246.06     380  248.42  380.86
  251.63     382  257.95  383.86   258.4     384  260.44   384.5  266.77     386
  268.22  386.33  275.61     388  278.96   388.7   285.3     390  291.48  391.05
  292.67  391.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  109.26     .04  139.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        109.26  139.51            75.62   79.21   82.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5745

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     380    15.5  378.48   20.71     378    30.8  377.15   37.79  376.64
    40.3  376.44   46.11  376.04   46.38     376    47.1  375.96   69.11     374
    77.1  373.47  103.89  370.86  131.17   369.6  133.12  368.74  140.37  365.55
  143.61     365  144.73  363.71  148.48  363.03  150.47  363.33   159.4  368.15
  163.52  368.56  176.34  369.82  186.31   370.3  194.64  373.03  209.12  373.26
  225.27  372.55   225.6  372.55  225.92  372.54  226.18  372.55   226.7  372.55
   233.5  372.96   233.9  372.98  234.19     373  234.39     373  234.53  373.01
  234.67  373.01  234.83  373.02  242.93  373.56  243.64  373.58  246.98  373.68
  250.97   373.8  257.66     374  263.52  375.65  264.76     376  265.45  376.19
  271.67     378     272  378.09  278.61     380  283.25  381.15  286.54     382
  296.07  383.94  296.19  383.96  296.34     384  296.53  384.04  296.57  384.04
  296.61  384.05  296.75  384.07  297.08  384.12   302.2  384.91  306.31  385.41
  307.97  385.64  308.53  385.72  311.26     386  312.97  386.11  313.27  386.13
   317.7  386.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  131.17     .04   159.4    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        131.17   159.4            34.07   34.02   34.04             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   170.3   207.9     385       F
   225.8   247.8     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   207.9   225.8     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5711

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
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```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.06  162.62           96.24   96.18   98.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5650

INPUT
Description: Brookemede Road
Distance from Upstream XS =      37
Deck/Roadway Width        =      37
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     101 372.301             151 370.157             188 369.953
   218.7 370.181

Upstream Bridge Cross Section Data
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        136.06  162.62             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  128.33  372.41           152.3 372.301           202.9 370.157
   238.6 369.953           268.9 370.181

Downstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  375.09    1.07  375.04    1.94  375.04    2.62  375.01    3.78  375.02
       5  374.95    6.16  374.97   13.83   374.5   15.25  374.52   31.31  375.33
   32.18  375.35   39.66   374.3   45.41  373.86   50.93  373.59   53.48  373.55
   59.91  373.31    62.6  373.32   81.57  373.51   85.54  373.44   92.18  373.21
   98.33  373.03  102.35  373.09  105.39  372.98  113.27  372.64  128.33  372.41
  164.68   369.2  190.47  367.33  202.12  366.92  205.34  366.81  210.08   364.6
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22
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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        205.34   238.7            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8   367.5       F
     239   440.9   367.5       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  361.93
           Centerline Station =  148
Downstream Elevation =  362.09
           Centerline Station =  215

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  362.32
           Centerline Station =  153
Downstream Elevation =  362.32
           Centerline Station =  220

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         75.82    Culv Full Len (ft)         62.66
  # Barrels                     1    Culv Vel US (ft/s)          6.03
  Q Barrel (cfs)             75.82    Culv Vel DS (ft/s)          6.04
  E.G. US. (ft)             367.10    Culv Inv El Up (ft)       361.93
  W.S. US. (ft)             366.99    Culv Inv El Dn (ft)       362.09
  E.G. DS (ft)              366.14    Culv Frctn Ls (ft)          0.17
  W.S. DS (ft)              366.07    Culv Exit Loss (ft)         0.51
  Delta EG (ft)               0.97    Culv Entr Loss (ft)         0.28
  Delta WS (ft)               0.92    Q Weir (cfs)
  E.G. IC (ft)              366.09    Weir Sta Lft (ft)
  E.G. OC (ft)              367.11    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        365.93    Weir Max Depth (ft)
  Culv WS Outlet (ft)       366.07    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.64    Min El Weir Flow (ft)     369.97


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        116.15    Culv Full Len (ft)         62.66
  # Barrels                     1    Culv Vel US (ft/s)          9.24
  Q Barrel (cfs)            116.15    Culv Vel DS (ft/s)          9.24
  E.G. US. (ft)             369.36    Culv Inv El Up (ft)       361.93
  W.S. US. (ft)             369.30    Culv Inv El Dn (ft)       362.09
  E.G. DS (ft)              367.04    Culv Frctn Ls (ft)          0.41
  W.S. DS (ft)              366.96    Culv Exit Loss (ft)         1.25
  Delta EG (ft)               2.32    Culv Entr Loss (ft)         0.66
```

Delta WS (ft)	2.34	Q Weir (cfs)	
E.G. IC (ft)	368.02	Weir Sta Lft (ft)	
E.G. OC (ft)	369.36	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.25	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	73.55	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.85
Q Barrel (cfs)	73.55	Culv Vel DS (ft/s)	5.85
E.G. US. (ft)	372.18	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.08	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	371.28	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	371.23	Culv Exit Loss (ft)	0.48
Delta EG (ft)	0.90	Culv Entr Loss (ft)	0.27
Delta WS (ft)	0.85	Q Weir (cfs)	463.83
E.G. IC (ft)	366.00	Weir Sta Lft (ft)	100.74
E.G. OC (ft)	372.19	Weir Sta Rgt (ft)	252.19
Culvert Control	Outlet	Weir Submerg	0.38
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	2.24
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.16
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	143.52
Culv Crt Depth (ft)	2.59	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	58.80	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.68
Q Barrel (cfs)	58.80	Culv Vel DS (ft/s)	4.68
E.G. US. (ft)	373.08	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.83	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	372.57	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	372.48	Culv Exit Loss (ft)	0.25
Delta EG (ft)	0.51	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.35	Q Weir (cfs)	1035.70
E.G. IC (ft)	365.41	Weir Sta Lft (ft)	78.86
E.G. OC (ft)	373.10	Weir Sta Rgt (ft)	256.44
Culvert Control	Outlet	Weir Submerg	0.69
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.13
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.58
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	280.90
Culv Crt Depth (ft)	2.31	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	55.93	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.45
Q Barrel (cfs)	55.93	Culv Vel DS (ft/s)	4.45
E.G. US. (ft)	373.51	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.14	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.09	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.97	Culv Exit Loss (ft)	0.18
Delta EG (ft)	0.42	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.17	Q Weir (cfs)	1406.44
E.G. IC (ft)	365.30	Weir Sta Lft (ft)	71.95
E.G. OC (ft)	373.52	Weir Sta Rgt (ft)	258.48
Culvert Control	Outlet	Weir Submerg	0.75
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.55
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.92
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	357.75
Culv Crt Depth (ft)	2.25	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	59.83	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.76
Q Barrel (cfs)	59.83	Culv Vel DS (ft/s)	4.76
E.G. US. (ft)	373.93	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.40	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.48	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	373.30	Culv Exit Loss (ft)	0.18

Delta EG (ft)	0.45	Culv Entr Loss (ft)	0.18
Delta WS (ft)	0.10	Q Weir (cfs)	1824.67
E.G. IC (ft)	365.45	Weir Sta Lft (ft)	65.47
E.G. OC (ft)	373.94	Weir Sta Rgt (ft)	260.46
Culvert Control	Outlet	Weir Submerg	0.76
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.96
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	2.23
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	435.78
Culv Crt Depth (ft)	2.33	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	75.18	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.01
Q Barrel (cfs)	75.18	Culv Vel DS (ft/s)	6.14
E.G. US. (ft)	367.10	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	366.99	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	366.14	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	366.07	Culv Exit Loss (ft)	0.52
Delta EG (ft)	0.97	Culv Entr Loss (ft)	0.28
Delta WS (ft)	0.92	Q Weir (cfs)	
E.G. IC (ft)	366.45	Weir Sta Lft (ft)	
E.G. OC (ft)	367.09	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.25	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.07	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.62	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	115.85	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	9.22
Q Barrel (cfs)	115.85	Culv Vel DS (ft/s)	9.22
E.G. US. (ft)	369.36	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	369.30	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	367.04	Culv Frctn Ls (ft)	0.41
W.S. DS (ft)	366.96	Culv Exit Loss (ft)	1.24
Delta EG (ft)	2.32	Culv Entr Loss (ft)	0.66
Delta WS (ft)	2.34	Q Weir (cfs)	
E.G. IC (ft)	368.38	Weir Sta Lft (ft)	
E.G. OC (ft)	369.35	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.25	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	72.62	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.78
Q Barrel (cfs)	72.62	Culv Vel DS (ft/s)	5.78
E.G. US. (ft)	372.18	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.08	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	371.28	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	371.23	Culv Exit Loss (ft)	0.47
Delta EG (ft)	0.90	Culv Entr Loss (ft)	0.26
Delta WS (ft)	0.85	Q Weir (cfs)	463.83
E.G. IC (ft)	366.34	Weir Sta Lft (ft)	100.74
E.G. OC (ft)	372.17	Weir Sta Rgt (ft)	252.19
Culvert Control	Outlet	Weir Submerg	0.38
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	2.24
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.16
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	143.52
Culv Crt Depth (ft)	2.58	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	57.50	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.58
Q Barrel (cfs)	57.50	Culv Vel DS (ft/s)	4.58
E.G. US. (ft)	373.08	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.83	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	372.57	Culv Frctn Ls (ft)	0.10

W.S. DS (ft)	372.48	Culv Exit Loss (ft)	0.23
Delta EG (ft)	0.51	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.35	Q Weir (cfs)	1035.70
E.G. IC (ft)	365.74	Weir Sta Lft (ft)	78.86
E.G. OC (ft)	373.07	Weir Sta Rgt (ft)	256.44
Culvert Control	Outlet	Weir Submerg	0.69
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.13
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.58
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	280.90
Culv Crt Depth (ft)	2.28	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	54.63	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.35
Q Barrel (cfs)	54.63	Culv Vel DS (ft/s)	4.35
E.G. US. (ft)	373.51	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.14	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.09	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	372.97	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.42	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.17	Q Weir (cfs)	1406.44
E.G. IC (ft)	365.63	Weir Sta Lft (ft)	71.95
E.G. OC (ft)	373.50	Weir Sta Rgt (ft)	258.48
Culvert Control	Outlet	Weir Submerg	0.75
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.55
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.92
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	357.75
Culv Crt Depth (ft)	2.22	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	58.50	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.66
Q Barrel (cfs)	58.50	Culv Vel DS (ft/s)	4.66
E.G. US. (ft)	373.93	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.40	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.48	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	373.30	Culv Exit Loss (ft)	0.16
Delta EG (ft)	0.45	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.10	Q Weir (cfs)	1824.67
E.G. IC (ft)	365.78	Weir Sta Lft (ft)	65.47
E.G. OC (ft)	373.91	Weir Sta Rgt (ft)	260.46
Culvert Control	Outlet	Weir Submerg	0.76
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.96
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	2.23
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	435.78
Culv Crt Depth (ft)	2.30	Min El Weir Flow (ft)	369.97

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5614

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	375.09	1.07	375.04	1.94	375.04	2.62	375.01	3.78	375.02
5	374.95	6.16	374.97	13.83	374.5	15.25	374.52	31.31	375.33
32.18	375.35	39.66	374.3	45.41	373.86	50.93	373.59	53.48	373.55
59.91	373.31	62.6	373.32	81.57	373.51	85.54	373.44	92.18	373.21
98.33	373.03	102.35	373.09	105.39	372.98	113.27	372.64	128.33	372.41
164.68	369.2	190.47	367.33	202.12	366.92	205.34	366.81	210.08	364.6
211.22	364.43	215.09	361.81	217.13	362.04	229.59	362.98	238.7	368.44
238.98	368.61	251.44	369.69	268.94	370.18	285.07	369.62	290.27	370.06
298.37	370.04	306.37	370.28	324.69	371.75	335.39	372	342.38	373.55
344.58	374	353.22	376	364.13	378	366.42	378.31	380.54	380.03
386.38	380.25	391.69	380.39	399.18	380.94	403.65	381.15	406.06	381.34
407.91	381.42	410.66	381.64	411.73	381.67	415.82	382	420.24	382.3
421.1	382.39	423.89	382.58	424.39	382.64	428.52	382.91	431.83	383.32
435.07	383.79	435.47	383.82	436.48	384	438.12	384.43	440.9	385.22

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        205.34   238.7            60.47   54.67   45.26             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8   367.5       F
     239   440.9   367.5       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5560

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.71   12.44  380.66   20.28  380.48   30.01  380.06   32.55     380
   35.14   379.9   40.44  379.76    66.9  378.85   77.73  378.19    86.8  377.53
  106.28     376   135.5     374  137.27  373.83  145.55  373.21  146.86  373.14
  152.29  373.03  158.19  372.73  169.54  372.53  171.14  372.42   174.7     372
  177.92  371.83  200.19  370.97  216.51  371.11  224.54  370.88  233.81  370.74
  237.26  370.65  249.92     370  272.36   369.5  305.11  368.25  330.75   367.7
  351.63  367.26  351.64  367.26   352.8  367.24  361.62  364.64  365.14  363.68
  366.63  362.08  370.12  362.09  377.69  362.11   381.2  366.86  381.86  366.92
  381.88  366.92  400.75   368.4  415.84  369.84  428.22  370.13  441.48  370.08
  454.62  370.47  468.56  371.58  474.03  371.79  478.41     372  486.49  373.21
   492.4     374   496.8  374.72  506.14     376  510.13  376.65  519.35     378
  525.84  378.52   527.4  378.56  530.32  378.74  538.47  379.03  541.22  379.02
  541.91  379.05   543.2  379.02  545.47  379.17  545.81  379.17  552.05  379.68
   557.2  380.19  563.37  380.95  569.96     382  577.27     384   584.9     386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   352.8     .04   381.2    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         352.8   381.2            56.62   49.74    41.3             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5510

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        251.67  273.96            36.56   36.42   38.18             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
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180.5	232.8	385		F
232.8	241.8	367.86		F
281.5	313.2	368.03		F

BRIDGE

RIVER: Plumtree
REACH: Plumtree RS: 5500

INPUT
Description: Driveway
Distance from Upstream XS = 8.75
Deck/Roadway Width = 11.5
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 7

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
245	368		246.3	368.296		251.7	369.922	368.922
261.7	369.925	368.925	272.1	369.867	368.867	278.5	368.291	
281	367.8							

Upstream Bridge Cross Section Data
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.59	1.07	380.58	1.48	380.59	2.49	380.59	2.99	380.6
9.84	380.59	12.79	380.53	14.86	380.46	15.72	380.47	20.91	380.2
24.76	379.96	28.25	379.72	30.83	379.52	32.58	379.45	37.73	379.07
40.23	378.86	49.96	378	59.38	377.22	64.61	377	68.91	376.7
75.68	376.43	88.62	375.8	93.88	375.47	110.63	374.53	117.52	374
126.29	372.67	130.82	372	140.38	370	159.94	369.31	179.57	370
179.8	369.97	184.5	369.62	189.58	368.99	224.93	368.5	247.96	367.97
247.98	367.97	251.67	367.89	261.11	363.47	263.32	362.78	268.95	362.16
273.96	367.47	278.36	367.73	278.38	367.73	296.08	368.76	313.23	369.9
323.24	370.14	330.47	370.12	347.85	370.63	358.08	371.45	362.09	371.6
374.42	372	382.74	373.11	386.18	373.46	390.84	374	394.8	374.62
398.13	375.18	399.12	375.33	404.19	376	412.46	376.97	413.64	376.99
415.85	376.98	417.59	376.87	421.37	377.08	424.29	377.21	428.49	377.45
434.63	377.81	437.32	378	439.02	378.26	443.49	379	448.84	380
457.57	382	465.83	384						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	251.67	.04	273.96	.075

Bank Sta: Left Right Coeff Contr. Expan.
251.67 273.96 .3 .5
Ineffective Flow num= 4

Sta L	Sta R	Elev	Permanent
3	60.5	385	F
180.5	232.8	385	F
232.8	241.8	367.86	F
281.5	313.2	368.03	F

Downstream Deck/Roadway Coordinates
num= 7

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
218.37	367.75		222.9	368.709		228.8	369.891	368.891
238.9	369.925	368.925	248	369.959	368.959	254.6	368.591	
256.61	368.13							

Downstream Bridge Cross Section Data
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87
27.6	377.66	28.15	377.66	32.08	377.85	34.11	377.81	34.84	377.86
36.16	377.76	36.5	377.71	36.95	377.6	37.24	377.63	37.53	377.55
43.71	377.04	44.96	377.01	53.85	377.19	61.96	376.88	69.36	376.67
78.2	376.53	80.32	376.46	85.59	376.16	86.54	376.08	87.13	376
96.16	374	106.12	372	115.26	370	135.49	369.25	142.97	369.5
155.72	370	160.13	369.38	160.65	369.34	161.19	369.38	161.22	369.44
161.24	368.96	165.72	368.71	205.57	368.19	226.91	367.45	227.84	367.41
239.06	361.76	241.96	361.6	245.76	361.52	251.97	367.85	256.98	368.15
272.47	369.07	292.37	370.16	313.15	370.81	318.99	371.3	321.33	371.4
339.22	371.96	340.43	372	349.15	373.24	355.3	374	368.27	375.86
369.44	376	372.93	376.21	375.85	376.35	378.58	376.44	379.95	376.57
383.94	376.7	387.23	377.09	388.78	377.16	390.64	377.28	394.93	378
401.34	379.4	405.24	380.21	406.53	380.45	414	382	419.84	383.75
427.66	386.31								

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        227.84  251.97            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)               365.92    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               365.61    E.G. Elev (ft)              365.86        365.72
  Q Total (cfs)               151.00    W.S. Elev (ft)              365.52        365.57
  Q Bridge (cfs)              151.00    Crit W.S. (ft)              364.72        363.76
  Q Weir (cfs)                          Max Chl Dpth (ft)             3.36          4.05
  Weir Sta Lft (ft)                     Vel Total (ft/s)              4.69          3.19
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            32.23         47.40
  Weir Submerg                          Froude # Chl                  0.57          0.28
  Weir Max Depth (ft)                   Specif Force (cu ft)         63.57         95.51
  Min El Weir Flow (ft)       367.87    Hydr Depth (ft)               2.10          2.87
  Min El Prs (ft)             368.93    W.P. Total (ft)              17.42         20.14
  Delta EG (ft)                 0.24    Conv. Total (cfs)           1804.2        3116.1
  Delta WS (ft)                 0.08    Top Width (ft)              15.38         16.51
  BR Open Area (sq ft)         95.52    Frctn Loss (ft)               0.04          0.04
  BR Open Vel (ft/s)            4.69    C & E Loss (ft)               0.09          0.00
  BR Sluice Coef                        Shear Total (lb/sq ft)        0.81          0.35
  BR Sel Method          Energy only    Power Total (lb/ft s)         3.79          1.10


Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or
greater than
        1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.

BRIDGE OUTPUT  Profile #2-YR

  E.G. US. (ft)               366.82    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               366.46    E.G. Elev (ft)              366.76        366.63
  Q Total (cfs)               232.00    W.S. Elev (ft)              366.37        366.41
  Q Bridge (cfs)              232.00    Crit W.S. (ft)              365.31        364.34
  Q Weir (cfs)                          Max Chl Dpth (ft)             4.21          4.89
  Weir Sta Lft (ft)                     Vel Total (ft/s)              5.03          3.74
```

Weir Sta Rgt (ft)		Flow Area (sq ft)	46.10 62.09
Weir Submerg		Froude # Chl	0.43 0.30
Weir Max Depth (ft)		Specif Force (cu ft)	111.13 153.74
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.68 3.41
Min El Prs (ft)	368.93	W.P. Total (ft)	20.28 22.86
Delta EG (ft)	0.24	Conv. Total (cfs)	2960.9 4489.2
Delta WS (ft)	0.08	Top Width (ft)	17.19 18.19
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04 0.04
BR Open Vel (ft/s)	5.03	C & E Loss (ft)	0.09 0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.87 0.45
BR Sel Method	Energy only	Power Total (lb/ft s)	4.38 1.69

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	371.24	Element	Inside BR US Inside BR DS
W.S. US. (ft)	371.15	E.G. Elev (ft)	371.21 371.19
Q Total (cfs)	610.00	W.S. Elev (ft)	371.15 371.14
Q Bridge (cfs)	253.96	Crit W.S. (ft)	367.15 366.25
Q Weir (cfs)		Max Chl Dpth (ft)	8.99 9.62
Weir Sta Lft (ft)		Vel Total (ft/s)	1.67 1.55
Weir Sta Rgt (ft)		Flow Area (sq ft)	364.22 394.41
Weir Submerg		Froude # Chl	0.12 0.11
Weir Max Depth (ft)		Specif Force (cu ft)	770.00 908.30
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.18 2.30
Min El Prs (ft)	368.93	W.P. Total (ft)	215.75 225.95
Delta EG (ft)	0.07	Conv. Total (cfs)	13382.7 15389.7
Delta WS (ft)	0.05	Top Width (ft)	219.52 171.58
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02 0.01
BR Open Vel (ft/s)	2.66	C & E Loss (ft)	0.00 0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.22 0.17
BR Sel Method	Energy only	Power Total (lb/ft s)	0.37 0.26

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	372.50	Element	Inside BR US Inside BR DS
W.S. US. (ft)	372.36	E.G. Elev (ft)	372.46 372.43
Q Total (cfs)	1152.00	W.S. Elev (ft)	372.39 372.37
Q Bridge (cfs)	254.71	Crit W.S. (ft)	369.92 368.28
Q Weir (cfs)		Max Chl Dpth (ft)	10.23 10.85
Weir Sta Lft (ft)		Vel Total (ft/s)	1.96 1.84
Weir Sta Rgt (ft)		Flow Area (sq ft)	589.14 626.63
Weir Submerg		Froude # Chl	0.12 0.11
Weir Max Depth (ft)		Specif Force (cu ft)	1392.03 1569.89
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.99 3.08
Min El Prs (ft)	368.93	W.P. Total (ft)	245.49 260.31
Delta EG (ft)	0.10	Conv. Total (cfs)	25410.9 27824.9
Delta WS (ft)	0.09	Top Width (ft)	249.09 203.30
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02 0.02
BR Open Vel (ft/s)	2.67	C & E Loss (ft)	0.00 0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.31 0.26
BR Sel Method	Energy only	Power Total (lb/ft s)	0.60 0.47

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.00	Element		
W.S. US. (ft)	372.82	E.G. Elev (ft)	372.94	372.92
Q Total (cfs)	1517.00	W.S. Elev (ft)	372.85	372.83
Q Bridge (cfs)	270.81	Crit W.S. (ft)	370.54	370.24
Q Weir (cfs)		Max Chl Dpth (ft)	10.69	11.31
Weir Sta Lft (ft)		Vel Total (ft/s)	2.22	2.10
Weir Sta Rgt (ft)		Flow Area (sq ft)	682.55	722.16
Weir Submerg		Froude # Chl	0.13	0.12
Weir Max Depth (ft)		Specif Force (cu ft)	1724.38	1917.10
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.36	3.46
Min El Prs (ft)	368.93	W.P. Total (ft)	252.18	266.88
Delta EG (ft)	0.13	Conv. Total (cfs)	31329.4	33890.8
Delta WS (ft)	0.12	Top Width (ft)	255.72	208.87
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.02
BR Open Vel (ft/s)	2.84	C & E Loss (ft)	0.00	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.40	0.34
BR Sel Method	Energy only	Power Total (lb/ft s)	0.88	0.71

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #200-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.35	Element		
W.S. US. (ft)	373.10	E.G. Elev (ft)	373.35	373.32
Q Total (cfs)	1943.00	W.S. Elev (ft)	373.10	373.09
Q Bridge (cfs)	311.92	Crit W.S. (ft)	370.88	370.62
Q Weir (cfs)	1631.08	Max Chl Dpth (ft)	10.94	11.57
Weir Sta Lft (ft)	121.79	Vel Total (ft/s)	2.47	2.33
Weir Sta Rgt (ft)	385.12	Flow Area (sq ft)	786.12	833.01
Weir Submerg	0.98	Froude # Chl	0.15	0.14
Weir Max Depth (ft)	5.49	Specif Force (cu ft)	1958.62	2169.70
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.80	3.93
Min El Prs (ft)	368.93	W.P. Total (ft)	255.74	270.63
Delta EG (ft)	0.03	Conv. Total (cfs)		
Delta WS (ft)	0.01	Top Width (ft)	259.24	212.04
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	3.27	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5474

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87
27.6	377.66	28.15	377.66	32.08	377.85	34.11	377.81	34.84	377.86
36.16	377.76	36.5	377.71	36.95	377.6	37.24	377.63	37.53	377.55
43.71	377.04	44.96	377.01	53.85	377.19	61.96	376.88	69.36	376.67
78.2	376.53	80.32	376.46	85.59	376.16	86.54	376.08	87.13	376
96.16	374	106.12	372	115.26	370	135.49	369.25	142.97	369.5
155.72	370	160.13	369.38	160.65	369.34	161.19	369.38	161.22	369.44
161.24	368.96	165.72	368.71	205.57	368.19	226.91	367.45	227.84	367.41
239.06	361.76	241.96	361.6	245.76	361.52	251.97	367.85	256.98	368.15
272.47	369.07	292.37	370.16	313.15	370.81	318.99	371.3	321.33	371.4
339.22	371.96	340.43	372	349.15	373.24	355.3	374	368.27	375.86
369.44	376	372.93	376.21	375.85	376.35	378.58	376.44	379.95	376.57
383.94	376.7	387.23	377.09	388.78	377.16	390.64	377.28	394.93	378
401.34	379.4	405.24	380.21	406.53	380.45	414	382	419.84	383.75
427.66	386.31								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	227.84	.04	251.97	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
227.84 251.97 54.4 54.86 54.94 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	224.3	367.75	F
255.8	292.3	368.13	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	29.9	385	170.3	205.7	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5419

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.86	3.78	380.71	4.98	380.68	6.09	380.65	17.15	380.11
18.16	380	18.96	379.91	19.28	379.88	19.92	379.82	26.66	379.12
33.04	378.58	34.43	378.44	39.87	378	40.43	377.97	45.3	377.68
47.96	377.57	55.03	377.19	58.61	377.04	63.94	376.76	68.35	376.51
75.42	376.11	77.27	376	79.39	375.6	88.74	374	95.93	372.25
103.06	370.55	105.38	370	106.52	369.95	124.3	369.13	143.21	368.92
147.73	368.65	154.71	368.29	193.74	367.43	212.87	367.11	212.89	367.11
213.8	367.1	221.32	362.36	228.08	361.46	230.72	362.15	234.51	367.15
243.11	367.53	243.13	367.53	255.89	368.1	273.39	369.09	289.93	371.07
313.65	371.93	314.49	371.98	314.7	372	316.49	372.27	319.14	372.61
322.78	373.12	328.35	373.78	330.34	374.01	330.63	374.04	333.66	374.3
334.1	374.33	334.72	374.39	338.27	374.58	342.52	374.8	344.74	375.07
346.7	375.32	347.32	375.37	350.65	375.82	350.83	375.84	351.12	375.87
351.94	376	361.89	378	362.32	378.12	369.2	380	375.4	382
381.54	384	387.14	386						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.8	.04	234.51	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
213.8 234.51 93.04 95.36 97.65 .1 .3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	25.8	385	F
161.5	202.4	385	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5323

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.88	33.33	380.11	40.06	380	44.89	379.5	59	378
67.02	377.3	71.41	376.93	82.12	376	85.17	375.72	86.89	375.57
104.57	374	104.96	373.94	105.28	373.89	109.01	373.33	110.74	373.08
113.95	372.58	116.4	372.26	118.47	372	119.44	371.89	121.49	371.67
125.25	371.29	126.03	371.19	132.92	370	135.4	369.51	137.55	369.08
143.39	368.87	152.17	368.34	189.23	365.45	207.94	365.88	213.15	366
215.76	361.32	219.54	361.54	222.99	361.95	225.61	363.08	227.85	363.55
233.11	366.26	238	366.82	242.41	367.33	259.77	368.53	278.63	371.43
280.36	372	318.89	376	320.12	376.01	321.57	376.05	349.64	377.86
349.73	377.86	349.8	377.87	351.93	378	359.87	379.62	362.53	380
367.1	381.08	369.42	381.61	370.97	382	374.97	382.95	379.47	384
383.38	384.6	383.92	384.68						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.15	.04	233.11	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.15	233.11	116.69	114.31	111.9	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	28.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5209

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.03	.15	378.03	1.95	378	2.36	377.96	6.29	377.85
16.45	377.5	32.34	376.94	33.33	376.83	33.48	376.82	33.68	376.79
33.96	376.77	34.79	376.69	35.57	376.61	36.06	376.58	36.71	376.52
37.31	376.46	37.67	376.43	38.36	376.39	38.61	376.37	39.48	376.31
42.48	376.17	42.92	376.13	45.71	376	45.73	376	49.13	375.52
50	375.39	51.69	375.13	54.05	374.76	55.37	374.56	56.81	374.32
58.6	374	58.66	374	59.06	373.96	84.53	372.91	98.55	372.35
98.82	372.33	99.63	372.28	103.93	372.02	104.29	372	104.3	372
106.14	371.66	116.08	370.04	116.42	370	139.5	368.78	180.51	365.75
201.11	365.1	209.66	364.83	212.88	361.1	216.14	361.11	219.68	361.44
225.21	365.18	231.24	365.5	231.26	365.5	242.79	366.12	270.5	369.12
274.64	369.12	323.97	372.18	340.57	374.96	340.58	375.25	340.59	375.28
344.72	375.7	345.37	375.76	347.71	376	348.59	376.15		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.66	.04	225.21	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.66	225.21	111.42	101.59	91.47	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
298.8	301.6	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	22.5	380	270.4	298.8	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5107

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.01	.24	376	7.07	375.83	9.07	375.73	10.81	375.67

```
   14.62  375.53   15.38  375.51   17.77   375.4   18.91  375.37   34.75  374.53
   41.77  374.45   50.79  374.46   55.85  374.46   57.09  374.44   66.02  374.11
    71.3     374   75.88  373.97  100.91  373.67  129.38  373.15  147.16  372.84
  170.03  372.61  172.25  372.56  172.92  372.55  178.44  372.44  185.81   372.3
  200.51  372.07  201.43  371.98   201.7  371.98  202.67  371.92  215.72  371.52
   224.6  371.21  235.57  370.77  237.04  370.74  250.15  370.35  252.81  370.32
  253.08  370.31  263.87  370.17  266.55  370.18  267.52  370.19  268.58  370.13
  278.39  370.23  284.41  370.28  291.18  370.38   294.8  370.34  311.68  370.28
  315.54  370.35  315.75  370.35  322.33  370.22  323.94  370.21  332.11  370.09
  355.05   371.1  364.88   371.1  382.36  369.28  393.14  367.95  393.15  367.95
  397.41  367.43  406.55  360.36  409.03  359.92  412.88  360.59  414.63  362.95
  416.03  363.17   422.1  365.13  424.57  365.29  439.58  366.25   464.4  370.03
  475.81  370.03  507.28  370.74  534.67  372.32  549.02  374.66  549.03  374.92
  549.05  374.92  551.62  375.01  559.75     376  561.38  376.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  397.41     .04   422.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        397.41   422.1            67.29   67.07   66.86             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
   295.8   317.3     380       F
   445.9   465.3     380       F
   474.6   515.9     380       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
   317.3   364.3     380   465.3   474.6     380

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5040

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     376    3.61  375.88   21.39  374.91   24.35   374.9   39.18  375.08
   42.63  375.04   47.14   374.9   52.43  374.83    54.6  374.82   57.34  374.78
   60.84  374.76   65.24  374.68    66.8  374.67   69.29  374.63   82.36  374.74
   84.96  374.72    94.2  374.58   98.84  374.02   99.09     374  100.29  373.97
  104.65  373.88  105.56  373.85  106.59  373.78  109.92  373.71  111.01   373.7
  130.98   373.7  135.97  373.62  165.62  372.83  166.72  372.81  174.13  372.86
  190.11     373  193.32     373  195.48  372.98  206.16  372.44  206.59  372.42
  208.47   372.4  218.24   372.4  219.79  372.28  225.13     372  226.38  371.95
  226.58  371.93  245.52  371.43  256.75  371.11  261.14  370.99  264.15   370.9
  269.51  370.76  283.05  370.32  296.66  370.06  300.29     370   307.5  369.97
  310.36  369.98  336.01  370.03  366.23  369.58  397.63  368.96  412.55   368.2
  412.96  367.93   415.6  366.11  424.49  359.97  427.96  359.23  429.97  359.61
   432.2  361.31  434.59   361.8  443.41   365.9  443.42  365.91   448.7  368.36
  463.33  369.65  490.22  370.98  518.26  372.76  527.06  373.76  535.03     374
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         415.6  443.41           104.82   108.2  107.53             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5000

INPUT
Description: Longview Drive
Distance from Upstream XS =      38
Deck/Roadway Width        =      27
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
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```
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     122     374             231     372           346.8 370.217
   363.6 369.987           384.5  369.89             390 370.049
   400.6 370.192           404.7 370.096           417.9 370.146
   433.4  370.53           456.1 371.384           479.9   372.4
   523.7     374           556.9     376

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     376    3.61  375.88   21.39  374.91   24.35   374.9   39.18  375.08
   42.63  375.04   47.14   374.9   52.43  374.83    54.6  374.82   57.34  374.78
   60.84  374.76   65.24  374.68    66.8  374.67   69.29  374.63   82.36  374.74
   84.96  374.72    94.2  374.58   98.84  374.02   99.09     374  100.29  373.97
  104.65  373.88  105.56  373.85  106.59  373.78  109.92  373.71  111.01   373.7
  130.98   373.7  135.97  373.62  165.62  372.83  166.72  372.81  174.13  372.86
  190.11     373  193.32     373  195.48  372.98  206.16  372.44  206.59  372.42
  208.47   372.4  218.24   372.4  219.79  372.28  225.13     372  226.38  371.95
  226.58  371.93  245.52  371.43  256.75  371.11  261.14  370.99  264.15   370.9
  269.51  370.76  283.05  370.32  296.66  370.06  300.29     370   307.5  369.97
  310.36  369.98  336.01  370.03  366.23  369.58  397.63  368.96  412.55   368.2
  412.96  367.93   415.6  366.11  424.49  359.97  427.96  359.23  429.97  359.61
   432.2  361.31  434.59   361.8  443.41   365.9  443.42  365.91   448.7  368.36
  463.33  369.65  490.22  370.98  518.26  372.76  527.06  373.76  535.03     374
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         415.6  443.41             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

Downstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  375.75             124     374           270.8     372
   386.7 370.217           403.6 369.987           424.4  369.89
   429.9 370.049           440.5 370.192           444.4 370.096
   457.6 370.146           473.1  370.53           495.7 371.384
   519.5   372.4           561.3     374           594.1     376

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  381.34    1.15  381.36    5.15  381.18    6.14   381.2    7.86  381.16
   10.94  381.18   23.92     381   30.33  380.86   45.55  380.35   51.93  380.07
   65.77   379.6   68.46  379.68   70.71  379.61   75.04  379.33   80.36  379.11
  107.04  378.79  117.65  378.45  125.92     378  132.09  376.99  138.71     376
  142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
  164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
  181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
  210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
   248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
  296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
  405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
  444.02  363.09  449.76  359.84  461.09  359.04  468.33  363.92  475.48  368.75
  476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
  568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
  588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
  633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        442.94  468.33             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442  370.15       F
   476.1  633.02  370.15       F

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
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Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   68.79     .024     .024        0                  .5                1
Upstream   Elevation =  359.44
           Centerline Station =  425
Downstream Elevation =  359.83
           Centerline Station =  450

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   70.81     .024     .024        0                  .5                1
Upstream   Elevation =  359.39
           Centerline Station =  432
Downstream Elevation =  359.74
           Centerline Station =  457

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         74.87    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          4.45
  Q Barrel (cfs)             74.87    Culv Vel DS (ft/s)          6.62
  E.G. US. (ft)             362.93    Culv Inv El Up (ft)       359.44
  W.S. US. (ft)             362.45    Culv Inv El Dn (ft)       359.83
  E.G. DS (ft)              362.07    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              361.79    Culv Exit Loss (ft)         0.40
  Delta EG (ft)               0.86    Culv Entr Loss (ft)         0.15
  Delta WS (ft)               0.66    Q Weir (cfs)
  E.G. IC (ft)              362.19    Weir Sta Lft (ft)
  E.G. OC (ft)              362.94    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        362.48    Weir Max Depth (ft)
  Culv WS Outlet (ft)       361.79    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         1.82    Min El Weir Flow (ft)     370.12


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         115.70    Culv Full Len (ft)          6.34
  # Barrels                       1    Culv Vel US (ft/s)          5.81
  Q Barrel (cfs)             115.70    Culv Vel DS (ft/s)          6.93
  E.G. US. (ft)              364.31    Culv Inv El Up (ft)       359.44
  W.S. US. (ft)              364.04    Culv Inv El Dn (ft)       359.83
  E.G. DS (ft)               363.10    Culv Frctn Ls (ft)          0.04
  W.S. DS (ft)               362.84    Culv Exit Loss (ft)         0.49
  Delta EG (ft)                1.21    Culv Entr Loss (ft)         0.26
  Delta WS (ft)                1.19    Q Weir (cfs)
  E.G. IC (ft)               363.22    Weir Sta Lft (ft)
  E.G. OC (ft)               364.31    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)         363.44    Weir Max Depth (ft)
  Culv WS Outlet (ft)        362.84    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                  Weir Flow Area (sq ft)
  Culv Crt Depth (ft)          2.29    Min El Weir Flow (ft)     370.12


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         176.09    Culv Full Len (ft)         68.79
  # Barrels                       1    Culv Vel US (ft/s)          8.83
  Q Barrel (cfs)             176.09    Culv Vel DS (ft/s)          8.83
  E.G. US. (ft)              371.04    Culv Inv El Up (ft)       359.44
```

W.S. US. (ft)	370.98	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	368.26	Culv Frctn Ls (ft)	1.10
W.S. DS (ft)	368.11	Culv Exit Loss (ft)	1.06
Delta EG (ft)	2.78	Culv Entr Loss (ft)	0.61
Delta WS (ft)	2.87	Q Weir (cfs)	257.96
E.G. IC (ft)	365.17	Weir Sta Lft (ft)	291.80
E.G. OC (ft)	371.03	Weir Sta Rgt (ft)	447.59
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	1.17
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	0.71
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	110.25
Culv Crt Depth (ft)	2.92	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	45.31	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.27
Q Barrel (cfs)	45.31	Culv Vel DS (ft/s)	2.27
E.G. US. (ft)	372.17	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.05	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.05	Culv Frctn Ls (ft)	0.07
W.S. DS (ft)	371.94	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.11	Culv Entr Loss (ft)	0.04
Delta WS (ft)	0.11	Q Weir (cfs)	1061.26
E.G. IC (ft)	361.41	Weir Sta Lft (ft)	221.78
E.G. OC (ft)	372.17	Weir Sta Rgt (ft)	474.65
Culvert Control	Outlet	Weir Submerg	0.84
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.29
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.34
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	338.91
Culv Crt Depth (ft)	1.31	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	41.05	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.06
Q Barrel (cfs)	41.05	Culv Vel DS (ft/s)	2.06
E.G. US. (ft)	372.55	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.39	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.46	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.29	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.10	Q Weir (cfs)	1434.80
E.G. IC (ft)	361.29	Weir Sta Lft (ft)	204.12
E.G. OC (ft)	372.55	Weir Sta Rgt (ft)	483.82
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.65
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.56
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	436.07
Culv Crt Depth (ft)	1.24	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	28.69	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	1.44
Q Barrel (cfs)	28.69	Culv Vel DS (ft/s)	1.44
E.G. US. (ft)	372.87	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.65	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.82	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	372.59	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.05	Culv Entr Loss (ft)	0.02
Delta WS (ft)	0.06	Q Weir (cfs)	1885.56
E.G. IC (ft)	360.93	Weir Sta Lft (ft)	196.95
E.G. OC (ft)	372.87	Weir Sta Rgt (ft)	493.74
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	3.02
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	540.60
Culv Crt Depth (ft)	1.03	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	76.13	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.51
Q Barrel (cfs)	76.13	Culv Vel DS (ft/s)	6.42

E.G. US. (ft)	362.93	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	362.45	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	362.07	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	361.79	Culv Exit Loss (ft)	0.36
Delta EG (ft)	0.86	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.66	Q Weir (cfs)	
E.G. IC (ft)	362.17	Weir Sta Lft (ft)	
E.G. OC (ft)	362.91	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.44	Weir Max Depth (ft)	
Culv WS Outlet (ft)	361.79	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.84	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	116.30	Culv Full Len (ft)	10.17
# Barrels	1	Culv Vel US (ft/s)	5.84
Q Barrel (cfs)	116.30	Culv Vel DS (ft/s)	6.80
E.G. US. (ft)	364.31	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	364.04	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	363.10	Culv Frctn Ls (ft)	0.07
W.S. DS (ft)	362.84	Culv Exit Loss (ft)	0.46
Delta EG (ft)	1.21	Culv Entr Loss (ft)	0.26
Delta WS (ft)	1.19	Q Weir (cfs)	
E.G. IC (ft)	363.19	Weir Sta Lft (ft)	
E.G. OC (ft)	364.30	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.84	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.30	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	175.95	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	8.83
Q Barrel (cfs)	175.95	Culv Vel DS (ft/s)	8.83
E.G. US. (ft)	371.04	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	370.98	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	368.26	Culv Frctn Ls (ft)	1.13
W.S. DS (ft)	368.11	Culv Exit Loss (ft)	1.06
Delta EG (ft)	2.78	Culv Entr Loss (ft)	0.61
Delta WS (ft)	2.87	Q Weir (cfs)	257.96
E.G. IC (ft)	365.11	Weir Sta Lft (ft)	291.80
E.G. OC (ft)	371.05	Weir Sta Rgt (ft)	447.59
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	1.17
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	0.71
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	110.25
Culv Crt Depth (ft)	2.92	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	45.43	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.28
Q Barrel (cfs)	45.43	Culv Vel DS (ft/s)	2.28
E.G. US. (ft)	372.17	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.05	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.05	Culv Frctn Ls (ft)	0.08
W.S. DS (ft)	371.94	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.11	Culv Entr Loss (ft)	0.04
Delta WS (ft)	0.11	Q Weir (cfs)	1061.26
E.G. IC (ft)	361.37	Weir Sta Lft (ft)	221.78
E.G. OC (ft)	372.17	Weir Sta Rgt (ft)	474.65
Culvert Control	Outlet	Weir Submerg	0.84
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.29
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.34
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	338.91
Culv Crt Depth (ft)	1.32	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	41.15	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.06

Q Barrel (cfs)	41.15	Culv Vel DS (ft/s)	2.06
E.G. US. (ft)	372.55	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.39	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.46	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.29	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.10	Q Weir (cfs)	1434.80
E.G. IC (ft)	361.24	Weir Sta Lft (ft)	204.12
E.G. OC (ft)	372.55	Weir Sta Rgt (ft)	483.82
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.65
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.56
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	436.07
Culv Crt Depth (ft)	1.24	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	28.76	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	1.44
Q Barrel (cfs)	28.76	Culv Vel DS (ft/s)	1.44
E.G. US. (ft)	372.87	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.65	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.82	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	372.59	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.05	Culv Entr Loss (ft)	0.02
Delta WS (ft)	0.06	Q Weir (cfs)	1885.56
E.G. IC (ft)	360.88	Weir Sta Lft (ft)	196.95
E.G. OC (ft)	372.87	Weir Sta Rgt (ft)	493.74
Culvert Control	Outlet	Weir Submerg	0.87
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	3.02
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	540.60
Culv Crt Depth (ft)	1.03	Min El Weir Flow (ft)	370.12

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4932

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.34	1.15	381.36	5.15	381.18	6.14	381.2	7.86	381.16
10.94	381.18	23.92	381	30.33	380.86	45.55	380.35	51.93	380.07
65.77	379.6	68.46	379.68	70.71	379.61	75.04	379.33	80.36	379.11
107.04	378.79	117.65	378.45	125.92	378	132.09	376.99	138.71	376
142.75	375.74	145.13	375.77	151.41	375.65	152.99	375.6	162.62	375.4
164.08	375.33	165.89	375.33	172.24	375.73	177.38	376	177.63	376.05
181.27	376.17	185.16	376.34	192.75	376.58	200.87	376.58	208.17	376.57
210.94	376.5	239.9	376	245.1	375.7	245.52	375.7	248.29	375.54
248.6	375.54	250.31	375.45	256.27	375.5	262.18	375.3	281.18	374
296.71	372.3	299.71	372	320.36	371.86	345.94	370.82	375.13	370.26
405.43	368.96	424.73	368.62	429.83	363.66	442.94	363.7	444	363.1
444.02	363.09	449.76	359.84	461.09	359.04	468.33	363.92	475.48	368.75
476.07	368.78	476.1	368.79	501.36	370.51	527.01	371.18	549.43	374
568.87	375.7	572.79	376	583.63	376.6	584.84	376.64	587.35	376.78
588.79	376.83	590.9	376.94	610.8	377.12	614.03	377.22	619.02	377.46
633.02	378.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	442.94	.04	468.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
442.94	468.33	86.54	87.15	87.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	442	370.15	F
476.1	633.02	370.15	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4845

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.58	4.55	380.55	6.68	380.49	9.66	380.28	16.63	379.98
26.33	379.81	62.1	378.84	98.92	378	99.32	377.89	136.94	376
143	375.91	149.44	376	152.28	376.1	156.17	376.13	191.4	376.8
203.32	376.79	209.98	376.63	238.93	376.59	244.45	376.21	250.81	376
261.25	374.62	275.77	372	281.64	371.31	290.21	370.67	304.89	369.51
331.41	367.13	348.83	364.14	380.45	364.27	402.65	363.64	402.68	363.64
406.34	363.53	414.27	358.13	417.64	357.81	425.27	358.61	432.32	365.43
433.19	365.53	433.22	365.53	453.71	367.76	474.07	367.76	485.62	368
502.49	370	503.75	370.14	505.06	370.4	505.48	370.53	507.56	370.13
509	370	513.04	370	518.39	370.19	521.7	370.19	524.91	370.37
537.92	371.65	541.22	371.89	542.32	372.1	545.8	372.19	575.74	373.74
577.08	373.86	599.27	377.01	605.31	377.77	608.04	378.01	611.15	378.12
614.15	378.14	616.12	378.1	621.88	378.21	625.35	378.34	639.16	379.09
657.61	380	661.97	380.57	669.23	381.67	678.71	383.47		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	406.34	.04	433.22	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.34	433.22	89.54	100.49	110.66	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336.4	363.2	385	F
550.5	618	385	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
127.8	235.6	385	296.1	336.4	385	454	504.5	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4745

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.11	21.9	380.04	28.76	379.88	34.3	379.51	43.1	379.86
53.28	379.9	56.58	379.78	62.04	379.32	72.76	379.37	82.93	379.28
86.47	379.41	92.14	379.33	95.69	379.17	109.62	379.08	135.12	378.66
137.45	378.48	167.42	378.8	171.95	378.72	192.21	378	200.65	377.24
235.54	377.01	241.83	376.74	253.23	377.1	255.58	376.97	271.08	376.62
275.97	376.65	279.99	377.08	282.06	377.08	293.56	376.33	300.79	376.13
316.78	375.92	330.78	375.45	339.87	375.04	353.65	374	362.03	373.25
376.22	371.8	398.14	369.91	398.19	368.67	441.73	364.73	471.43	362.82
491.34	362.87	497.92	361.09	497.93	361.09	503.16	359.68	507.05	359.79
508.57	357.67	513.05	357.45	516.27	357.67	524	363.35	528.02	363.37
528.05	363.37	543.42	363.45	576.59	363.78	580.38	364	587.66	364.1
599.83	364.36	607.95	364.42	639.8	366	660.86	367.5	675.48	368.86
685.51	370	701.05	372.18	718.22	373.29	725.55	373.48	731.12	374.02
748.44	374.98	752.53	375.3	765.7	375.87	778.37	376.85	791.24	378
806.37	380	808.13	380.31	815.79	381.16	824.93	382	831.66	382.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	491.34	.04	524	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
491.34	524	111.08	108.67	106.25	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4636

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.34	6.89	380.72	8.14	380.72	21.8	379.64	39.34	378
67.85	376	132.49	373.43	147.33	374	162.25	376	169.4	376.34

```
  178.16  375.89  185.65  375.64  200.34  375.76   233.4  375.68  239.11  375.36
   249.5  375.34  251.25  375.42   257.5  375.35  267.44  374.96  277.67  374.75
  315.27  374.57  318.08  374.63  344.76     374   355.8     372  365.77     370
  409.43     368  426.89  366.86  461.95  364.11   477.5  361.95  477.88   361.7
  477.89  361.69   483.5  357.91  493.33  357.61  499.07  357.85   502.3  362.25
  508.59  362.41  508.61  362.41   524.4  362.83  556.76  362.64  588.33  363.03
  609.48  362.74  620.82  363.21  643.23  363.52  650.91  363.84  673.28  365.16
  690.67  365.89   697.4  365.96  767.85  369.67   776.5     370  791.17  370.91
  827.59     374  829.12  374.06  835.04     374  840.77  373.45  865.39     370
  874.22     368  886.48  367.07   898.7     368  908.05     370  921.08     372
  930.79     374  936.24     376  940.95     378  945.37     380  961.95     388
  966.25     390  970.84     392  976.29     394   984.5     396

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   477.5     .04   502.3    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         477.5   502.3            90.09   85.72   81.01             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  829.12  930.96  374.06       T
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    12.5    47.6     385   159.7   233.5     385   289.2   333.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4550

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         487.5  517.99           205.67  206.54  206.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 4400

INPUT
Description: US 40
Distance from Upstream XS =      53
Deck/Roadway Width        =     104
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     5.8     380              83     378             165     376
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     237     374             324     372             391 371.588
     429 371.157           463.7 370.927           490.9 370.876
   527.4 371.004           560.1 371.263           596.7  371.72
     644     372             732     374             786     376
     860     378             928     380             999     382

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         487.5  517.99            .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

Downstream  Deck/Roadway Coordinates
    num=      11
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      13     378              97     376             158     374
   290.3 372.244             328  371.79           354.7 371.615
   387.1 371.555           419.8  371.62           453.4 371.896
   491.3 372.287             600     374

Downstream Bridge Cross Section Data
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.39     3.9  379.26    7.14  379.08    8.79  379.03   11.22  378.89
   14.53  378.78   17.41  378.61   25.86  378.28    32.7   378.1   37.64  377.91
   47.11  377.39    52.1  377.51   58.99  377.54   77.62  377.45   88.21  377.23
   92.02  377.21   95.64  377.34  113.55  377.38  122.03     377  137.03  376.62
  138.43  376.63   139.9  376.54  142.13  376.29  145.36     376  158.31  375.76
  187.11  374.72  198.02   374.5  200.77  374.48  208.31  374.54   212.2  374.51
   224.1     374  231.63  372.98   244.2   372.1  267.66  371.03  274.63  370.67
  284.57     370  294.75  364.77  310.72  364.84   317.5  367.36  326.34  364.31
  347.85  362.45  366.55  361.42  369.78  361.24  371.99  357.69   373.8  356.67
  379.51  351.69   381.6     352  394.25  354.75  396.69  357.39  399.49  360.42
  420.27  362.04  443.45   362.5  460.82  363.19  487.61     366  491.52  366.47
  492.41  366.52  501.31  366.41  508.11  366.82  510.99  366.89  511.84  366.96
  518.45  367.09  530.63  367.88  531.82     368  543.84     370  556.98     372
  567.14  372.99  573.69  373.54  580.03     374  596.09  374.78  599.01  375.01
   603.8  375.23  612.54     376  624.11  376.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  369.78     .04  399.49    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        369.78  399.49            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     356     362       F
     407  624.11     362       F

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
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Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                32   136.5     .013     .013        0                  .3               1
Upstream   Elevation =  357.575
           Centerline Station =  502.25
Downstream Elevation =  357.07
           Centerline Station =  382
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CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	151.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.47
Q Barrel (cfs)	151.00	Culv Vel DS (ft/s)	8.70
E.G. US. (ft)	361.25	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	361.17	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	359.25	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	359.23	Culv Exit Loss (ft)	1.16
Delta EG (ft)	2.00	Culv Entr Loss (ft)	0.33
Delta WS (ft)	1.94	Q Weir (cfs)	
E.G. IC (ft)	361.13	Weir Sta Lft (ft)	
E.G. OC (ft)	361.25	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	359.80	Weir Max Depth (ft)	
Culv WS Outlet (ft)	359.24	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.17	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.23	Min El Weir Flow (ft)	371.57

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	232.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.77
Q Barrel (cfs)	232.00	Culv Vel DS (ft/s)	9.87
E.G. US. (ft)	362.47	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	362.39	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	359.77	Culv Frctn Ls (ft)	0.17
W.S. DS (ft)	359.73	Culv Exit Loss (ft)	1.75
Delta EG (ft)	2.70	Culv Entr Loss (ft)	0.45
Delta WS (ft)	2.66	Q Weir (cfs)	
E.G. IC (ft)	362.35	Weir Sta Lft (ft)	
E.G. OC (ft)	362.47	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	360.54	Weir Max Depth (ft)	
Culv WS Outlet (ft)	360.01	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.94	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.97	Min El Weir Flow (ft)	371.57

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
Warning: During the supercritical analysis, the program could not converge on a supercritical answer in the downstream cross
section. The program used the solution with the least error.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	610.00	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	15.25
Q Barrel (cfs)	610.00	Culv Vel DS (ft/s)	15.25
E.G. US. (ft)	368.14	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	368.09	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	361.65	Culv Frctn Ls (ft)	1.37
W.S. DS (ft)	361.50	Culv Exit Loss (ft)	4.04
Delta EG (ft)	6.49	Culv Entr Loss (ft)	1.08
Delta WS (ft)	6.59	Q Weir (cfs)	
E.G. IC (ft)	369.94	Weir Sta Lft (ft)	
E.G. OC (ft)	368.14	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	754.59	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.86
Q Barrel (cfs)	754.59	Culv Vel DS (ft/s)	18.86
E.G. US. (ft)	371.98	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	371.97	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	363.04	Culv Frctn Ls (ft)	2.10
W.S. DS (ft)	362.69	Culv Exit Loss (ft)	5.19
Delta EG (ft)	8.94	Culv Entr Loss (ft)	1.66
Delta WS (ft)	9.28	Q Weir (cfs)	397.41
E.G. IC (ft)	372.03	Weir Sta Lft (ft)	345.49
E.G. OC (ft)	371.98	Weir Sta Rgt (ft)	634.56
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.07
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.61
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	175.13
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	744.78	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.62
Q Barrel (cfs)	744.78	Culv Vel DS (ft/s)	18.62
E.G. US. (ft)	372.35	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.34	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	363.76	Culv Frctn Ls (ft)	2.04
W.S. DS (ft)	363.30	Culv Exit Loss (ft)	4.93
Delta EG (ft)	8.58	Culv Entr Loss (ft)	1.62
Delta WS (ft)	9.04	Q Weir (cfs)	772.22
E.G. IC (ft)	372.36	Weir Sta Lft (ft)	338.75
E.G. OC (ft)	372.35	Weir Sta Rgt (ft)	658.08
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.44
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.91
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	290.58
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	727.59	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.19
Q Barrel (cfs)	727.59	Culv Vel DS (ft/s)	18.19
E.G. US. (ft)	372.67	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.66	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	364.58	Culv Frctn Ls (ft)	1.95
W.S. DS (ft)	364.04	Culv Exit Loss (ft)	4.60
Delta EG (ft)	8.09	Culv Entr Loss (ft)	1.54
Delta WS (ft)	8.62	Q Weir (cfs)	1215.41
E.G. IC (ft)	372.67	Weir Sta Lft (ft)	332.52
E.G. OC (ft)	372.67	Weir Sta Rgt (ft)	673.37
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.79
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	1.19
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	405.28
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4344

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01
603.8	375.23	612.54	376	624.11	376.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	369.78	.04	399.49	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
369.78	399.49	54.24	54.2	54.21	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	356	362	F
407	624.11	362	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4289

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.16	4.18	376.93	6.02	376.92	13.94	376.67	20.26	376.2
24.9	376.18	33.24	377.06	38.69	377.12	40.04	377.22	48.07	377.42
60.83	377.6	66.6	377.54	72.7	377.21	85.85	376	95.14	375.32
109.02	374.79	111.75	374.73	114.36	374.6	120.7	374.51	138.66	374
141.06	373.73	149.42	372.56	154.25	372	161.5	371.27	163.79	371.11
170.81	370	173.81	369.84	195.17	369.42	204.6	369.46	213.04	369.62
222.3	370	223.43	370.15	226.4	370.41	227.06	370.31	236.85	369.39
247.27	369.56	249.28	369.5	253.56	369.2	259.27	368.95	271.49	368
281.02	366	283.53	365.58	284.63	365.72	287.61	365.54	294.16	364
296.04	363.42	300.15	363.15	323.16	361.6	346.64	361.49	362.78	361.62
366.58	358.56	372.42	353.86	381.79	352.78	389.78	353.42	392.45	357.73
395.52	357.99	397.76	358.89	397.77	358.9	401.82	360.54	427.65	361.5
461.12	362.68	474.19	364	499.06	364.89	510.36	365.54	512.25	365.53
519.79	366	531.35	367.23	537.87	368	549.98	370	574.53	371.66
580.97	371.69	592.69	371.17	604.52	371.32				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	362.78	.04	401.82	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
362.78	401.82	104.83	104.42	103.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4185

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.48	9.2	369.89	11.88	369.82	17.34	369.84	34.57	369.3
53.84	368.42	59.13	368.23	62.34	368.17	68.09	368.17	70.92	368.38
76.7	368.52	81.21	368.71	88.53	369.21	100.23	369.08	113.03	368.39
118.84	368.28	119.85	368.31	124.69	368.28	130.99	368.32	143.69	368.07
174.23	367.24	184.05	366.87	189.65	366.83	193.83	366.87	199.74	366.51
200.31	366.52	202.71	366.37	206.47	366	222.83	365.23	229.16	365.1
237.63	364.59	245.34	364	270.04	362.83	279.56	362.32	284.22	362
317.36	360.81	352.39	360.17	380.43	360.08	403.96	360.43	405.79	359.32
407.94	358.02	410.35	357.61	417	355.97	420.8	354.77	430.79	360.87
435.8	361.06	435.83	361.06	448.07	361.52	480.45	361.7	518.27	363.36
531.33	364	532.88	364.19	543.89	364.64	551.51	365.01	553.39	365.05
557.04	365.2	562.67	365.52	565.16	365.53	571.76	365.76	589.17	365.65
601.4	365.75	611.19	365.7	613.71	365.74	619.92	366	625.24	366.72
632.9	367.41	636.14	367.76	639.39	368	644.27	368.63	644.65	368.64
646.39	368.9	647.36	368.89	650.3	369.29				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	403.96	.04	430.79	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
403.96	430.79	151.73	151.97	152.24	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4033

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	371.31	6.28	371.09	10.1	370.82	11.41	370.78	13.41	370.65
16.07	370.59	24.34	370.14	26.91	370.09	30.53	370.19	38.94	370.2
41.71	370.32	43.77	370.21	45.82	370	47.56	369.91	61.47	368.93
64.73	368.91	74.46	369.43	84.71	369.4	87.19	369.59	93.43	369.89

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   94.09  369.89    96.1     370   98.42   370.2  102.15  370.38  104.17   370.4
  106.65  370.37   110.1   370.2  112.15     370  115.71  369.82  128.08  369.81
  137.68   369.7  151.03  369.46  154.18  369.16  164.93  368.77  175.08  368.49
  185.11   368.1  190.59  367.77   192.4  367.74   209.8  366.53  222.55  365.72
  229.81  365.17  231.09  365.15  237.47  365.25  254.65  364.85  274.84     362
  281.46  361.45  311.04  360.26  324.61  359.69  324.63  359.69  327.57  359.56
  332.63  355.53   339.8  355.05  344.88  355.72  350.28  359.03  354.96  359.02
  354.99  359.02  368.82  358.97  388.87  359.13  402.39  358.88  463.03     360
  463.46  360.12   468.3  360.75  482.77     362  495.13  362.44  501.53  362.51
  509.75   362.5  519.32  362.16  523.42  362.13  524.98     362  532.66  361.82
  536.09  361.79  548.11  361.82  551.96     362   557.9  362.44  583.12   363.9
  596.37  364.95

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  327.57     .04  350.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        327.57  350.28            105.3  103.27  101.24             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3930

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  373.25    5.62  373.04   18.75  372.65   20.05  372.56   51.89  373.28
   67.22  372.62   75.52  372.21   81.21     372   82.89   371.8   83.35  371.81
  100.65  370.82  104.09  370.51  109.16     370   119.9  369.24   121.3  369.19
  125.83  369.28  143.55  369.25   145.3  369.37  145.92  369.31  149.12  369.58
  149.56  369.54  151.28  369.67  155.23  369.78  159.52  369.77  162.64  369.66
  165.16   369.5  170.48     369  173.88  368.53  174.87  368.43  177.64     368
  179.57  367.59  182.98  366.78  185.85     366  189.84  365.01  193.24     364
  205.26  362.99  232.35  361.15  264.16  359.45  274.41  358.31  274.42  358.31
  280.37  357.65  286.95  354.74  289.44  354.49  294.11  355.34  299.09  358.68
  305.18  358.74  305.19  358.74  321.51  358.88  353.18  358.92  436.87     360
  449.41     362  451.92  362.47  457.66  363.46  461.04     364  466.97  364.48
  469.66  364.48   474.3  364.61  476.21  364.58  476.86  364.61  477.78  364.59
  488.71  364.64  490.27  364.68  512.72  365.88  514.21     366  532.64     368
  542.86     370  544.26  370.23   546.1  370.43  549.88  370.48  552.59  370.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  280.37     .04  299.09    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.37  299.09           112.01  113.72  114.59             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
     176   200.4     375       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   163.1     176     375

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3816

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  374.86    10.9     374   35.12     372   42.05  371.48   47.58  371.12
   58.88  370.34   59.53  370.34   78.46   370.9   81.56  371.04   85.42  370.91
    91.5   370.8   96.65  370.74   108.4  370.09  110.41     370  112.14   369.8
  112.78  369.76   116.9  369.37  121.06     369  125.02   368.8  128.66  368.54
  132.43   368.4  135.47  368.11  138.27  368.07  140.86  368.14   143.7  368.03
  150.81   367.6   154.5  367.24  157.37  366.85  163.04     366  174.59  362.82
  217.65  358.92   236.4  357.65  236.42  357.65  237.46  357.58  243.76  354.29
   251.5   353.5  252.56  353.49   255.1  356.69   266.5  357.28  266.52  357.28
  271.38  357.54  301.23  358.52  327.76  358.95  350.57     360  371.84  361.19
  386.87     362  399.91  363.11  404.12  363.54  410.91  364.18  416.03  364.61
  421.73     365  428.74  365.37  429.75  365.39  438.84  365.39  440.51  365.38
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  443.31   365.3  444.17  365.29  449.76  365.05  455.01  364.86  460.03   365.2
  465.28  365.49   469.1  365.73  472.03  365.86  472.64  365.86  474.82  366.04
  496.26   366.8  498.97  366.85  515.31  366.69  518.73   366.8  522.16  366.85
  525.33  367.02  526.96  367.04   534.8  367.32  549.03     368  554.32  368.52

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  237.46     .04   255.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        237.46   255.1            128.5  127.87  127.21             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   173.5   186.9     375       F
   373.3   445.4     375       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   142.2   173.5     375

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3688

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.19   12.07  367.61   20.74  367.88   33.44   368.3   35.81  368.34
   36.91  368.35   38.51   368.3    41.9  368.05   42.34     368   46.49  367.62
   57.82  366.07   58.06     366   58.98  365.89   59.73  365.86   61.35  365.74
   62.76  365.59   63.36  365.54   64.65  365.39   65.31  365.33   65.53   365.3
   68.14  364.99   69.06  364.94   77.78  365.17   78.29  365.12   78.87  365.13
   79.51  365.14   81.34  364.92   81.98  364.92   82.64  364.91   84.22  364.72
   85.27  364.68   87.32  364.44   87.96   364.4   91.82     364   92.71  363.94
   94.56   363.8  107.05  361.62  112.03  361.62  156.44  357.41  156.46  357.41
  166.74  356.43  170.56  353.16  171.46  352.86  179.43  353.24  182.46  356.86
  186.46     357  186.47  357.01  203.22  357.63   227.7   358.5  256.67     360
  261.88  360.34  264.57  360.54  271.14  360.98  283.16  361.89  284.48     362
  293.32  363.31  295.65   363.6  300.63  364.22  302.93  364.48  304.51  364.65
  310.25  365.25  317.77  366.05  320.57  366.39   321.8  366.52  324.49  366.86
  328.15  367.23  329.94  367.46  331.84  367.65  332.96  367.78  334.64     368
  343.14  368.38  353.94  368.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  166.74     .04  182.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        166.74  182.46           137.67  137.99   138.3             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    72.5   108.3     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   309.8   338.6     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3550

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.59   21.83     366   22.15  365.93   22.36  365.91   22.65  365.88
   24.81  365.75   34.15  365.49   36.08  365.41   36.47  365.41   56.33  364.39
   62.74  364.35   64.54  364.35   78.24  364.86   78.82  364.87   80.11   364.9
   92.13  365.45   95.39  365.49   97.19  365.52   98.79  365.54  111.29  364.66
  113.06  364.51  113.63  364.52  115.75  364.34  116.17  364.34  118.14  364.18
  118.26  364.18  120.55     364  125.47  363.66  128.06  363.49  130.87  363.32
  133.62  363.17  137.86  362.93  141.25  362.78  142.84  362.67  144.42  362.54
  144.88  362.52  147.11   362.3   147.6  362.27  150.07     362  168.07  360.18
  202.08  358.28  222.67  356.22  222.69  356.22  229.29  355.55  231.57  353.11
  237.67  352.85  241.52  353.14  245.66  357.02   252.8  357.45  270.01   358.5
  299.86  361.08  320.94  363.87  322.12  363.98  326.43  364.47  335.31     366
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  338.09  366.52  340.43  367.05  344.77     368  352.58  368.68  357.63  369.11
  363.94  369.54  366.26  369.71  370.89     370  376.06  370.55  378.66  370.84
  385.91   371.5  387.76   371.7  391.56     372  393.08  372.13  393.26  372.12
  394.51   372.2  396.42  372.27  400.73  372.39  401.46  372.38

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  222.67     .04  245.66    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        222.67  245.66           121.58  121.96  122.09             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     132   172.9     370       F
   358.4  401.46     375       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3428

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.25     .08  366.25     .21  366.24    2.49  366.31    5.55  366.33
     6.5  366.31    6.69   366.3    6.85  366.29    6.95  366.28    7.02  366.27
    7.07  366.26    7.09  366.26    7.37  366.14     7.5  366.11    7.73  366.11
    7.81     366   17.71  365.88   17.76  365.88   35.41  362.54   54.26  359.25
   71.12  356.77   71.14  356.77   72.75  356.53   82.67  355.38    85.4  352.15
   86.22  352.06   88.74  351.86   91.45  352.09   93.89  352.39   98.94  357.17
  101.38  357.43  121.79  359.59   156.9  362.39  164.18  363.89  164.43  364.14
  168.22  363.93  172.23  363.84   172.9  363.86     176  363.96   177.1     364
  178.13   364.1  190.23  365.12  198.83  365.85  199.59  365.91  200.67     366
   208.9  367.19  214.54     368  221.01  368.41  227.99  368.94  228.59  368.95
  229.18  368.96  244.28  369.43

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   82.67     .04   98.94    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         82.67   98.94           131.85  132.32  132.95             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    31.2    57.1     370       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     7.4    31.2     370   207.8   224.4     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3296

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  369.04    7.44  368.25    8.57   368.2   13.73     368   15.86  367.86
   16.24  367.82   20.57  367.48   24.23  367.01    30.3  366.41   32.66     366
   34.91  365.82   36.33  365.68   37.74  365.56   39.57  365.37   40.92  365.29
   43.15  365.29    43.9  365.26   57.19  365.22   65.98  364.57   67.12  364.52
   74.19     364   78.97  363.56   80.16  363.45   86.96  362.83   90.65  362.47
   94.56  362.11   95.89     362    97.9   362.2   98.84  362.19  107.93  362.58
  109.64  362.69  113.85  362.82  117.37  362.83  135.78  361.77  153.23  361.58
  168.24  361.26   168.8  361.63  178.91  362.18  192.98  358.61  195.06  357.92
  201.72  355.69  204.53  352.08  205.68  351.83  208.07  351.91  210.45  351.72
  213.06   352.1  214.14  351.94  214.68  352.11   218.9  356.65  223.16  358.34
  225.56  358.53  225.57  358.53   241.1  359.76  252.96  359.64  253.63  359.34
   274.2  360.14  298.22  360.84  338.52     362  345.28  362.49  349.83   362.8
  358.24  363.42  360.55  363.61  366.27     364  376.16  364.76  381.02   365.1
  384.43  365.36   386.5  365.49  387.73  365.58  388.62  365.62  390.74  365.78
  391.33   365.8  393.98     366  397.53  366.12  401.29  366.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
       0    .075  195.06     .04  223.16    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        195.06  223.16           117.57  116.94  115.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3179

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.99    2.92  366.32    4.49     366    7.03  365.74   10.65  365.61
   11.25  365.55   16.84  365.58   20.65  365.55   33.69  365.26   37.05  365.27
   37.83  365.19   39.74  365.22   40.57  365.13   41.71  365.14   42.29  365.07
   42.83  365.07    44.3  364.91   44.81  364.89   52.54  364.19   59.05  363.73
   59.96  363.72   64.43     364   81.81  364.24   90.25  364.43   92.01   364.4
   99.97     364  104.37  363.32  108.33  362.78  110.63  362.49   114.3  362.12
  115.81     362  120.17  361.84  122.87  361.79  123.54  361.75     128  361.77
  128.34  361.74  133.43  361.84  133.74  361.82  143.14  361.87   149.1  361.65
  164.07  359.25  179.76  356.13  194.67  355.75   202.4  355.27  206.08  354.62
   206.1  354.62  214.08  353.21  222.22  351.72   224.4  350.87  225.57  350.64
  226.07   350.5  226.87  350.39  227.28  351.49  228.52  356.98  237.22  357.51
  237.24  357.52   245.5  358.02  261.13  358.56  278.43  358.68  287.56  359.19
  290.34  359.37   293.7  359.56  297.36  359.67  300.98  359.87  307.03     360
  313.84  360.92  321.07     362  329.79  363.01     342  364.37  355.84     366
  363.77  366.33  385.35  367.64  391.11  368.04  397.46  368.33

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  179.76     .04  228.52    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        179.76  228.52           101.1  102.24  103.14             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0    63.2     370       F
    80.2      98     370       F
   277.5   332.8     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      98     149     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3077

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.18    1.12  364.15    2.53  364.12    3.97   364.1    8.56   364.2
    8.98   364.2   10.31  364.25   11.19  364.24   13.14  364.15    13.5  364.12
   14.57     364   18.43  363.88   21.38  363.78   24.61  363.74   33.92  363.48
   39.77  363.33   48.31  362.93   50.98  362.82   61.21  362.37   63.02  362.31
    70.2     362   74.59   361.6    77.1  361.43   82.58  360.97   83.28  360.94
   95.42  360.41   99.21  360.31  103.01  360.23  103.64  360.21  104.52  360.13
  105.54     360  107.69  359.58  114.03     358  134.95   356.4  140.36     356
  163.01  355.01  179.63  355.11  193.39  354.95  204.81  355.12  210.64  354.59
  210.65  354.59     217  354.02  219.69  351.67  221.67  350.95  222.49  350.87
   223.8  350.87  226.26  350.75  228.21  350.72  229.11  350.89  230.73  354.07
  234.33  355.41   241.4  355.41  250.01  355.42  265.82  356.22  283.13  356.64
  290.94  357.97  293.37  357.99  293.48     358  295.67  358.42  300.65   359.3
   303.5  359.83  304.53     360  320.68  361.37  322.55  361.51  328.44     362
  330.19  362.24  341.42     364  344.14   364.6  349.88     366  354.73  367.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  204.81     .04  234.33    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        204.81  234.33            99.64   98.98   98.39             .1       .3

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 2978

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	362.91	26.14	362.3	28.29	362.14	29.8	362.2	30.23	362.16
30.97	362	35.23	361.59	35.47	361.59	37.04	361.43	37.26	361.43
38.5	361.3	38.73	361.31	45.76	360.54	80.82	360.96	102.15	360.38
114.55	360.01	118.88	359.77	161.71	358.87	229.91	358	230.71	357.16
236.45	357.02	243.79	356.29	243.81	356.29	245.02	356.16	250.07	353.33
252.35	352.96	254.47	350.89	255.74	350.56	257.29	350.63	259.41	350.68
261.6	350.53	263.18	350.69	263.71	350.84	265.48	354.05	274.04	355.2
274.05	355.2	275.87	355.44	297.22	357.18	316.25	361.84	320.6	362.22
347.97	363.14	347.98	363.82	352.13	364	360.46	364.7	368.43	365.33
374.4	365.77	378.19	366	379.71	366.15	380.66	366.19	383.79	366.08
384.49	366.11	386.36	366	389.31	365.95	390.69	366	391.27	366.26
391.59	366.47	398.39	367.21	402.86	368	410.75	370	415.21	370.52
417.39	370.39	425.64	370.89	432.78	372	437.01	373.28	442.02	374.48
446.02	375.38	448.25	375.83	449.28	376	451.72	376.13	455.64	376.24
456.7	376.24	472.15	376.84	479.93	377.06	491.12	376.37		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	245.02	.04	274.04	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
245.02 274.04 61.85 60.74 60.21 .1 .3
Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	141.71	359.42	F
333.74	436.4	359.42	F
436.4	487.3	370	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
23.3	86.1	370	160.1	223.6	370	343	389	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2917

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84
653.46	371.06	662.64	371.32	668.42	372	676.66	372.58	679.51	372.87

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	440.02	.04	471.92	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
440.02 471.92 89.63 90.26 89.98 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	409.3	359.42	F
485.9	679.51	359.42	F

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 2900

INPUT
Description: Frederick Road
Distance from Upstream XS = 32
Deck/Roadway Width = 33
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 15

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	368.5		23	368		86	366	
146	364		200	362		259	360	
337.5	359.415		380.1	359.626		407.4	359.923	
427.3	360.169		456.8	360.827		563.7	363.651	
590	364		641	366		679.51	367	

Upstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84
653.46	371.06	662.64	371.32	668.42	372	676.66	372.58	679.51	372.87

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	440.02	.04	471.92	.075

Bank Sta: Left Right Coeff Contr. Expan.
440.02 471.92 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	409.3	359.42	F
485.9	679.51	359.42	F

Downstream Deck/Roadway Coordinates
num= 13

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	368		60	366		120	364	
174	362		234	360		312.1	359.415	
354.5	359.626		382.1	359.923		401.6	360.169	
431.7	360.827		538.1	363.651		556	364	
615	366							

Downstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

```
Bank Sta: Left   Right    Coeff Contr.   Expan.
         400.8  432.64            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  395.05     356       F
   445.1  623.32     356       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch    8.25   12.78
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                20    56.5     .024     .024        0                  .5                1
Upstream   Elevation =  350.33
           Centerline Station =  456
Downstream Elevation =  350.16
           Centerline Station =  421

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        174.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          3.92
  Q Barrel (cfs)            174.00    Culv Vel DS (ft/s)          3.79
  E.G. US. (ft)             354.50    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             354.29    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              354.31    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              354.05    Culv Exit Loss (ft)         0.00
  Delta EG (ft)               0.19    Culv Entr Loss (ft)         0.12
  Delta WS (ft)               0.24    Q Weir (cfs)
  E.G. IC (ft)              353.37    Weir Sta Lft (ft)
  E.G. OC (ft)              354.50    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        354.14    Weir Max Depth (ft)
  Culv WS Outlet (ft)       354.09    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.90    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.14    Min El Weir Flow (ft)     359.43


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        227.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          4.57
  Q Barrel (cfs)            227.00    Culv Vel DS (ft/s)          4.47
  E.G. US. (ft)             355.05    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             354.81    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              354.74    Culv Frctn Ls (ft)          0.17
  W.S. DS (ft)              354.49    Culv Exit Loss (ft)         0.06
  Delta EG (ft)               0.31    Culv Entr Loss (ft)         0.16
  Delta WS (ft)               0.32    Q Weir (cfs)
  E.G. IC (ft)              353.90    Weir Sta Lft (ft)
  E.G. OC (ft)              355.05    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        354.56    Weir Max Depth (ft)
  Culv WS Outlet (ft)       354.49    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         3.43    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.47    Min El Weir Flow (ft)     359.43


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        609.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          9.11
  Q Barrel (cfs)            609.00    Culv Vel DS (ft/s)          9.43
  E.G. US. (ft)             358.12    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             357.90    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              356.31    Culv Frctn Ls (ft)          0.24
  W.S. DS (ft)              355.79    Culv Exit Loss (ft)         0.86
```

Delta EG (ft)	1.81	Culv Entr Loss (ft)	0.65
Delta WS (ft)	2.11	Q Weir (cfs)	
E.G. IC (ft)	357.32	Weir Sta Lft (ft)	
E.G. OC (ft)	358.12	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	356.18	Weir Max Depth (ft)	
Culv WS Outlet (ft)	355.79	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	4.30	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	878.41	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.18
Q Barrel (cfs)	878.41	Culv Vel DS (ft/s)	11.81
E.G. US. (ft)	360.45	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.29	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	357.36	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	356.85	Culv Exit Loss (ft)	1.66
Delta EG (ft)	3.09	Culv Entr Loss (ft)	0.97
Delta WS (ft)	3.44	Q Weir (cfs)	287.59
E.G. IC (ft)	360.39	Weir Sta Lft (ft)	246.70
E.G. OC (ft)	360.45	Weir Sta Rgt (ft)	439.91
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	357.54	Weir Max Depth (ft)	1.04
Culv WS Outlet (ft)	356.85	Weir Avg Depth (ft)	0.67
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	128.66
Culv Crt Depth (ft)	5.41	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	908.31	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.16
Q Barrel (cfs)	908.31	Culv Vel DS (ft/s)	11.50
E.G. US. (ft)	360.92	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.71	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	357.95	Culv Frctn Ls (ft)	1.05
W.S. DS (ft)	357.42	Culv Exit Loss (ft)	1.53
Delta EG (ft)	2.97	Culv Entr Loss (ft)	0.97
Delta WS (ft)	3.29	Q Weir (cfs)	620.69
E.G. IC (ft)	360.86	Weir Sta Lft (ft)	232.15
E.G. OC (ft)	360.92	Weir Sta Rgt (ft)	459.95
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.01	Weir Max Depth (ft)	1.50
Culv WS Outlet (ft)	357.42	Weir Avg Depth (ft)	0.99
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	225.81
Culv Crt Depth (ft)	5.55	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	916.22	Culv Full Len (ft)	4.31
# Barrels	1	Culv Vel US (ft/s)	10.95
Q Barrel (cfs)	916.22	Culv Vel DS (ft/s)	11.18
E.G. US. (ft)	361.40	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	361.15	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.56	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	357.99	Culv Exit Loss (ft)	1.37
Delta EG (ft)	2.84	Culv Entr Loss (ft)	0.93
Delta WS (ft)	3.16	Q Weir (cfs)	1082.78
E.G. IC (ft)	361.33	Weir Sta Lft (ft)	218.26
E.G. OC (ft)	361.40	Weir Sta Rgt (ft)	477.77
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.58	Weir Max Depth (ft)	1.97
Culv WS Outlet (ft)	357.99	Weir Avg Depth (ft)	1.31

Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	340.49
Culv Crt Depth (ft)	5.59	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2827

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
400.8	432.64	59.3	67.61	75.81	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	395.05	356	F
445.1	623.32	356	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2759

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	372.77	2.31	372.75	3.21	372.76	3.79	372.7	5.35	372.51
10.05	372	17.86	370.67	21.54	370	22.94	369.68	29.73	368
38.04	366	41.31	365.14	46.41	364	49.98	363.37	58.32	362
62.31	361.29	70.12	360	83.48	358.75	88.76	358.48	93.5	358.22
94.45	358.15	97.16	358	128.47	356.25	137.97	356	166.97	354.77
188.46	354.27	206.85	354.18	213.44	353.14	217.92	353.75	217.94	353.75
221.54	354.24	229.72	353.68	232.16	349.32	242.11	350.03	244.47	353.83
247.97	353.92	254.64	354.1	273.96	354.9	288.2	354.55	327.4	356
337.32	356.54	361.29	357.92	361.9	358	364.26	358.17	365.41	358.24
367	358.37	372.78	358.74	375.31	358.81	388.46	358.79	394.15	358.8
397.84	358.95	400.41	358.96	402.23	359.06	404.53	359.21	405.49	359.23
408.57	359.48	408.95	359.49	411.45	359.7	411.87	359.72	415.03	359.99
415.31	360	417.03	360.2	418.39	360.3	428.8	360.31	433.64	360.4
438.69	360.56	442.82	360.73	450.11	361.09	466.87	362	474.25	362.98
481.02	364	491.61	366	492.4	366.16	501.24	368		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	229.72	.04	244.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
229.72	244.47	166.79	169.71	170.1	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.5	6.39	370	8.12	369.55	9.88	369.06	13.59	368
15.68	366.43	16.18	366	16.5	365.69	18.44	364	19.42	363
20.51	362	21.74	361.02	22.67	360	27.21	358.55	28.42	358.17
28.89	358	48.8	356	56.94	355.65	62.31	355.06	97.9	354.08
104.04	353.91	106.64	349.71	112.07	349.9	114.29	352	118.86	352.08
128.02	352.48	129.83	352.56	142.4	352.11	158.46	352.06	163.77	353.31
176.98	353.81	195.26	354.09	212.76	355.32	219.91	355.94	220.06	355.97
220.33	356	220.34	356	220.77	356.04	224.36	356.3	227.8	356.43
228.59	356.43	235.01	356.02	235.26	356	235.49	356	244.56	356.04
247.2	356.04	248.45	356.03	254.75	356.02	257.6	356.01	259.1	356
259.88	356.04	262.22	356.13	262.67	356.15	272.42	356.42	274.41	356.5
275.87	356.57	277.84	356.65	283.08	356.9	287.67	357.1	289.83	357.2
291	357.25	295.04	357.45	305.68	358	327.61	359.52	335.25	360
342.18	360.46	349.91	360.96	357.47	361.46	361.02	361.68		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	104.04	.04	114.29	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.04	114.29	102.11	104.17	106.57	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2485

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.38	4.47	368.19	8.54	368.03	9.3	368	11.37	367.71
12.69	367.6	12.97	367.59	21.49	367.83	21.72	367.79	24.75	367.98
24.78	367.97	25.94	368.02	27.18	368.02	28.49	367.97	29.82	367.87
30.25	367.77	31.68	367.58	33.56	367.26	35	366.85	38.23	366
38.64	365.88	39.08	365.73	41.93	364.86	44.58	364	51.26	362.13
51.81	362	52.07	361.95	53.08	361.71	59.58	360.24	60.5	360
66.26	358.56	68.19	358	79.86	356.07	80.2	356	108.17	354.1
116.73	353.3	136.32	353.03	148.67	352.95	152.4	351.89	153.8	351.49
156.31	351.59	159.04	352.43	164.74	351.94	168.76	349.2	174.15	349.34
176.14	352.31	183.78	352.86	185.84	353.01	202.53	353.09	228.12	353.77
242.58	354	243.08	354.08	268.03	355.47	271.1	355.65	276.88	356
279.61	356.42	290.09	358	293.7	358.35	295.16	358.52	296.99	358.71
299.04	359.06	299.15	359.06	301.56	358.95	310.74	358.55	311.53	358.57
326.08	360	343.08	362	362.94	363.92	363.84	364	373.86	364.98
379.95	365.59								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	164.74	.04	176.14	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
164.74	176.14	153.6	154.59	153.42	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2331

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.49	6.68	364.41	7.02	364.4	14.19	364.07	14.82	364.03
15.07	364	20.81	363.68	24.25	363.45	29.07	363.13	39.92	362.46
45.16	362.09	46.53	362	47.28	361.49	49.54	360	52.15	358.3
52.62	358	55.48	356.39	56.22	356	57.41	355.85	63.81	354.98
71.45	353.58	95.41	352.52	117.31	352.1	137.93	352.42	139.13	352.39

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  143.89  352.26   149.2  348.51  154.15   348.1  159.57  348.42  163.74  351.17
  170.01  352.12  172.55   352.5   187.7  353.21  192.26  353.51  195.07     354
  218.88  355.98  218.91  355.98   219.4  355.99  219.65     356  241.82  357.49
  246.88  357.84  249.17     358  261.51  359.33   265.1  359.63  265.64  359.68
  269.31     360  281.07  361.43  286.16     362  288.44  362.36  288.85  362.43
  290.52  362.72  297.61     364  300.67  364.91  304.17     366  307.87  366.43
     309   366.5  310.22  366.57  314.29  366.95  316.04   367.1  316.75  367.15
  319.13  367.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  143.89     .04  163.74    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        143.89  163.74           179.37   177.6  175.87             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2153

INPUT
Description:
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.32    3.92  364.56    4.01  364.56     8.3   364.3   12.46  364.04
   12.76  364.02   13.08     364   13.25  363.87   13.45  363.73   16.05     362
   16.68  361.53   18.91     360   20.77  358.61    21.6     358   21.89  357.75
   24.09     356   30.84  354.47   33.11     354   52.92  352.32   74.07  351.81
  101.65  351.28  120.22  351.43   120.5  351.43  127.63  349.88  130.12  350.05
  131.34  346.86     142  346.39  144.29  352.45  150.56  352.61  153.23  352.68
  168.08  353.97  172.88   354.8  182.71     356  183.66  356.09  183.87  356.11
  184.85  356.22  185.07  356.24  187.04  356.46  193.55  357.16  200.75     358
  212.41  359.89  213.06     360  217.64  360.89  223.61     362  228.58  363.12
  232.74     364  234.97  364.51  241.92     366  244.79  366.58  251.21     368
   256.5  369.43   258.4     370   259.7  370.42  264.45     372  269.94  372.39
  273.44  372.63

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  130.12     .04  144.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.12  144.29           160.15  158.75  157.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1994

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.16    1.03  359.27    6.73  358.67   10.37  358.29   12.97     358
   17.14  356.63      19     356   24.53  354.42   26.07     354   48.12   352.4
   57.17  351.28   75.62  351.28   92.39  351.14  101.12   350.8  106.95  350.57
  106.96  350.57  116.46  350.19   118.2  346.45  127.95  346.81  131.85  351.13
  136.96  351.29  150.75  351.72  165.28  352.31  177.37  352.98  196.01     354
  199.93  354.72  201.85  354.82  202.83  354.87  204.78  354.98  212.96  355.47
  214.68   355.8  216.21  355.53  218.47   355.7  222.42     356  236.41  357.33
  243.08     358  253.87   359.4  258.55     360  260.61  360.31  272.91     362
  275.22  362.56  277.16  363.07  277.31  363.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  116.46     .04  131.85    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        116.46  131.85           108.1  106.05  103.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1888
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INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354   68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        129.91  142.97            61.13   58.24    54.2             .3       .5

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 1850

INPUT
Description: Private Bridge
Distance from Upstream XS =    18.5
Deck/Roadway Width        =      16
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       8
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    3.66  359.97           81.5  359.87  357.87   101.7 360.452 358.452
   126.6 360.865 358.865     153 360.835 358.835   175.1 360.491 358.491
     201 360.491 358.491  320.31   359.1

Upstream Bridge Cross Section Data
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354   68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        129.91  142.97             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  359.24           91.4 359.823 357.823   114.8 360.523 358.523
   139.8  360.92  358.92     165 360.892 358.892   189.6 360.465 358.465
   211.7 359.771 357.771

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.24    2.43  358.98    4.52  358.77    8.77  358.35   11.48  358.04
   11.83     358   17.63  357.39   27.59  356.34   30.83     356    31.3  355.95
   50.96     354   66.68  349.58   82.55  349.15    94.6  350.53  103.53  350.29
  110.77  348.95  112.07  348.71  119.64  348.74   131.1  348.28  134.38  346.61
  143.36  346.68  149.09  351.02  155.33  350.92  161.76  350.82  177.15  351.12
  196.32  351.55  209.07  352.05  209.56  359.76  230.29  360.75  314.46  356.32
     319  356.67  323.81  357.07  332.17  357.73  334.02  357.88  335.57     358
  340.94  358.54

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   131.1     .04  149.09    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         131.1  149.09             .3       .5

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)               350.45    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               350.23    E.G. Elev (ft)              350.39        350.28
  Q Total (cfs)               174.00    W.S. Elev (ft)              350.14        350.18
  Q Bridge (cfs)              174.00    Crit W.S. (ft)              348.68        348.69
  Q Weir (cfs)                          Max Chl Dpth (ft)             4.41          3.57
  Weir Sta Lft (ft)                     Vel Total (ft/s)              3.27          2.06
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            53.27         84.66
  Weir Submerg                          Froude # Chl                  0.41          0.24
  Weir Max Depth (ft)                   Specif Force (cu ft)         97.06        118.28
  Min El Weir Flow (ft)       359.11    Hydr Depth (ft)               1.27          1.90
  Min El Prs (ft)             358.87    W.P. Total (ft)              44.38         46.26
  Delta EG (ft)                 0.22    Conv. Total (cfs)           3004.4        4317.7
  Delta WS (ft)                 0.08    Top Width (ft)              41.89         44.46
  BR Open Area (sq ft)        994.03    Frctn Loss (ft)               0.04          0.04
  BR Open Vel (ft/s)            3.27    C & E Loss (ft)               0.07          0.01
  BR Sluice Coef                        Shear Total (lb/sq ft)        0.25          0.19
  BR Sel Method          Energy only    Power Total (lb/ft s)         0.82          0.38


Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or
greater than
        1.4.  This may indicate the need for additional cross sections.

BRIDGE OUTPUT  Profile #2-YR

  E.G. US. (ft)               350.90    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               350.66    E.G. Elev (ft)              350.84        350.73
  Q Total (cfs)               227.00    W.S. Elev (ft)              350.57        350.60
  Q Bridge (cfs)              227.00    Crit W.S. (ft)              349.11        349.08
  Q Weir (cfs)                          Max Chl Dpth (ft)             4.84          3.99
  Weir Sta Lft (ft)                     Vel Total (ft/s)              3.05          2.13
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            74.48        106.37
  Weir Submerg                          Froude # Chl                  0.41          0.25
  Weir Max Depth (ft)                   Specif Force (cu ft)        131.27        164.37
  Min El Weir Flow (ft)       359.11    Hydr Depth (ft)               1.29          1.85
  Min El Prs (ft)             358.87    W.P. Total (ft)              60.04         60.06
  Delta EG (ft)                 0.23    Conv. Total (cfs)           3959.0        5402.4
  Delta WS (ft)                 0.08    Top Width (ft)              57.52         57.62
  BR Open Area (sq ft)        994.03    Frctn Loss (ft)               0.04          0.04
  BR Open Vel (ft/s)            3.05    C & E Loss (ft)               0.07          0.02
  BR Sluice Coef                        Shear Total (lb/sq ft)        0.25          0.20
  BR Sel Method          Energy only    Power Total (lb/ft s)         0.78          0.42
```

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	352.51	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	352.20	E.G. Elev (ft)	352.44	352.33
Q Total (cfs)	609.00	W.S. Elev (ft)	352.10	352.13
Q Bridge (cfs)	609.00	Crit W.S. (ft)	351.44	350.29
Q Weir (cfs)		Max Chl Dpth (ft)	6.37	5.52
Weir Sta Lft (ft)		Vel Total (ft/s)	2.80	2.46
Weir Sta Rgt (ft)		Flow Area (sq ft)	217.49	247.17
Weir Submerg		Froude # Chl	0.32	0.27
Weir Max Depth (ft)		Specif Force (cu ft)	392.03	464.18
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.85	2.09
Min El Prs (ft)	358.87	W.P. Total (ft)	120.95	122.35
Delta EG (ft)	0.26	Conv. Total (cfs)	10344.1	13208.1
Delta WS (ft)	0.08	Top Width (ft)	117.60	118.06
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.80	C & E Loss (ft)	0.07	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	0.39	0.27
BR Sel Method	Energy only	Power Total (lb/ft s)	1.09	0.66

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	353.75	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	353.42	E.G. Elev (ft)	353.68	353.59
Q Total (cfs)	1166.00	W.S. Elev (ft)	353.31	353.30
Q Bridge (cfs)	1166.00	Crit W.S. (ft)	352.36	351.76
Q Weir (cfs)		Max Chl Dpth (ft)	7.58	6.69
Weir Sta Lft (ft)		Vel Total (ft/s)	3.21	3.02
Weir Sta Rgt (ft)		Flow Area (sq ft)	362.89	386.37
Weir Submerg		Froude # Chl	0.31	0.29
Weir Max Depth (ft)		Specif Force (cu ft)	821.01	916.87
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.02	3.27
Min El Prs (ft)	358.87	W.P. Total (ft)	125.83	124.71
Delta EG (ft)	0.27	Conv. Total (cfs)	19682.5	23080.5
Delta WS (ft)	0.10	Top Width (ft)	120.22	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	3.21	C & E Loss (ft)	0.04	0.06
BR Sluice Coef		Shear Total (lb/sq ft)	0.63	0.49
BR Sel Method	Energy only	Power Total (lb/ft s)	2.03	1.49

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	354.39	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.04	E.G. Elev (ft)	354.30	354.22
Q Total (cfs)	1529.00	W.S. Elev (ft)	353.89	353.87
Q Bridge (cfs)	1529.00	Crit W.S. (ft)	352.78	352.29
Q Weir (cfs)		Max Chl Dpth (ft)	8.16	7.26
Weir Sta Lft (ft)		Vel Total (ft/s)	3.54	3.37
Weir Sta Rgt (ft)		Flow Area (sq ft)	432.51	453.43
Weir Submerg		Froude # Chl	0.32	0.31
Weir Max Depth (ft)		Specif Force (cu ft)	1112.53	1217.53
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.60	3.84
Min El Prs (ft)	358.87	W.P. Total (ft)	126.99	125.85
Delta EG (ft)	0.30	Conv. Total (cfs)	25135.7	28755.1
Delta WS (ft)	0.14	Top Width (ft)	120.13	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	3.54	C & E Loss (ft)	0.03	0.08
BR Sluice Coef		Shear Total (lb/sq ft)	0.79	0.64
BR Sel Method	Energy only	Power Total (lb/ft s)	2.78	2.14

BRIDGE OUTPUT Profile #200-YR

E.G. US. (ft)	355.11	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.75	E.G. Elev (ft)	355.01	354.93
Q Total (cfs)	1999.00	W.S. Elev (ft)	354.54	354.51
Q Bridge (cfs)	1999.00	Crit W.S. (ft)	353.21	352.76
Q Weir (cfs)		Max Chl Dpth (ft)	8.81	7.90
Weir Sta Lft (ft)		Vel Total (ft/s)	3.92	3.78
Weir Sta Rgt (ft)		Flow Area (sq ft)	510.55	528.72
Weir Submerg		Froude # Chl	0.33	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	1506.86	1620.56
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	4.25	4.48
Min El Prs (ft)	358.87	W.P. Total (ft)	128.29	127.13
Delta EG (ft)	0.33	Conv. Total (cfs)	31901.7	35755.5
Delta WS (ft)	0.21	Top Width (ft)	120.04	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.06	0.06

BR Open Vel (ft/s)	3.92	C & E Loss (ft)	0.02	0.09
BR Sluice Coef		Shear Total (lb/sq ft)	0.98	0.81
BR Sel Method	Energy only	Power Total (lb/ft s)	3.82	3.07

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1830

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.1	149.09	183.1	189.46	194.94	.3	.5

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1641

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.1	4.25	358	4.42	357.95	4.44	357.94	5.13	357.91
5.87	357.89	19.69	357.39	35.1	356.79	40.55	356.56	48.51	356.22
50.1	356.16	53.65	356	83.2	353.06	108.43	350.69	126.88	349.28
127.65	348.68	128.6	347.92	138.1	348.36	140.07	345.19	146.51	345.53
151.14	349.6	158.59	349.89	158.6	349.89	162.23	350.02	178.14	350
203.35	350.65	232.7	352	242.28	353.59	244.74	354	245.26	354.15
247.65	354.81	250.51	355.6	252.04	356	253.98	356.59	258.69	358
258.77	358.02	262.44	359.03	266	360	266.2	360.05	268.14	360.44
269.28	360.66	271.48	361.07	272.68	361.28	273.3	361.39		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	138.1	.04	151.14	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.1	151.14	176.17	177.29	178.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1463

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	356.46	5.61	356.33	11.71	356.19	16.33	356.06	18.18	356.02
18.32	356.02	18.54	356	21.8	355.67	22.14	355.65	22.36	355.64
22.69	355.6	22.89	355.58	27.15	355.19	29.24	355.09	30.76	355.02
40.4	354.87	40.86	354.85	41.76	354.8	42.75	354.73	52.82	354
69.61	352.87	75.51	352.42	79.43	352.14	79.72	352.12	81.65	352
84.43	351.86	90.72	351.56	92.09	351.48	94.79	351.34	97.19	351.19
107.32	350.52	111.7	350.26	115.41	350	138.29	349.1	159.11	349.1
178.46	349.47	180.13	349.17	185.3	348.24	187.99	347.08	189.19	343.45
196.87	343.35	197.98	346.06	206.54	348.53	210.52	348.75	210.53	348.75
221.24	349.34	234.53	349.78	266.44	352.56	278.62	358	283.38	359.43
285.38	360	287	360.55	290.28	361.58	291.64	362	294.58	362.89

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  295.91  363.28  296.57  363.47  298.25     364   302.9  365.77  303.51     366
  309.02  367.06  310.22  367.29  310.97  367.42  314.74     368  315.87  368.18
  323.73  369.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  180.13     .04  206.54    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        180.13  206.54           172.51  172.28  171.74             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1291

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  363.49     2.9  363.09   10.68  362.14   11.86     362   19.26  360.55
   22.08     360   26.38  358.97   30.59     358    34.4  357.21   38.91     356
   43.26  354.82   46.23  354.17   47.03     354   49.14  353.62   58.14     352
   66.85  350.97    70.1  350.58   71.43  350.42   75.07     350  108.53  348.38
  120.68  348.74  128.48  348.81  133.87  347.09   136.5  346.81  137.71   345.2
  141.95  344.89  151.53  345.15  155.49  348.28  157.84   348.3  161.16  349.47
  178.09  349.55  199.34  350.93  214.63   351.7   228.4  351.81  242.53  351.32
  264.66  350.52  286.44  349.15  310.41  348.72  338.21     349  371.72  348.77
   400.9  348.48   416.8  348.59  427.74  348.67  430.58  344.68   431.8  344.26
  436.65  344.85  441.26  344.51  442.29  347.58  447.46  349.08  448.01  349.24
  458.85  350.67   471.3  352.75  481.29  354.33  491.23  357.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  427.74     .04  447.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        427.74  447.46            167.7  167.44  166.86             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1124

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  365.04    4.51  364.72    9.16  364.27    9.25  364.27   12.12     364
    15.5  363.29   21.22     362   23.39  361.54   30.93     360   35.95  358.97
   39.85  358.17   50.58     356   54.08   355.4   62.03     354   62.65  353.83
   63.34  353.65   73.01   352.9   74.16  352.78   80.64     352   83.69  351.62
   99.16     350   114.6  348.69  124.02  348.63   131.1  347.62  149.71  348.01
  162.72  347.51  168.53  347.49  170.35  344.49  173.71  344.74  179.87  343.88
  182.52  344.16  184.05  346.89  186.24     347  189.68  348.23  195.55  348.19
     207   347.6  214.71  347.82  233.96  347.66  252.64   348.2  276.32   348.2
  304.29  347.84  332.45  347.91  346.81  348.51  347.97   348.3     348   348.3
  350.12  347.92  353.36   347.9  355.26  348.34   360.2  343.58   367.1  344.05
  375.37  349.26  378.03   349.7  378.05   349.7  380.33  350.08  392.73  351.02
  398.58  351.56  403.03  351.81  420.09     354  435.53     356  439.63  356.61
  442.77  357.02  450.32     358  455.33  358.77   457.5  359.06  460.77  359.47
  461.87  359.63  462.18  359.68   465.1     360  473.65  361.11  476.71  361.53
  479.97     362  480.72  362.12  480.94  362.16  483.56  362.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  355.26     .04  375.37    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        355.26  375.37           134.05  129.91   125.5             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     8.7    60.7     360

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 994

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.1	9.62	358	14.71	356.95	19.8	356	30.42	354.45
33.38	354	36.49	353.7	54.6	352	57.99	351.76	59.66	351.64
70.88	350.84	72.94	350.7	82.85	350	114.72	348.11	135.81	347.8
150.43	347.49	170.48	346.43	171.74	343.41	176.87	342.99	186.86	344.33
188.91	347.54	212.62	347.3	226.74	347	231.31	347.32	247.53	347.69
256.13	347.8	270.71	347.72	281.14	348.11	284.5	347.5	286.04	347.21
292.04	347.03	296.33	343.73	302.06	343.28	306.33	342.85	309.85	346.99
314.78	348.42	315.81	348.64	315.83	348.64	320.17	349.59	333.26	350.57
351	352.36	364.37	354	373	355.3	375.39	355.67	377.77	356
383.23	356.87	390.35	358	393.92	358.56	397.2	359.05	403.45	360
407.85	360.84	413.86	362	417.04	362.66				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	281.14	.04	315.83	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
281.14	315.83	82.93	82.66	81.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 911

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	2.24	358.56	3.51	358.32	5.22	358	12.31	356.66
15.03	356.09	15.46	356	22.75	354.09	23.08	354	23.55	353.96
24.83	353.84	24.92	353.83	25.43	353.83	29.76	353.58	30	353.57
30.58	353.5	31.25	353.48	33.98	353.69	35.3	353.7	36.97	353.98
37.02	353.98	37.13	354	37.9	354.04	38.06	354.05	38.27	354.04
38.32	354.04	38.42	354.03	38.82	354	38.99	353.95	39.2	353.82
44.56	353.53	50.12	353.05	56.89	352.42	59.95	352.14	61.41	352
82.47	350.57	91.08	350	100.51	349.7	117.56	348.31	130.96	347.87
157.71	347.03	178.22	347.23	181.99	344.27	189.47	343.55	196.66	344.12
201.78	347.5	223.44	347.06	243.05	346.93	252.46	346.76	252.6	346.85
292.54	347.06	306.34	347.38	312.43	347.51	317.18	343.33	321.46	342.92
325.5	343.21	332.27	348.29	337.05	349	337.06	349	351.26	351.11
381.21	355.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	312.43	.04	332.27	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
312.43	332.27	138.48	148.66	157.22	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 762

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.13	2.35	357.03	6.48	356.67	7.69	356.61	9.39	356.51
14.41	356	19.83	355.44	21	355.32	22.74	355.12	32.28	354
34.37	353.8	35.36	353.71	51.57	352.14	52.81	352.02	53.01	352
61.67	351.41	65.26	351.17	67.97	350.99	73.71	350.62	76.99	350.42
81.35	350.17	81.78	350.14	84.01	350.03	84.52	350	108.7	348.46
145.52	346.99	169.46	347.05	186.24	347.42	197.19	345.22	199.28	343.68
205.18	343.3	208.29	343.86	210.89	346.07	228.95	347.18	235.77	347.3
240.55	347.28	244.65	347.26	244.66	347.26	252.8	347.23	257.6	343.09
259.66	342.54	263.98	342.94	271.9	344.77	276.21	346.65	276.24	346.66
276.97	346.98	298.22	347.67	328.56	347.99	360.33	351.01	370.76	351.97
371.89	352	373.6	352.14	375.07	352.27	376.35	352.4	384.34	353.82
384.65	353.87	384.83	353.9	384.94	353.92	385.3	354	392	355.62

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  393.35     356  395.32   356.4  403.54     358  408.28  358.51  410.83  358.82
  411.55  358.82  412.84   358.8  416.14  358.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   252.8     .04  276.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         252.8  276.97           101.69  104.14  104.96             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   366.8   407.4     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 658

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  358.95    2.26  358.79     5.3  358.55    9.28   358.2   11.48     358
   14.26  357.65   16.66  357.36   20.41  356.87   26.22  356.16   35.44  355.02
   41.74  354.15   42.79     354   59.31   352.1    59.6  352.07   59.76  352.05
    60.3     352   70.49  351.39    76.4  351.02   86.06  350.44   92.55     350
  118.81     348  200.75  346.51  222.09  346.42  240.59  346.42   245.1  346.43
  248.95  343.16  255.63  340.34   262.8   340.2  267.31  342.59  270.68  343.91
  277.89  346.74  301.79  346.57  332.03  346.36  388.47  347.88  391.63  347.92
  394.29  347.92  394.49  347.91  400.05     348  401.61  348.21  402.93   348.4
  404.42  348.65   405.7  348.87  406.58  349.04  407.19  349.17  412.03     350
  415.92  350.98  417.72  351.13  418.47  351.21  420.03  351.39  422.64  351.75
  422.86  351.79  424.26     352  426.31  352.71  429.22  353.83  429.43  353.91
  429.85  354.09  434.45     356  442.51  357.75  442.83  357.83  443.54     358
  450.24  358.39  464.98  359.29  465.18  359.32  466.53  359.48  470.64     360
  471.72  360.06  477.88   360.4  481.52  360.61  490.37  361.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   245.1     .04  277.89    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         245.1  277.89           129.48  132.55  137.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 526

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  357.29    9.33  356.07    9.88     356   15.36  355.41   18.93  355.03
      21  354.81   28.17     354   30.46  353.79    34.1  353.48   42.62  352.81
   46.05  352.53    47.8   352.4   49.22  352.29   53.02     352   59.04  351.42
   61.87  351.16   67.63  350.62   73.95     350   93.12  348.67  121.73  346.39
  157.75  346.18  186.76  345.79  188.34  345.18  188.36  345.17  195.28  342.48
  203.56  341.63  212.23  342.05  213.87   346.6  218.56  346.44  218.57  346.44
  237.47   345.8  275.28  345.64  307.64  346.39  309.73  346.39   311.5  346.41
  313.11  346.41  314.75   346.4  329.39  346.38  337.83  346.31  340.98  346.28
  350.53  346.19  372.03     346  378.64  346.57  382.54   346.9  390.22  347.56
  395.28     348  402.02  349.12  407.12     350  408.46  350.19  409.19  350.29
  409.96  350.41  415.16  351.21  417.91  351.63  420.21     352  425.22  352.92
  430.26     354  432.81  354.65  434.33     355  437.88  355.74  438.42  355.87
  439.17     356  441.01  356.24   446.9  356.96  448.95  357.26  452.86  357.84
  453.18  357.89  453.89     358  458.07  358.55  459.62  358.79  462.41  359.19
  467.23     360  483.54  360.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.76     .04  213.87    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.76  213.87           143.66  145.78  147.57             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
```

443 476.3 360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 380

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.67	.48	366.64	10.41	366	17.37	364.74	21.25	364
25.91	363.14	31.6	362	37.28	360.91	41.95	360	46.91	359.56
63.27	358	71.54	357.11	76.74	356.56	81.96	356	84.51	355.63
95.36	354	101.45	352.61	104.07	352	106.08	351.38	110.9	350
116.69	348.33	117.74	348	119.59	347.7	121.4	347.41	126.04	346.65
130	346	133.26	346.1	135.45	346.16	138.15	346.24	146.78	346.47
149.42	346.45	150.34	346.44	151.1	346.43	151.57	346.42	155.44	346.29
164.04	345.66	193.28	345.53	212.79	346.39	212.81	346.39	215.37	346.51
219.06	341.92	227.8	342.05	238.17	343.21	243.49	346.6	243.7	346.6
243.72	346.59	260.79	346.48	291.92	346.27	304.59	346	319.84	347.43
322.97	347.65	328.49	348	330.64	348.16	332.41	348.38	334.7	348.61
337.77	348.94	346.14	350	350.1	350.95	354.1	352	360.75	353.66
362.11	354	365.83	354.84	369.98	355.77	370.39	355.85	371.06	356
372.08	356.17	382.09	358	386.28	358.59	390.61	359.14		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.37	.04	243.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.37	243.7	235.8	234.15	232.25	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10	44.6	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 146

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	6.37	358.83	15.88	358.07	16.47	358.02	16.84	358
21.14	357.01	25.77	356	28.06	355.5	30.16	355.06	34.73	354.18
35.2	354.08	35.66	354	37.68	353.72	38.1	353.66	41.6	353.18
44.05	352.85	45.88	352.61	50.58	352.01	50.71	352	52.8	351.88
60.34	351.5	61.05	351.44	66.3	351.17	67.3	351.09	70.18	350.94
72.76	350.72	76.24	350.54	81.27	350	100.43	348.85	105.06	348.54
115.51	348	138.29	346.9	181.73	345.23	210.07	344.41	210.09	344.41
215.13	344.26	220.35	341.19	225.41	340.73	231.22	340.96	236.01	344.28
240.33	344.79	253.16	346.33	258.95	349.49	260.11	349.59	263.96	350.56
267.35	352	269.7	353.13	271.51	354	273.55	355.07	275.21	356
277.09	356.89	279.29	358	283.62	359.32	285.5	359.78	286.47	360
291.06	360.4	294.96	360.73	299.25	361.08	301.38	361.31	304.13	361.54
306.53	361.84	306.74	361.86	307.86	362	314.98	363.37	318.1	364
325.64	365.64	327.27	366	335.18	367.64	336.93	368	339.58	368.18
343.85	368.49	346.34	368.31						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.13	.04	236.01	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.13	236.01	88.09	82.88	77.62	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
15.2	56.5	365	296.2	338	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 63

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	354	7.34	353.26	12.41	352.73	16.79	352.29	19.4	352
27.1	350.79	31.84	350	38.59	349.24	50.74	348	57.78	347.37
58.67	347.29	60.21	347.18	62.82	346.94	66.66	346.68	68.29	346.54
76.91	346	79.38	345.88	79.63	345.86	80	345.83	80.68	345.78
83.85	345.58	87.55	345.35	103.02	344	108.36	342.62	114.01	342
118.01	340	138.02	340	142.02	342	147.2	343.25	150.03	344
151.66	344.32	153.16	344.61	153.93	344.74	155.1	344.92	156.66	345.2
158.34	345.42	159.11	345.56	160.97	345.74	161.25	345.79	163.2	345.94
163.62	346	170.72	346	174.59	346.47	175.77	346.56	176.48	346.66
177.66	346.84	178.56	346.94	180.57	347.23	181.89	347.4	182.5	347.49
185.96	348	187.92	348.58	193.03	350	195.4	350.82	198.31	352
201.23	353.21	203.77	354	207.9	355.67	208.87	356	212.01	357.21
214.25	358	216.21	358.46	223.24	360	225.85	360.29	227.5	360.52
231.62	361.04	238.04	362	248.29	363.79	249.46	364	253.46	364.5
253.68	364.53								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	103.02	.04	150.03	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
103.02	150.03	0	0	.1	.3

SUMMARY OF MANNING'S N VALUES

River:Plumtree

Reach	River Sta.	n1	n2	n3	n4	n5
Plumtree	10286	.085	.055	.04	.055	.085
Plumtree	10044	.085	.055	.04	.055	.085
Plumtree	9814	.085	.055	.04	.055	.085
Plumtree	9762	.085	.055	.04	.055	.085
Plumtree	9732	.055	.04	.055		
Plumtree	9650	Culvert				
Plumtree	9589	.075	.04	.075		
Plumtree	9499	.075	.04	.075		
Plumtree	9398	.085	.04	.085		
Plumtree	9301	.085	.04	.085		
Plumtree	9196	.085	.04	.085		
Plumtree	8987	.085	.04	.085		
Plumtree	8753	.065	.04	.085		
Plumtree	8579	.075	.04	.085		
Plumtree	8374	.075	.04	.085		
Plumtree	8229	.075	.04	.085		
Plumtree	8094	.075	.04	.085		
Plumtree	7954	.075	.04	.085		
Plumtree	7800	.075	.04	.085		
Plumtree	7548	.075	.04	.085		
Plumtree	7367	.075	.04	.075		
Plumtree	7216	.075	.04	.075		
Plumtree	7030	.075	.04	.075		
Plumtree	6893	.075	.04	.075		
Plumtree	6766	.075	.04	.075		
Plumtree	6663	.075	.04	.075		
Plumtree	6568	.075	.04	.075		
Plumtree	6454	.075	.04	.075		
Plumtree	6350	.075	.04	.075		
Plumtree	6296	.075	.04	.075		
Plumtree	6250	Culvert				
Plumtree	6197	.075	.04	.075		
Plumtree	6122	.075	.04	.075		
Plumtree	6028	.075	.04	.075		
Plumtree	5926	.075	.04	.075		
Plumtree	5824	.075	.04	.075		
Plumtree	5745	.075	.04	.075		
Plumtree	5711	.075	.04	.075		
Plumtree	5650	Culvert				
Plumtree	5614	.075	.04	.075		
Plumtree	5560	.075	.04	.075		
Plumtree	5510	.075	.04	.075		
Plumtree	5500	Bridge				
Plumtree	5474	.075	.04	.075		

Plumtree	5419	.075	.04	.075
Plumtree	5323	.075	.04	.075
Plumtree	5209	.075	.04	.075
Plumtree	5107	.075	.04	.075
Plumtree	5040	.075	.04	.075
Plumtree	5000	Culvert		
Plumtree	4932	.075	.04	.075
Plumtree	4845	.075	.04	.075
Plumtree	4745	.075	.04	.075
Plumtree	4636	.075	.04	.075
Plumtree	4550	.075	.04	.075
Plumtree	4400	Culvert		
Plumtree	4344	.075	.04	.075
Plumtree	4289	.075	.04	.075
Plumtree	4185	.075	.04	.075
Plumtree	4033	.075	.04	.075
Plumtree	3930	.075	.04	.075
Plumtree	3816	.075	.04	.075
Plumtree	3688	.075	.04	.075
Plumtree	3550	.075	.04	.075
Plumtree	3428	.075	.04	.075
Plumtree	3296	.075	.04	.075
Plumtree	3179	.075	.04	.075
Plumtree	3077	.075	.04	.075
Plumtree	2978	.075	.04	.075
Plumtree	2917	.075	.04	.075
Plumtree	2900	Culvert		
Plumtree	2827	.075	.04	.075
Plumtree	2759	.075	.04	.075
Plumtree	2589	.075	.04	.075
Plumtree	2485	.075	.04	.075
Plumtree	2331	.075	.04	.075
Plumtree	2153	.075	.04	.075
Plumtree	1994	.075	.04	.075
Plumtree	1888	.075	.04	.075
Plumtree	1850	Bridge		
Plumtree	1830	.075	.04	.075
Plumtree	1641	.075	.04	.075
Plumtree	1463	.075	.04	.075
Plumtree	1291	.075	.04	.075
Plumtree	1124	.075	.04	.075
Plumtree	994	.075	.04	.075
Plumtree	911	.075	.04	.075
Plumtree	762	.075	.04	.075
Plumtree	658	.075	.04	.075
Plumtree	526	.075	.04	.075
Plumtree	380	.075	.04	.075
Plumtree	146	.075	.04	.075
Plumtree	63	.075	.04	.075

SUMMARY OF REACH LENGTHS

River: Plumtree

Reach	River Sta.	Left	Channel	Right
Plumtree	10286	240.46	241.25	237.2
Plumtree	10044	233.9	230.57	222.97
Plumtree	9814	52.2	51.56	50.88
Plumtree	9762	32.64	30.09	27.57
Plumtree	9732	145.71	143.47	141.55
Plumtree	9650	Culvert		
Plumtree	9589	74.95	89.37	103.36
Plumtree	9499	98.65	101.8	104.92
Plumtree	9398	97.24	96.47	94.54
Plumtree	9301	109.84	105	100.42
Plumtree	9196	197.07	208.89	195.59
Plumtree	8987	233.38	233.77	226.61
Plumtree	8753	178.41	174.76	168.62
Plumtree	8579	198.29	204.23	206.04
Plumtree	8374	144.9	145.45	146.03
Plumtree	8229	135.27	135.16	134.66
Plumtree	8094	138.21	139.81	140.01
Plumtree	7954	155.28	153.64	152.99
Plumtree	7800	252.37	252.82	252.55
Plumtree	7548	174.12	180.41	186.79

Plumtree	7367	143.37	150.84	157.8
Plumtree	7216	190.28	186.42	181.46
Plumtree	7030	140.13	137.19	133.92
Plumtree	6893	124.46	126.53	128.02
Plumtree	6766	103.31	103.53	104.46
Plumtree	6663	90.58	94.53	97.72
Plumtree	6568	112.95	114.27	115.74
Plumtree	6454	102.69	103.78	104.74
Plumtree	6350	52.33	53.78	55.24
Plumtree	6296	98.47	99.02	99.58
Plumtree	6250	Culvert		
Plumtree	6197	75.78	74.81	73.83
Plumtree	6122	98.18	94.21	91.92
Plumtree	6028	100.93	101.91	101.19
Plumtree	5926	102.11	102.54	102.93
Plumtree	5824	75.62	79.21	82.75
Plumtree	5745	34.07	34.02	34.04
Plumtree	5711	96.24	96.18	98.71
Plumtree	5650	Culvert		
Plumtree	5614	60.47	54.67	45.26
Plumtree	5560	56.62	49.74	41.3
Plumtree	5510	36.56	36.42	38.18
Plumtree	5500	Bridge		
Plumtree	5474	54.4	54.86	54.94
Plumtree	5419	93.04	95.36	97.65
Plumtree	5323	116.69	114.31	111.9
Plumtree	5209	111.42	101.59	91.47
Plumtree	5107	67.29	67.07	66.86
Plumtree	5040	104.82	108.2	107.53
Plumtree	5000	Culvert		
Plumtree	4932	86.54	87.15	87.5
Plumtree	4845	89.54	100.49	110.66
Plumtree	4745	111.08	108.67	106.25
Plumtree	4636	90.09	85.72	81.01
Plumtree	4550	205.67	206.54	206.28
Plumtree	4400	Culvert		
Plumtree	4344	54.24	54.2	54.21
Plumtree	4289	104.83	104.42	103.52
Plumtree	4185	151.73	151.97	152.24
Plumtree	4033	105.3	103.27	101.24
Plumtree	3930	112.01	113.72	114.59
Plumtree	3816	128.5	127.87	127.21
Plumtree	3688	137.67	137.99	138.3
Plumtree	3550	121.58	121.96	122.09
Plumtree	3428	131.85	132.32	132.95
Plumtree	3296	117.57	116.94	115.99
Plumtree	3179	101.1	102.24	103.14
Plumtree	3077	99.64	98.98	98.39
Plumtree	2978	61.85	60.74	60.21
Plumtree	2917	89.63	90.26	89.98
Plumtree	2900	Culvert		
Plumtree	2827	59.3	67.61	75.81
Plumtree	2759	166.79	169.71	170.1
Plumtree	2589	102.11	104.17	106.57
Plumtree	2485	153.6	154.59	153.42
Plumtree	2331	179.37	177.6	175.87
Plumtree	2153	160.15	158.75	157.04
Plumtree	1994	108.1	106.05	103.75
Plumtree	1888	61.13	58.24	54.2
Plumtree	1850	Bridge		
Plumtree	1830	183.1	189.46	194.94
Plumtree	1641	176.17	177.29	178.52
Plumtree	1463	172.51	172.28	171.74
Plumtree	1291	167.7	167.44	166.86
Plumtree	1124	134.05	129.91	125.5
Plumtree	994	82.93	82.66	81.8
Plumtree	911	138.48	148.66	157.22
Plumtree	762	101.69	104.14	104.96
Plumtree	658	129.48	132.55	137.52
Plumtree	526	143.66	145.78	147.57
Plumtree	380	235.8	234.15	232.25
Plumtree	146	88.09	82.88	77.62
Plumtree	63	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Plumtree

Reach	River Sta.	Contr.	Expan.
Plumtree	10286	.1	.3
Plumtree	10044	.1	.3
Plumtree	9814	.1	.3
Plumtree	9762	.1	.3
Plumtree	9732	.3	.5
Plumtree	9650	Culvert	
Plumtree	9589	.3	.5
Plumtree	9499	.1	.3
Plumtree	9398	.1	.3
Plumtree	9301	.1	.3
Plumtree	9196	.1	.3
Plumtree	8987	.1	.3
Plumtree	8753	.1	.3
Plumtree	8579	.1	.3
Plumtree	8374	.1	.3
Plumtree	8229	.1	.3
Plumtree	8094	.1	.3
Plumtree	7954	.1	.3
Plumtree	7800	.1	.3
Plumtree	7548	.1	.3
Plumtree	7367	.1	.3
Plumtree	7216	.1	.3
Plumtree	7030	.1	.3
Plumtree	6893	.1	.3
Plumtree	6766	.1	.3
Plumtree	6663	.1	.3
Plumtree	6568	.1	.3
Plumtree	6454	.1	.3
Plumtree	6350	.1	.3
Plumtree	6296	.3	.5
Plumtree	6250	Culvert	
Plumtree	6197	.3	.5
Plumtree	6122	.1	.3
Plumtree	6028	.1	.3
Plumtree	5926	.1	.3
Plumtree	5824	.1	.3
Plumtree	5745	.1	.3
Plumtree	5711	.3	.5
Plumtree	5650	Culvert	
Plumtree	5614	.3	.5
Plumtree	5560	.1	.3
Plumtree	5510	.3	.5
Plumtree	5500	Bridge	
Plumtree	5474	.3	.5
Plumtree	5419	.1	.3
Plumtree	5323	.1	.3
Plumtree	5209	.1	.3
Plumtree	5107	.1	.3
Plumtree	5040	.3	.5
Plumtree	5000	Culvert	
Plumtree	4932	.3	.5
Plumtree	4845	.1	.3
Plumtree	4745	.1	.3
Plumtree	4636	.1	.3
Plumtree	4550	.3	.5
Plumtree	4400	Culvert	
Plumtree	4344	.3	.5
Plumtree	4289	.1	.3
Plumtree	4185	.1	.3
Plumtree	4033	.1	.3
Plumtree	3930	.1	.3
Plumtree	3816	.1	.3
Plumtree	3688	.1	.3
Plumtree	3550	.1	.3
Plumtree	3428	.1	.3
Plumtree	3296	.1	.3
Plumtree	3179	.1	.3
Plumtree	3077	.1	.3
Plumtree	2978	.1	.3
Plumtree	2917	.3	.5
Plumtree	2900	Culvert	
Plumtree	2827	.3	.5
Plumtree	2759	.1	.3
Plumtree	2589	.1	.3
Plumtree	2485	.1	.3

Plumtree	2331		.1	.3
Plumtree	2153		.1	.3
Plumtree	1994		.1	.3
Plumtree	1888		.3	.5
Plumtree	1850	Bridge		
Plumtree	1830		.3	.5
Plumtree	1641		.1	.3
Plumtree	1463		.1	.3
Plumtree	1291		.1	.3
Plumtree	1124		.1	.3
Plumtree	994		.1	.3
Plumtree	911		.1	.3
Plumtree	762		.1	.3
Plumtree	658		.1	.3
Plumtree	526		.1	.3
Plumtree	380		.1	.3
Plumtree	146		.1	.3
Plumtree	63		.1	.3

HEC-RAS Plan: E River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	10286	1-YR	223.00	388.00	391.05	388.51	391.06	0.000075	0.64	349.54	123.72	0.07
Plumtree	10286	2-YR	307.00	388.00	391.56	388.64	391.57	0.000084	0.74	413.39	126.81	0.07
Plumtree	10286	10-YR	596.00	388.00	393.97	388.99	393.98	0.000050	0.82	735.54	141.38	0.06
Plumtree	10286	50-YR	995.00	388.00	395.23	389.38	395.24	0.000070	1.11	918.45	149.26	0.07
Plumtree	10286	100-YR	1200.00	388.00	395.52	389.56	395.55	0.000088	1.28	962.99	151.35	0.08
Plumtree	10286	200-YR	1441.00	388.00	395.83	389.76	395.86	0.000110	1.47	1009.48	153.50	0.10
Plumtree	10044	1-YR	223.00	388.00	391.05		391.05	0.000023	0.36	613.14	210.47	0.04
Plumtree	10044	2-YR	307.00	388.00	391.56		391.56	0.000026	0.43	721.18	213.57	0.04
Plumtree	10044	10-YR	596.00	388.00	393.96		393.97	0.000016	0.48	1252.85	228.18	0.04
Plumtree	10044	50-YR	995.00	388.00	395.22		395.23	0.000023	0.65	1545.35	235.86	0.04
Plumtree	10044	100-YR	1200.00	388.00	395.52		395.53	0.000029	0.76	1615.60	237.66	0.05
Plumtree	10044	200-YR	1441.00	388.00	395.83		395.84	0.000037	0.87	1688.57	239.52	0.06
Plumtree	9814	1-YR	223.00	388.00	391.04	388.26	391.05	0.000011	0.25	886.93	300.67	0.03
Plumtree	9814	2-YR	307.00	388.00	391.55	388.32	391.56	0.000012	0.29	1040.88	303.80	0.03
Plumtree	9814	10-YR	596.00	388.00	393.96	388.52	393.96	0.000008	0.33	1790.49	318.58	0.02
Plumtree	9814	50-YR	995.00	388.00	395.22	388.72	395.23	0.000011	0.46	2197.07	327.17	0.03
Plumtree	9814	100-YR	1200.00	388.00	395.52	388.83	395.52	0.000014	0.53	2294.54	330.12	0.03
Plumtree	9814	200-YR	1441.00	388.00	395.83	388.93	395.83	0.000018	0.61	2412.40	374.28	0.04
Plumtree	9762	1-YR	223.00	388.00	391.04		391.04	0.000012	0.27	839.34	285.36	0.03
Plumtree	9762	2-YR	307.00	388.00	391.55		391.55	0.000014	0.31	985.49	288.57	0.03
Plumtree	9762	10-YR	596.00	388.00	393.96		393.96	0.000009	0.35	1698.97	303.77	0.03
Plumtree	9762	50-YR	995.00	388.00	395.22		395.23	0.000013	0.48	2087.48	317.70	0.03
Plumtree	9762	100-YR	1200.00	388.00	395.52		395.52	0.000016	0.56	2183.05	327.56	0.04
Plumtree	9762	200-YR	1441.00	388.00	395.82		395.83	0.000020	0.64	2284.64	337.91	0.04
Plumtree	9732	1-YR	223.00	387.00	391.01	388.57	391.04	0.000297	1.42	168.99	214.23	0.14
Plumtree	9732	2-YR	307.00	387.00	391.51	388.78	391.55	0.000353	1.69	194.49	227.26	0.15
Plumtree	9732	10-YR	596.00	387.00	393.90	389.35	393.96	0.000260	2.01	317.41	282.02	0.14
Plumtree	9732	50-YR	995.00	387.00	395.22	390.03	395.23	0.000042	0.92	1647.58	291.67	0.06
Plumtree	9732	100-YR	1200.00	387.00	395.51	390.33	395.52	0.000052	1.05	1733.93	293.49	0.07
Plumtree	9732	200-YR	1441.00	387.00	395.82	390.68	395.83	0.000065	1.20	1823.40	295.36	0.07
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	223.00	386.27	388.90	388.43	389.24	0.009102	4.69	47.66	31.31	0.66
Plumtree	9589	2-YR	307.00	386.27	389.40	388.79	389.76	0.006816	4.84	64.57	36.75	0.60
Plumtree	9589	10-YR	596.00	386.27	390.62	389.65	391.13	0.005122	5.75	108.50	52.69	0.56
Plumtree	9589	50-YR	995.00	386.27	391.62	390.53	392.31	0.005244	6.95	183.63	80.41	0.59
Plumtree	9589	100-YR	1200.00	386.27	392.22	390.93	392.92	0.004564	7.08	249.55	161.74	0.57
Plumtree	9589	200-YR	1441.00	386.27	392.89	391.55	393.46	0.003497	6.76	402.80	267.41	0.51
Plumtree	9499	1-YR	138.00	385.35	388.34		388.53	0.005004	3.54	43.95	35.13	0.49
Plumtree	9499	2-YR	210.00	385.35	389.02		389.19	0.003840	3.52	73.09	52.25	0.44
Plumtree	9499	10-YR	544.00	385.35	390.45		390.64	0.002724	4.08	227.01	153.93	0.40
Plumtree	9499	50-YR	1038.00	385.35	391.56		391.77	0.002386	4.66	404.92	166.43	0.40
Plumtree	9499	100-YR	1384.00	385.35	392.18		392.41	0.002280	4.99	510.67	173.04	0.40
Plumtree	9499	200-YR	1776.00	385.35	392.81		393.06	0.002175	5.28	622.47	178.74	0.40
Plumtree	9398	1-YR	138.00	384.42	387.89		388.10	0.003547	3.69	37.44	14.82	0.41
Plumtree	9398	2-YR	210.00	384.42	388.41		388.74	0.004831	4.63	45.40	15.94	0.48
Plumtree	9398	10-YR	544.00	384.42	389.86		390.26	0.004763	5.84	193.51	157.50	0.51
Plumtree	9398	50-YR	1038.00	384.42	391.22		391.49	0.003074	5.67	422.75	179.00	0.43
Plumtree	9398	100-YR	1384.00	384.42	391.89		392.15	0.002816	5.86	544.38	184.66	0.42
Plumtree	9398	200-YR	1776.00	384.42	392.54		392.81	0.002722	6.17	669.94	197.20	0.42
Plumtree	9301	1-YR	138.00	383.31	387.69		387.83	0.001927	3.01	49.16	27.68	0.31
Plumtree	9301	2-YR	210.00	383.31	388.13		388.36	0.002771	3.88	62.81	32.77	0.38
Plumtree	9301	10-YR	544.00	383.31	388.95	388.54	389.67	0.007247	7.23	117.99	86.36	0.63
Plumtree	9301	50-YR	1038.00	383.31	389.81	389.81	390.92	0.010072	9.69	197.33	96.92	0.77
Plumtree	9301	100-YR	1384.00	383.31	390.34	390.34	391.58	0.010699	10.68	249.40	102.02	0.81
Plumtree	9301	200-YR	1776.00	383.31	390.81	390.81	392.22	0.011555	11.74	298.93	106.65	0.85
Plumtree	9196	1-YR	138.00	383.81	386.85	386.58	387.36	0.014797	5.72	24.11	15.28	0.80
Plumtree	9196	2-YR	210.00	383.81	387.43	387.43	387.84	0.010156	5.50	63.88	108.92	0.69
Plumtree	9196	10-YR	544.00	383.81	388.42		388.78	0.007607	6.17	188.67	139.16	0.63
Plumtree	9196	50-YR	1038.00	383.81	389.43	388.78	389.78	0.006082	6.73	335.94	151.12	0.60
Plumtree	9196	100-YR	1384.00	383.81	389.97	389.11	390.35	0.005850	7.18	418.67	156.51	0.60
Plumtree	9196	200-YR	1776.00	383.81	390.51	389.44	390.92	0.005695	7.64	504.53	162.18	0.60
Plumtree	8987	1-YR	138.00	382.77	386.17		386.29	0.002200	2.99	78.62	103.45	0.33
Plumtree	8987	2-YR	210.00	382.77	386.56	385.26	386.70	0.002371	3.37	122.56	115.60	0.35
Plumtree	8987	10-YR	544.00	382.77	387.60		387.80	0.003034	4.67	249.65	128.49	0.41
Plumtree	8987	50-YR	1038.00	382.77	388.49		388.79	0.003962	6.10	368.65	138.89	0.49
Plumtree	8987	100-YR	1384.00	382.77	388.95		389.31	0.004550	6.93	432.46	143.14	0.53
Plumtree	8987	200-YR	1776.00	382.77	389.42		389.84	0.004976	7.67	501.39	147.60	0.56

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	8753	1-YR	138.00	381.99	384.97	384.72	385.34	0.008954	5.19	39.34	70.27	0.62
Plumtree	8753	2-YR	210.00	381.99	385.26	385.26	385.68	0.009785	5.91	61.72	79.93	0.66
Plumtree	8753	10-YR	544.00	381.99	386.28		386.68	0.008305	6.86	157.66	125.85	0.65
Plumtree	8753	50-YR	1038.00	381.99	387.41		387.70	0.005563	6.77	358.30	205.43	0.56
Plumtree	8753	100-YR	1384.00	381.99	388.03		388.26	0.004154	6.36	495.46	238.13	0.49
Plumtree	8753	200-YR	1776.00	381.99	388.62		388.83	0.003432	6.21	640.83	251.79	0.45
Plumtree	8579	1-YR	138.00	381.13	383.78		384.00	0.006140	4.09	51.98	78.26	0.53
Plumtree	8579	2-YR	210.00	381.13	384.24	383.49	384.43	0.004652	4.13	91.25	91.33	0.48
Plumtree	8579	10-YR	544.00	381.13	385.51		385.71	0.003553	4.83	222.47	113.20	0.45
Plumtree	8579	50-YR	1038.00	381.13	386.65		386.91	0.003632	5.86	362.97	133.70	0.48
Plumtree	8579	100-YR	1384.00	381.13	387.25		387.55	0.003799	6.49	446.40	146.52	0.50
Plumtree	8579	200-YR	1776.00	381.13	387.84		388.18	0.003836	7.00	535.48	154.78	0.51
Plumtree	8374	1-YR	138.00	380.31	383.38		383.45	0.001338	2.41	90.61	81.48	0.26
Plumtree	8374	2-YR	210.00	380.31	383.82		383.91	0.001479	2.75	128.19	87.68	0.28
Plumtree	8374	10-YR	544.00	380.31	384.99		385.15	0.002140	4.00	240.66	105.86	0.36
Plumtree	8374	50-YR	1038.00	380.31	386.03		386.28	0.002685	5.24	358.31	119.76	0.41
Plumtree	8374	100-YR	1384.00	380.31	386.56		386.87	0.003042	5.97	423.04	125.89	0.45
Plumtree	8374	200-YR	1776.00	380.31	387.07		387.45	0.003386	6.68	489.48	134.02	0.48
Plumtree	8229	1-YR	138.00	379.79	382.41	382.41	382.96	0.012597	6.15	30.26	46.11	0.76
Plumtree	8229	2-YR	210.00	379.79	382.88	382.88	383.41	0.010586	6.48	56.96	66.45	0.72
Plumtree	8229	10-YR	544.00	379.79	384.10		384.57	0.008107	7.36	163.35	104.88	0.67
Plumtree	8229	50-YR	1038.00	379.79	385.04		385.61	0.008590	8.80	275.78	131.07	0.72
Plumtree	8229	100-YR	1384.00	379.79	385.56		386.15	0.008473	9.37	345.56	138.54	0.72
Plumtree	8229	200-YR	1776.00	379.79	386.04		386.68	0.008668	10.05	413.17	145.29	0.74
Plumtree	8094	1-YR	138.00	378.24	381.43	380.34	381.70	0.004968	4.19	38.05	39.43	0.47
Plumtree	8094	2-YR	210.00	378.24	381.74	380.91	382.15	0.007451	5.38	54.21	64.65	0.58
Plumtree	8094	10-YR	544.00	378.24	382.65	382.65	383.31	0.010554	7.74	140.68	115.17	0.72
Plumtree	8094	50-YR	1038.00	378.24	383.46	383.46	384.23	0.011764	9.35	244.25	140.41	0.78
Plumtree	8094	100-YR	1384.00	378.24	383.83	383.83	384.72	0.013068	10.40	297.80	148.91	0.84
Plumtree	8094	200-YR	1776.00	378.24	384.21	384.21	385.18	0.013896	11.28	355.73	157.37	0.88
Plumtree	7954	1-YR	138.00	377.79	380.82	380.58	380.92	0.005512	3.50	94.60	152.31	0.48
Plumtree	7954	2-YR	210.00	377.79	381.05	380.78	381.15	0.005718	3.88	129.51	156.16	0.50
Plumtree	7954	10-YR	544.00	377.79	381.73	381.23	381.88	0.006832	5.20	239.52	167.67	0.57
Plumtree	7954	50-YR	1038.00	377.79	382.42	381.70	382.63	0.007701	6.47	360.64	183.37	0.63
Plumtree	7954	100-YR	1384.00	377.79	382.80	381.91	383.06	0.007970	7.09	432.77	189.49	0.65
Plumtree	7954	200-YR	1776.00	377.79	383.19	382.23	383.49	0.008148	7.67	508.09	195.55	0.67
Plumtree	7800	1-YR	138.00	378.73	379.69		379.75	0.010844	3.26	92.21	165.61	0.64
Plumtree	7800	2-YR	210.00	378.73	379.85		379.93	0.011363	3.76	120.24	173.42	0.68
Plumtree	7800	10-YR	544.00	378.73	380.44		380.57	0.010769	5.03	225.07	184.50	0.72
Plumtree	7800	50-YR	1038.00	378.73	381.11		381.30	0.009638	6.06	352.79	195.31	0.72
Plumtree	7800	100-YR	1384.00	378.73	381.51		381.74	0.009110	6.59	432.72	201.79	0.72
Plumtree	7800	200-YR	1776.00	378.73	381.92		382.18	0.008700	7.10	516.69	208.37	0.72
Plumtree	7548	1-YR	138.00	375.57	378.38		378.43	0.003057	2.90	136.60	250.77	0.37
Plumtree	7548	2-YR	210.00	375.57	378.62		378.67	0.002806	3.01	201.62	273.42	0.36
Plumtree	7548	10-YR	544.00	375.57	379.39		379.44	0.002381	3.41	418.29	291.26	0.35
Plumtree	7548	50-YR	1038.00	375.57	380.24		380.29	0.002045	3.76	675.66	309.90	0.34
Plumtree	7548	100-YR	1384.00	375.57	380.66		380.73	0.002084	4.07	808.30	315.66	0.35
Plumtree	7548	200-YR	1776.00	375.57	381.10		381.17	0.002101	4.37	946.42	321.38	0.36
Plumtree	7367	1-YR	138.00	378.30	377.45		377.50	0.010048		77.88	92.27	0.00
Plumtree	7367	2-YR	210.00	378.30	377.70		377.76	0.010666		104.42	118.92	0.00
Plumtree	7367	10-YR	544.00	378.30	378.69		378.76	0.006347	0.98	268.29	209.85	0.39
Plumtree	7367	50-YR	1038.00	378.30	379.69		379.75	0.004755	2.25	555.95	378.48	0.43
Plumtree	7367	100-YR	1384.00	378.30	380.19		380.25	0.003449	2.55	753.05	404.87	0.39
Plumtree	7367	200-YR	1776.00	378.30	380.68		380.73	0.002733	2.80	952.18	413.60	0.37
Plumtree	7216	1-YR	138.00	375.26	376.86	376.36	376.89	0.002039	1.64	128.26	180.11	0.29
Plumtree	7216	2-YR	210.00	375.26	377.09	376.51	377.13	0.002094	1.91	171.53	194.12	0.31
Plumtree	7216	10-YR	544.00	375.26	378.45	376.93	378.49	0.000767	1.92	484.36	258.54	0.21
Plumtree	7216	50-YR	1038.00	375.26	379.46	377.36	379.51	0.000771	2.40	761.14	290.59	0.22
Plumtree	7216	100-YR	1384.00	375.26	379.96	377.62	380.02	0.000829	2.72	908.95	305.90	0.24
Plumtree	7216	200-YR	1776.00	375.26	380.44	377.87	380.52	0.000874	3.01	1059.65	316.41	0.25
Plumtree	7030	1-YR	138.00	373.43	375.87	375.87	376.09	0.013186	5.23	68.18	143.87	0.75
Plumtree	7030	2-YR	210.00	373.43	376.03	376.03	376.27	0.015157	5.98	91.58	153.65	0.81
Plumtree	7030	10-YR	544.00	373.43	378.32		378.35	0.000696	2.28	534.70	219.34	0.20
Plumtree	7030	50-YR	1038.00	373.43	379.31		379.35	0.000880	2.97	758.24	232.39	0.23
Plumtree	7030	100-YR	1384.00	373.43	379.79		379.84	0.001045	3.44	870.51	241.45	0.26
Plumtree	7030	200-YR	1776.00	373.43	380.25		380.32	0.001233	3.94	986.17	257.23	0.29

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	6893	1-YR	138.00	370.68	373.90	373.13	374.06	0.004572	3.47	63.42	97.63	0.46
Plumtree	6893	2-YR	210.00	370.68	374.33	373.50	374.47	0.003488	3.51	109.16	114.75	0.42
Plumtree	6893	10-YR	544.00	370.68	378.29		378.31	0.000148	1.44	809.91	225.51	0.10
Plumtree	6893	50-YR	1038.00	370.68	379.26		379.29	0.000273	2.16	1036.70	243.88	0.14
Plumtree	6893	100-YR	1384.00	370.68	379.72		379.76	0.000364	2.60	1150.66	252.54	0.17
Plumtree	6893	200-YR	1776.00	370.68	380.16		380.22	0.000461	3.04	1264.80	260.30	0.19
Plumtree	6766	1-YR	138.00	369.76	373.06	372.26	373.30	0.008191	3.97	41.38	71.68	0.60
Plumtree	6766	2-YR	210.00	369.76	374.11		374.18	0.001464	2.43	144.55	112.88	0.28
Plumtree	6766	10-YR	544.00	369.76	378.28		378.29	0.000095	1.22	963.02	270.46	0.08
Plumtree	6766	50-YR	1038.00	369.76	379.23		379.26	0.000190	1.88	1242.67	316.94	0.12
Plumtree	6766	100-YR	1384.00	369.76	379.69		379.72	0.000259	2.28	1390.46	340.88	0.14
Plumtree	6766	200-YR	1776.00	369.76	380.12		380.17	0.000328	2.66	1542.93	356.35	0.16
Plumtree	6663	1-YR	138.00	369.26	372.75		372.88	0.002107	2.84	52.06	47.55	0.32
Plumtree	6663	2-YR	210.00	369.26	374.01		374.07	0.000775	2.23	158.66	113.48	0.21
Plumtree	6663	10-YR	544.00	369.26	378.27		378.28	0.000075	1.17	1112.10	321.09	0.07
Plumtree	6663	50-YR	1038.00	369.26	379.22		379.24	0.000140	1.73	1426.87	341.03	0.10
Plumtree	6663	100-YR	1384.00	369.26	379.67		379.69	0.000188	2.07	1581.06	349.71	0.12
Plumtree	6663	200-YR	1776.00	369.26	380.10		380.13	0.000241	2.41	1734.27	357.45	0.14
Plumtree	6568	1-YR	151.00	368.65	372.40		372.62	0.003426	3.81	47.36	42.32	0.40
Plumtree	6568	2-YR	232.00	368.65	373.89		373.98	0.001069	2.78	162.42	116.24	0.24
Plumtree	6568	10-YR	610.00	368.65	378.26		378.27	0.000108	1.41	1045.23	274.09	0.08
Plumtree	6568	50-YR	1152.00	368.65	379.20		379.22	0.000208	2.09	1312.34	295.82	0.12
Plumtree	6568	100-YR	1517.00	368.65	379.64		379.67	0.000281	2.50	1444.62	307.72	0.14
Plumtree	6568	200-YR	1943.00	368.65	380.06		380.10	0.000369	2.95	1577.65	321.83	0.16
Plumtree	6454	1-YR	151.00	368.30	371.91		372.13	0.005444	3.77	40.12	24.45	0.50
Plumtree	6454	2-YR	232.00	368.30	373.78		373.87	0.000889	2.47	136.58	91.17	0.23
Plumtree	6454	10-YR	610.00	368.30	378.25		378.26	0.000091	1.35	943.60	224.50	0.08
Plumtree	6454	50-YR	1152.00	368.30	379.17		379.20	0.000191	2.10	1165.72	258.13	0.12
Plumtree	6454	100-YR	1517.00	368.30	379.59		379.64	0.000264	2.55	1278.78	273.33	0.15
Plumtree	6454	200-YR	1943.00	368.30	380.00		380.06	0.000354	3.04	1393.16	290.50	0.17
Plumtree	6350	1-YR	151.00	366.97	371.73	369.47	371.82	0.001519	2.50	60.50	23.24	0.27
Plumtree	6350	2-YR	232.00	366.97	373.72	370.28	373.79	0.000580	2.03	116.96	38.15	0.18
Plumtree	6350	10-YR	610.00	366.97	378.20	371.92	378.25	0.000189	1.92	543.58	209.04	0.12
Plumtree	6350	50-YR	1152.00	366.97	379.06	373.48	379.16	0.000414	3.04	716.18	246.90	0.18
Plumtree	6350	100-YR	1517.00	366.97	379.44	374.37	379.59	0.000580	3.70	802.83	263.10	0.21
Plumtree	6350	200-YR	1943.00	366.97	379.79	375.30	380.00	0.000782	4.39	888.09	275.83	0.25
Plumtree	6296	1-YR	151.00	367.41	371.53	370.10	371.70	0.002924	3.55	51.12	23.87	0.36
Plumtree	6296	2-YR	232.00	367.41	373.65	370.71	373.75	0.000889	2.77	115.23	37.07	0.22
Plumtree	6296	10-YR	610.00	367.41	378.16	372.43	378.23	0.000381	2.78	480.38	147.53	0.16
Plumtree	6296	50-YR	1152.00	367.41	378.95	374.12	379.13	0.000879	4.46	610.70	190.31	0.24
Plumtree	6296	100-YR	1517.00	367.41	379.28	374.94	379.53	0.001277	5.49	682.92	231.75	0.30
Plumtree	6296	200-YR	1943.00	367.41	379.57	376.17	379.92	0.001745	6.53	753.68	250.83	0.35
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	151.00	366.39	370.38	367.77	370.43	0.000467	1.67	90.53	28.87	0.16
Plumtree	6197	2-YR	232.00	366.39	371.26	368.17	371.32	0.000495	2.02	116.92	31.36	0.18
Plumtree	6197	10-YR	610.00	366.39	373.23	369.55	373.42	0.000906	3.54	184.26	36.95	0.25
Plumtree	6197	50-YR	1152.00	366.39	374.82	370.92	375.23	0.001450	5.23	246.39	49.10	0.33
Plumtree	6197	100-YR	1517.00	366.39	375.54	371.70	376.12	0.001830	6.23	280.55	67.97	0.38
Plumtree	6197	200-YR	1943.00	366.39	376.24	372.53	377.02	0.002225	7.25	315.03	95.01	0.42
Plumtree	6122	1-YR	151.00	366.62	369.52	369.14	370.15	0.014351	6.38	23.68	11.18	0.77
Plumtree	6122	2-YR	232.00	366.62	369.92	369.92	370.93	0.023455	8.04	28.85	14.36	1.00
Plumtree	6122	10-YR	610.00	366.62	372.01	371.78	373.01	0.011452	8.39	91.11	43.07	0.78
Plumtree	6122	50-YR	1152.00	366.62	373.29	373.29	374.70	0.011791	10.43	159.83	72.37	0.83
Plumtree	6122	100-YR	1517.00	366.62	373.92	373.92	375.53	0.012016	11.43	198.85	78.94	0.86
Plumtree	6122	200-YR	1943.00	366.62	374.55	374.55	376.37	0.012316	12.44	239.11	89.13	0.89
Plumtree	6028	1-YR	151.00	365.53	369.33	368.29	369.47	0.002962	3.17	66.06	62.06	0.38
Plumtree	6028	2-YR	232.00	365.53	370.06	368.99	370.18	0.001958	3.14	117.18	79.04	0.33
Plumtree	6028	10-YR	610.00	365.53	372.44	370.06	372.53	0.000908	3.20	380.27	147.50	0.25
Plumtree	6028	50-YR	1152.00	365.53	373.54	371.00	373.68	0.001232	4.24	557.27	202.70	0.30
Plumtree	6028	100-YR	1517.00	365.53	374.11	371.51	374.29	0.001380	4.76	655.51	215.00	0.32
Plumtree	6028	200-YR	1943.00	365.53	374.70	372.05	374.90	0.001504	5.24	761.60	227.81	0.34
Plumtree	5926	1-YR	151.00	365.38	368.80	368.13	369.06	0.005515	4.50	45.51	28.41	0.51
Plumtree	5926	2-YR	232.00	365.38	369.60	368.60	369.88	0.004382	4.84	75.33	49.46	0.47
Plumtree	5926	10-YR	610.00	365.38	372.23	370.20	372.40	0.001696	4.46	266.45	153.93	0.32
Plumtree	5926	50-YR	1152.00	365.38	373.16	371.51	373.48	0.002868	6.40	358.41	163.39	0.43
Plumtree	5926	100-YR	1517.00	365.38	373.62	372.00	374.05	0.003594	7.48	406.88	168.04	0.49
Plumtree	5926	200-YR	1943.00	365.38	374.09	372.51	374.63	0.004317	8.55	458.57	172.27	0.54

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5824	1-YR	151.00	365.08	367.30	367.30	368.00	0.022490	6.70	22.53	16.28	1.00
Plumtree	5824	2-YR	232.00	365.08	369.35		369.51	0.002529	3.23	72.74	35.14	0.37
Plumtree	5824	10-YR	610.00	365.08	372.13		372.27	0.000883	3.21	315.89	157.75	0.25
Plumtree	5824	50-YR	1152.00	365.08	373.03		373.26	0.001400	4.49	461.00	167.05	0.32
Plumtree	5824	100-YR	1517.00	365.08	373.47		373.76	0.001708	5.20	535.60	171.65	0.36
Plumtree	5824	200-YR	1943.00	365.08	373.92		374.28	0.002003	5.89	614.89	176.46	0.39
Plumtree	5745	1-YR	151.00	363.03	367.02	365.70	367.19	0.003189	3.36	44.99	20.27	0.40
Plumtree	5745	2-YR	232.00	363.03	369.30	366.25	369.38	0.000754	2.27	107.51	39.23	0.21
Plumtree	5745	10-YR	610.00	363.03	372.08	367.93	372.20	0.000616	2.97	274.48	100.42	0.21
Plumtree	5745	50-YR	1152.00	363.03	372.83	369.57	373.14	0.001390	4.80	336.58	116.00	0.32
Plumtree	5745	100-YR	1517.00	363.03	373.13	370.37	373.60	0.002032	5.97	362.82	131.10	0.39
Plumtree	5745	200-YR	1943.00	363.03	373.37	371.23	374.06	0.002918	7.31	384.69	144.09	0.47
Plumtree	5711	1-YR	151.00	362.51	366.99	364.85	367.10	0.001499	2.60	58.14	21.58	0.28
Plumtree	5711	2-YR	232.00	362.51	369.30	365.48	369.36	0.000461	1.97	130.97	46.63	0.17
Plumtree	5711	10-YR	610.00	362.51	372.08	367.25	372.18	0.000459	2.73	331.44	120.99	0.18
Plumtree	5711	50-YR	1152.00	362.51	372.83	368.96	373.08	0.001074	4.47	439.09	166.33	0.28
Plumtree	5711	100-YR	1517.00	362.51	373.14	369.88	373.51	0.001531	5.48	492.76	178.73	0.34
Plumtree	5711	200-YR	1943.00	362.51	373.40	370.69	373.93	0.002145	6.62	540.30	184.27	0.40
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	151.00	361.81	366.07	363.82	366.14	0.000809	1.98	76.42	27.84	0.21
Plumtree	5614	2-YR	232.00	361.81	366.96	364.26	367.04	0.000829	2.26	102.89	35.28	0.22
Plumtree	5614	10-YR	610.00	361.81	371.23	365.75	371.28	0.000227	1.99	506.68	176.53	0.13
Plumtree	5614	50-YR	1152.00	361.81	372.48	367.24	372.57	0.000376	2.85	749.62	213.81	0.17
Plumtree	5614	100-YR	1517.00	361.81	372.97	368.10	373.09	0.000501	3.41	859.57	234.03	0.20
Plumtree	5614	200-YR	1943.00	361.81	373.30	368.84	373.48	0.000673	4.05	939.94	239.07	0.23
Plumtree	5560	1-YR	151.00	362.08	365.98		366.07	0.001338	2.41	62.57	23.48	0.26
Plumtree	5560	2-YR	232.00	362.08	366.85		366.97	0.001402	2.74	84.68	27.09	0.27
Plumtree	5560	10-YR	610.00	362.08	371.22		371.26	0.000229	1.96	655.09	270.41	0.13
Plumtree	5560	50-YR	1152.00	362.08	372.48		372.54	0.000308	2.53	1025.10	311.32	0.15
Plumtree	5560	100-YR	1517.00	362.08	372.97		373.04	0.000387	2.94	1183.34	331.39	0.17
Plumtree	5560	200-YR	1943.00	362.08	373.31		373.41	0.000510	3.46	1298.70	343.03	0.20
Plumtree	5510	1-YR	151.00	362.16	365.61	364.72	365.92	0.006190	4.48	33.72	15.67	0.54
Plumtree	5510	2-YR	232.00	362.16	366.46	365.31	366.82	0.005548	4.82	48.15	18.29	0.52
Plumtree	5510	10-YR	610.00	362.16	371.15	367.18	371.24	0.000583	2.91	401.67	219.37	0.20
Plumtree	5510	50-YR	1152.00	362.16	372.36	369.18	372.50	0.000813	3.83	623.39	248.75	0.24
Plumtree	5510	100-YR	1517.00	362.16	372.82	369.90	373.00	0.001020	4.46	714.85	255.26	0.27
Plumtree	5510	200-YR	1943.00	362.16	373.10	370.91	373.35	0.001385	5.31	772.79	259.24	0.32
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	151.00	361.52	365.53	363.76	365.68	0.002297	3.13	48.25	18.12	0.34
Plumtree	5474	2-YR	232.00	361.52	366.38	364.35	366.58	0.002454	3.59	64.69	20.64	0.36
Plumtree	5474	10-YR	610.00	361.52	371.09	366.22	371.17	0.000412	2.56	437.51	170.87	0.17
Plumtree	5474	50-YR	1152.00	361.52	372.27	368.13	372.40	0.000649	3.55	657.79	202.16	0.22
Plumtree	5474	100-YR	1517.00	361.52	372.70	369.23	372.87	0.000850	4.20	745.02	207.28	0.25
Plumtree	5474	200-YR	1943.00	361.52	373.09	370.19	373.32	0.001091	4.90	828.13	212.04	0.28
Plumtree	5419	1-YR	151.00	361.46	365.34	363.81	365.53	0.002932	3.47	43.46	16.55	0.38
Plumtree	5419	2-YR	232.00	361.46	366.16	364.40	366.41	0.003163	4.01	57.80	18.47	0.40
Plumtree	5419	10-YR	610.00	361.46	371.08	366.28	371.15	0.000398	2.56	454.15	189.21	0.16
Plumtree	5419	50-YR	1152.00	361.46	372.24	368.48	372.36	0.000667	3.64	646.94	220.28	0.22
Plumtree	5419	100-YR	1517.00	361.46	372.65	369.57	372.82	0.000888	4.33	722.13	225.14	0.25
Plumtree	5419	200-YR	1943.00	361.46	373.03	370.24	373.26	0.001159	5.08	792.84	229.40	0.29
Plumtree	5323	1-YR	151.00	361.32	365.00		365.21	0.003778	3.70	40.80	16.95	0.42
Plumtree	5323	2-YR	232.00	361.32	365.82		366.08	0.003753	4.15	59.26	39.60	0.43
Plumtree	5323	10-YR	610.00	361.32	371.07		371.11	0.000217	1.96	602.72	149.60	0.12
Plumtree	5323	50-YR	1152.00	361.32	372.23		372.30	0.000403	2.92	784.42	165.88	0.17
Plumtree	5323	100-YR	1517.00	361.32	372.63		372.73	0.000568	3.57	852.89	172.81	0.20
Plumtree	5323	200-YR	1943.00	361.32	373.00		373.14	0.000777	4.27	917.35	178.70	0.24
Plumtree	5209	1-YR	151.00	361.10	364.23	363.41	364.61	0.007341	4.92	30.67	13.63	0.58
Plumtree	5209	2-YR	232.00	361.10	365.00	364.04	365.48	0.007263	5.54	42.36	20.81	0.59
Plumtree	5209	10-YR	610.00	361.10	371.06	366.32	371.08	0.000177	1.87	692.10	167.60	0.11
Plumtree	5209	50-YR	1152.00	361.10	372.20	367.52	372.25	0.000328	2.77	894.72	194.66	0.16
Plumtree	5209	100-YR	1517.00	361.10	372.59	368.06	372.67	0.000475	3.42	971.64	205.40	0.19
Plumtree	5209	200-YR	1943.00	361.10	372.94	368.61	373.05	0.000666	4.14	1044.23	216.20	0.22
Plumtree	5107	1-YR	151.00	359.92	363.19	362.57	363.69	0.011233	5.66	26.66	13.19	0.70
Plumtree	5107	2-YR	232.00	359.92	364.27	363.32	364.71	0.007657	5.33	43.55	17.95	0.60
Plumtree	5107	10-YR	610.00	359.92	370.99	365.26	371.06	0.000278	2.27	415.97	223.75	0.14

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5107	50-YR	1152.00	359.92	372.07	367.02	372.20	0.000533	3.42	596.84	273.52	0.20
Plumtree	5107	100-YR	1517.00	359.92	372.40	367.76	372.59	0.000771	4.21	664.88	298.47	0.24
Plumtree	5107	200-YR	1943.00	359.92	372.67	368.51	372.95	0.001092	5.10	725.58	316.79	0.29
Plumtree	5040	1-YR	151.00	359.23	362.45	362.01	362.92	0.011253	5.49	27.53	15.10	0.72
Plumtree	5040	2-YR	232.00	359.23	364.04	362.59	364.30	0.003874	4.15	55.96	20.80	0.45
Plumtree	5040	10-YR	610.00	359.23	370.98	364.38	371.04	0.000219	2.15	501.63	228.63	0.13
Plumtree	5040	50-YR	1152.00	359.23	372.05	366.02	372.16	0.000389	3.09	777.64	283.04	0.17
Plumtree	5040	100-YR	1517.00	359.23	372.39	366.82	372.54	0.000544	3.74	873.69	293.96	0.21
Plumtree	5040	200-YR	1943.00	359.23	372.65	367.67	372.87	0.000765	4.51	956.33	314.66	0.25
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	151.00	359.04	361.79	361.06	362.07	0.006117	4.24	35.65	18.86	0.54
Plumtree	4932	2-YR	232.00	359.04	362.84	361.55	363.10	0.003782	4.05	57.28	22.28	0.45
Plumtree	4932	10-YR	610.00	359.04	368.11	363.17	368.26	0.000559	3.15	206.55	49.27	0.20
Plumtree	4932	50-YR	1152.00	359.04	371.94	364.66	372.05	0.000306	3.07	742.74	224.36	0.16
Plumtree	4932	100-YR	1517.00	359.04	372.29	365.48	372.46	0.000444	3.77	825.35	239.03	0.19
Plumtree	4932	200-YR	1943.00	359.04	372.59	366.33	372.82	0.000620	4.54	898.78	244.23	0.23
Plumtree	4845	1-YR	151.00	357.81	361.59	359.86	361.72	0.001969	2.94	51.28	19.15	0.32
Plumtree	4845	2-YR	232.00	357.81	362.68	360.37	362.84	0.001690	3.14	73.82	21.90	0.30
Plumtree	4845	10-YR	610.00	357.81	368.12	362.12	368.18	0.000256	2.13	419.93	117.60	0.13
Plumtree	4845	50-YR	1152.00	357.81	371.95	363.92	372.00	0.000168	2.24	835.60	174.54	0.12
Plumtree	4845	100-YR	1517.00	357.81	372.30	365.18	372.39	0.000255	2.82	889.00	183.08	0.14
Plumtree	4845	200-YR	1943.00	357.81	372.61	365.85	372.73	0.000374	3.48	937.26	190.62	0.17
Plumtree	4745	1-YR	151.00	357.45	361.39		361.51	0.002144	2.75	54.84	24.53	0.32
Plumtree	4745	2-YR	232.00	357.45	362.56		362.67	0.001453	2.67	86.84	30.42	0.28
Plumtree	4745	10-YR	610.00	357.45	368.14		368.15	0.000069	1.17	1059.40	263.74	0.07
Plumtree	4745	50-YR	1152.00	357.45	371.97		371.98	0.000037	1.11	2181.80	325.07	0.06
Plumtree	4745	100-YR	1517.00	357.45	372.34		372.35	0.000055	1.39	2302.29	332.61	0.07
Plumtree	4745	200-YR	1943.00	357.45	372.66		372.68	0.000081	1.71	2410.92	340.76	0.08
Plumtree	4636	1-YR	151.00	357.61	361.26		361.34	0.001014	2.24	67.35	23.05	0.23
Plumtree	4636	2-YR	232.00	357.61	362.45		362.54	0.000822	2.41	97.90	36.40	0.22
Plumtree	4636	10-YR	610.00	357.61	368.14		368.15	0.000044	1.02	1386.37	358.17	0.06
Plumtree	4636	50-YR	1152.00	357.61	371.97		371.98	0.000024	0.93	2925.04	517.38	0.04
Plumtree	4636	100-YR	1517.00	357.61	372.34		372.35	0.000035	1.16	3090.47	528.16	0.06
Plumtree	4636	200-YR	1943.00	357.61	372.66		372.67	0.000051	1.41	3237.98	537.61	0.07
Plumtree	4550	1-YR	151.00	357.24	361.17	359.08	361.25	0.001105	2.25	67.06	25.53	0.24
Plumtree	4550	2-YR	232.00	357.24	362.39	359.57	362.47	0.000831	2.28	103.16	39.30	0.22
Plumtree	4550	10-YR	610.00	357.24	368.09	361.15	368.14	0.000140	1.82	459.63	374.22	0.11
Plumtree	4550	50-YR	1152.00	357.24	371.97	362.71	371.98	0.000019	0.85	3210.53	497.04	0.04
Plumtree	4550	100-YR	1517.00	357.24	372.34	363.44	372.35	0.000028	1.06	3394.59	520.37	0.05
Plumtree	4550	200-YR	1943.00	357.24	372.66	364.19	372.67	0.000041	1.29	3559.61	587.97	0.06
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	151.00	351.69	359.23	354.38	359.25	0.000147	1.14	132.15	27.36	0.09
Plumtree	4344	2-YR	232.00	351.69	359.73	354.89	359.77	0.000261	1.59	145.94	28.13	0.12
Plumtree	4344	10-YR	610.00	351.69	361.50	356.46	361.65	0.000723	3.07	204.08	48.23	0.21
Plumtree	4344	50-YR	1152.00	351.69	362.69	358.09	363.04	0.001404	4.78	292.48	103.22	0.30
Plumtree	4344	100-YR	1517.00	351.69	363.30	358.95	363.76	0.001765	5.63	361.96	123.84	0.34
Plumtree	4344	200-YR	1943.00	351.69	364.04	359.85	364.58	0.001955	6.27	459.06	139.41	0.36
Plumtree	4289	1-YR	151.00	352.78	359.23		359.24	0.000152	1.09	138.01	32.82	0.09
Plumtree	4289	2-YR	232.00	352.78	359.72		359.75	0.000265	1.50	154.61	34.65	0.13
Plumtree	4289	10-YR	610.00	352.78	361.48		361.59	0.000653	2.75	232.00	64.06	0.20
Plumtree	4289	50-YR	1152.00	352.78	362.68		362.91	0.001086	4.03	383.07	153.94	0.27
Plumtree	4289	100-YR	1517.00	352.78	363.30		363.60	0.001262	4.60	484.09	169.48	0.30
Plumtree	4289	200-YR	1943.00	352.78	364.06		364.38	0.001300	4.98	617.38	182.02	0.31
Plumtree	4185	1-YR	174.00	354.77	358.95		359.17	0.004226	3.81	45.71	21.24	0.46
Plumtree	4185	2-YR	227.00	354.77	359.40		359.66	0.004104	4.08	55.69	22.73	0.46
Plumtree	4185	10-YR	609.00	354.77	360.89	359.80	361.40	0.005679	6.00	143.38	116.15	0.57
Plumtree	4185	50-YR	1166.00	354.77	362.34		362.71	0.003481	5.92	386.67	215.64	0.47
Plumtree	4185	100-YR	1529.00	354.77	363.10		363.41	0.002664	5.71	564.51	248.13	0.42
Plumtree	4185	200-YR	1999.00	354.77	363.93		364.19	0.002151	5.62	784.16	283.05	0.39
Plumtree	4033	1-YR	174.00	355.05	358.42		358.61	0.003166	3.55	48.98	20.27	0.40
Plumtree	4033	2-YR	227.00	355.05	358.86		359.10	0.003311	3.90	58.25	21.55	0.42
Plumtree	4033	10-YR	609.00	355.05	360.54		360.77	0.002454	4.50	254.81	162.74	0.39
Plumtree	4033	50-YR	1166.00	355.05	362.15		362.31	0.001532	4.41	566.28	245.72	0.32
Plumtree	4033	100-YR	1529.00	355.05	362.90		363.07	0.001473	4.69	776.59	297.45	0.32
Plumtree	4033	200-YR	1999.00	355.05	363.78		363.92	0.001175	4.55	1045.96	318.75	0.29

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	3930	1-YR	174.00	354.49	357.74	357.05	358.11	0.007479	4.91	35.47	18.13	0.61
Plumtree	3930	2-YR	227.00	354.49	358.17	357.40	358.60	0.007018	5.27	44.16	22.61	0.60
Plumtree	3930	10-YR	609.00	354.49	360.11	359.56	360.46	0.003671	5.55	230.41	185.67	0.48
Plumtree	3930	50-YR	1166.00	354.49	362.02	360.50	362.16	0.001312	4.26	630.51	230.03	0.30
Plumtree	3930	100-YR	1529.00	354.49	362.80	360.83	362.93	0.001140	4.30	816.14	245.84	0.29
Plumtree	3930	200-YR	1999.00	354.49	363.68	361.19	363.80	0.001005	4.37	1039.02	262.03	0.28
Plumtree	3816	1-YR	174.00	353.49	357.25	355.95	357.49	0.003769	3.94	46.82	27.81	0.43
Plumtree	3816	2-YR	227.00	353.49	357.73	356.31	357.99	0.003587	4.21	62.80	41.77	0.43
Plumtree	3816	10-YR	609.00	353.49	359.90	358.40	360.12	0.001952	4.49	270.72	141.65	0.35
Plumtree	3816	50-YR	1166.00	353.49	361.88	359.71	362.02	0.001114	4.21	604.29	199.62	0.28
Plumtree	3816	100-YR	1529.00	353.49	362.66	360.18	362.80	0.001036	4.35	750.81	218.36	0.27
Plumtree	3816	200-YR	1999.00	353.49	363.54	360.66	363.69	0.000989	4.56	914.45	230.64	0.27
Plumtree	3688	1-YR	174.00	352.86	356.85	355.18	357.06	0.002884	3.69	47.93	20.09	0.38
Plumtree	3688	2-YR	227.00	352.86	357.32	355.56	357.58	0.002934	4.10	61.38	37.37	0.39
Plumtree	3688	10-YR	609.00	352.86	359.60	357.87	359.86	0.002025	4.78	241.44	115.64	0.35
Plumtree	3688	50-YR	1166.00	352.86	361.66	359.38	361.86	0.001354	4.79	536.52	173.32	0.30
Plumtree	3688	100-YR	1529.00	352.86	362.46	359.96	362.65	0.001288	4.99	676.91	185.32	0.30
Plumtree	3688	200-YR	1999.00	352.86	363.35	360.55	363.54	0.001235	5.22	838.74	196.44	0.30
Plumtree	3550	1-YR	174.00	352.85	356.38	354.98	356.59	0.004140	3.68	47.36	23.87	0.45
Plumtree	3550	2-YR	227.00	352.85	356.91	355.35	357.13	0.003422	3.81	61.53	29.72	0.42
Plumtree	3550	10-YR	609.00	352.85	359.32	357.21	359.58	0.001949	4.45	209.18	96.12	0.35
Plumtree	3550	50-YR	1166.00	352.85	361.45	358.84	361.67	0.001287	4.59	458.79	147.14	0.30
Plumtree	3550	100-YR	1529.00	352.85	362.21	359.54	362.46	0.001338	5.00	560.22	160.32	0.31
Plumtree	3550	200-YR	1999.00	352.85	363.07	360.30	363.35	0.001390	5.46	678.91	179.50	0.33
Plumtree	3428	1-YR	174.00	351.86	355.93	354.28	356.15	0.003071	3.82	46.63	19.67	0.39
Plumtree	3428	2-YR	227.00	351.86	356.46	354.67	356.73	0.003104	4.17	58.56	24.86	0.40
Plumtree	3428	10-YR	609.00	351.86	358.85	356.83	359.28	0.002976	5.66	152.15	57.75	0.42
Plumtree	3428	50-YR	1166.00	351.86	360.96	358.73	361.43	0.002524	6.44	298.01	94.49	0.41
Plumtree	3428	100-YR	1529.00	351.86	361.60	359.59	362.19	0.002972	7.37	353.17	106.22	0.45
Plumtree	3428	200-YR	1999.00	351.86	362.33	360.40	363.05	0.003404	8.34	421.93	119.52	0.49
Plumtree	3296	1-YR	174.00	351.72	355.53		355.74	0.003051	3.71	46.90	16.01	0.38
Plumtree	3296	2-YR	227.00	351.72	356.04		356.30	0.003405	4.10	55.36	17.64	0.41
Plumtree	3296	10-YR	609.00	351.72	358.26		358.77	0.004902	5.74	106.34	28.92	0.52
Plumtree	3296	50-YR	1166.00	351.72	360.34		361.01	0.003803	6.73	218.76	94.74	0.49
Plumtree	3296	100-YR	1529.00	351.72	360.74	359.12	361.66	0.004919	8.01	260.45	110.30	0.56
Plumtree	3296	200-YR	1999.00	351.72	361.13	360.46	362.40	0.006422	9.53	306.49	125.37	0.65
Plumtree	3179	1-YR	174.00	350.39	355.24	353.67	355.38	0.002737	3.02	57.71	25.57	0.35
Plumtree	3179	2-YR	227.00	350.39	355.73	354.02	355.89	0.003059	3.15	72.10	33.31	0.38
Plumtree	3179	10-YR	609.00	350.39	358.25	355.79	358.40	0.001303	3.10	216.32	83.06	0.28
Plumtree	3179	50-YR	1166.00	350.39	360.52	356.94	360.67	0.000810	3.31	469.35	154.78	0.23
Plumtree	3179	100-YR	1529.00	350.39	361.02	357.50	361.22	0.001021	3.92	530.20	161.46	0.27
Plumtree	3179	200-YR	1999.00	350.39	361.53	358.16	361.81	0.001292	4.63	595.26	168.13	0.30
Plumtree	3077	1-YR	174.00	350.72	354.88		355.06	0.003734	3.37	51.68	25.45	0.42
Plumtree	3077	2-YR	227.00	350.72	355.43		355.58	0.002929	3.24	85.24	96.61	0.38
Plumtree	3077	10-YR	609.00	350.72	358.24		358.29	0.000488	2.26	500.99	181.68	0.18
Plumtree	3077	50-YR	1166.00	350.72	360.55		360.59	0.000329	2.38	948.54	218.63	0.15
Plumtree	3077	100-YR	1529.00	350.72	361.05		361.12	0.000431	2.85	1063.55	235.31	0.18
Plumtree	3077	200-YR	1999.00	350.72	361.59		361.67	0.000551	3.37	1192.82	248.66	0.20
Plumtree	2978	1-YR	174.00	350.53	354.52	352.78	354.71	0.003280	3.46	50.29	21.06	0.39
Plumtree	2978	2-YR	227.00	350.53	355.06	353.23	355.27	0.003403	3.60	63.03	26.05	0.41
Plumtree	2978	10-YR	609.00	350.53	358.00	355.25	358.20	0.001378	3.76	206.97	70.65	0.29
Plumtree	2978	50-YR	1166.00	350.53	360.30	356.76	360.52	0.001051	4.21	437.82	141.71	0.27
Plumtree	2978	100-YR	1529.00	350.53	360.71	357.61	361.02	0.001409	5.06	499.68	158.31	0.32
Plumtree	2978	200-YR	1999.00	350.53	361.12	358.39	361.55	0.001883	6.05	566.22	163.73	0.37
Plumtree	2917	1-YR	174.00	350.36	354.29	352.66	354.50	0.003496	3.67	47.39	18.90	0.41
Plumtree	2917	2-YR	227.00	350.36	354.81	353.05	355.05	0.003697	3.93	57.74	21.82	0.43
Plumtree	2917	10-YR	609.00	350.36	357.90	355.22	358.11	0.001484	3.79	192.42	76.52	0.31
Plumtree	2917	50-YR	1166.00	350.36	360.29	356.68	360.45	0.000832	3.72	609.46	254.55	0.24
Plumtree	2917	100-YR	1529.00	350.36	360.71	357.46	360.92	0.001034	4.31	722.48	275.26	0.28
Plumtree	2917	200-YR	1999.00	350.36	361.15	358.39	361.40	0.001293	5.00	846.38	298.20	0.31
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	174.00	350.08	354.05	353.40	354.31	0.007870	4.08	42.73	30.69	0.59
Plumtree	2827	2-YR	227.00	350.08	354.49	353.71	354.74	0.005955	4.02	58.18	41.40	0.53
Plumtree	2827	10-YR	609.00	350.08	355.79	355.01	356.31	0.006196	5.93	115.07	112.23	0.60
Plumtree	2827	50-YR	1166.00	350.08	356.85	356.21	357.36	0.005114	6.57	301.84	154.66	0.57
Plumtree	2827	100-YR	1529.00	350.08	357.42	356.68	357.95	0.004786	6.93	395.52	172.37	0.56
Plumtree	2827	200-YR	1999.00	350.08	357.99	357.17	358.56	0.004764	7.47	498.50	188.49	0.57

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	2759	1-YR	174.00	349.32	353.85		354.02	0.002183	3.33	55.34	27.41	0.31
Plumtree	2759	2-YR	227.00	349.32	354.25		354.47	0.002481	3.82	72.36	66.33	0.34
Plumtree	2759	10-YR	609.00	349.32	355.60		355.91	0.003265	5.34	241.29	169.22	0.41
Plumtree	2759	50-YR	1166.00	349.32	356.68		356.98	0.003294	6.08	453.37	219.06	0.43
Plumtree	2759	100-YR	1529.00	349.32	357.30		357.57	0.002993	6.16	594.84	240.75	0.41
Plumtree	2759	200-YR	1999.00	349.32	357.89		358.17	0.002960	6.47	744.40	261.74	0.42
Plumtree	2589	1-YR	174.00	349.71	353.44		353.57	0.003056	3.57	88.05	62.83	0.37
Plumtree	2589	2-YR	227.00	349.71	353.87		354.00	0.002814	3.66	117.90	76.96	0.35
Plumtree	2589	10-YR	609.00	349.71	355.12		355.30	0.003438	5.00	264.72	148.23	0.41
Plumtree	2589	50-YR	1166.00	349.71	356.13		356.36	0.003862	6.06	429.78	203.60	0.45
Plumtree	2589	100-YR	1529.00	349.71	356.69		356.96	0.004426	6.91	554.74	236.82	0.49
Plumtree	2589	200-YR	1999.00	349.71	357.34		357.59	0.003870	6.92	715.93	257.50	0.47
Plumtree	2485	1-YR	174.00	349.20	352.11	351.97	352.87	0.016919	7.08	26.81	19.64	0.85
Plumtree	2485	2-YR	227.00	349.20	352.51	352.49	353.34	0.015610	7.53	36.29	28.65	0.84
Plumtree	2485	10-YR	609.00	349.20	354.26		354.77	0.007271	7.32	188.47	140.44	0.62
Plumtree	2485	50-YR	1166.00	349.20	355.55		355.90	0.004796	7.09	397.48	182.63	0.53
Plumtree	2485	100-YR	1529.00	349.20	356.20		356.51	0.004118	7.07	521.89	199.10	0.50
Plumtree	2485	200-YR	1999.00	349.20	356.91		357.20	0.003561	7.07	667.09	208.11	0.47
Plumtree	2331	1-YR	174.00	348.10	351.37		351.61	0.003955	3.93	44.44	19.88	0.45
Plumtree	2331	2-YR	227.00	348.10	351.87		352.15	0.003672	4.19	55.56	23.94	0.44
Plumtree	2331	10-YR	609.00	348.10	353.62		353.99	0.003360	5.46	194.83	121.64	0.46
Plumtree	2331	50-YR	1166.00	348.10	354.89		355.29	0.003209	6.31	361.22	141.49	0.46
Plumtree	2331	100-YR	1529.00	348.10	355.49		355.93	0.003283	6.83	450.01	153.02	0.48
Plumtree	2331	200-YR	1999.00	348.10	356.18		356.65	0.003315	7.34	559.23	166.42	0.49
Plumtree	2153	1-YR	174.00	346.39	350.95		351.11	0.001892	3.21	58.24	21.03	0.29
Plumtree	2153	2-YR	227.00	346.39	351.43		351.63	0.002192	3.67	70.65	49.24	0.31
Plumtree	2153	10-YR	609.00	346.39	353.11		353.41	0.002965	5.14	216.55	114.58	0.37
Plumtree	2153	50-YR	1166.00	346.39	354.35		354.70	0.003290	6.15	376.15	138.89	0.41
Plumtree	2153	100-YR	1529.00	346.39	354.94		355.31	0.003446	6.64	459.69	145.28	0.42
Plumtree	2153	200-YR	1999.00	346.39	355.62		356.02	0.003552	7.13	560.79	153.80	0.43
Plumtree	1994	1-YR	174.00	346.45	350.56		350.75	0.002642	3.58	50.19	24.03	0.35
Plumtree	1994	2-YR	227.00	346.45	350.97		351.22	0.003027	4.07	62.33	34.92	0.38
Plumtree	1994	10-YR	609.00	346.45	352.52		352.88	0.003606	5.61	202.62	122.59	0.44
Plumtree	1994	50-YR	1166.00	346.45	353.75		354.14	0.003691	6.55	376.93	161.79	0.46
Plumtree	1994	100-YR	1529.00	346.45	354.37		354.75	0.003528	6.82	482.92	173.33	0.46
Plumtree	1994	200-YR	1999.00	346.45	355.08		355.46	0.003348	7.09	609.18	184.27	0.45
Plumtree	1888	1-YR	174.00	345.73	350.23	348.67	350.45	0.003004	3.94	56.95	45.04	0.39
Plumtree	1888	2-YR	227.00	345.73	350.66	349.10	350.90	0.002930	4.23	79.78	60.66	0.39
Plumtree	1888	10-YR	609.00	345.73	352.20	351.38	352.51	0.003118	5.53	233.64	128.34	0.43
Plumtree	1888	50-YR	1166.00	345.73	353.42	352.36	353.75	0.003201	6.46	404.95	152.84	0.45
Plumtree	1888	100-YR	1529.00	345.73	354.04	352.81	354.39	0.003220	6.89	502.94	164.47	0.46
Plumtree	1888	200-YR	1999.00	345.73	354.75	353.20	355.11	0.003157	7.27	624.03	175.83	0.46
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	174.00	346.61	350.15		350.24	0.001501	2.74	100.62	70.21	0.28
Plumtree	1830	2-YR	227.00	346.61	350.58		350.67	0.001474	2.91	134.00	85.38	0.29
Plumtree	1830	10-YR	609.00	346.61	352.12		352.25	0.001464	3.70	323.40	151.45	0.30
Plumtree	1830	50-YR	1166.00	346.61	353.32		353.48	0.001670	4.60	506.77	155.77	0.34
Plumtree	1830	100-YR	1529.00	346.61	353.90		354.09	0.001814	5.11	597.37	157.86	0.36
Plumtree	1830	200-YR	1999.00	346.61	354.54		354.78	0.002010	5.74	701.42	163.76	0.38
Plumtree	1641	1-YR	174.00	345.19	349.65		349.84	0.002635	3.63	60.15	30.55	0.35
Plumtree	1641	2-YR	227.00	345.19	350.01		350.25	0.003031	4.17	73.40	50.79	0.38
Plumtree	1641	10-YR	609.00	345.19	351.15		351.65	0.005475	6.72	174.97	110.80	0.54
Plumtree	1641	50-YR	1166.00	345.19	352.32		352.85	0.005477	7.78	326.07	143.62	0.56
Plumtree	1641	100-YR	1529.00	345.19	352.94		353.46	0.005165	8.07	418.12	153.94	0.55
Plumtree	1641	200-YR	1999.00	345.19	353.61		354.13	0.004966	8.44	525.17	164.80	0.55
Plumtree	1463	1-YR	174.00	343.35	349.52		349.58	0.000724	1.95	111.05	99.28	0.19
Plumtree	1463	2-YR	227.00	343.35	349.89		349.95	0.000764	2.15	150.92	117.56	0.20
Plumtree	1463	10-YR	609.00	343.35	350.92		351.07	0.001588	3.66	287.00	146.27	0.30
Plumtree	1463	50-YR	1166.00	343.35	351.96		352.20	0.002102	4.82	454.83	177.09	0.36
Plumtree	1463	100-YR	1529.00	343.35	352.55		352.81	0.002177	5.24	564.41	192.56	0.37
Plumtree	1463	200-YR	1999.00	343.35	353.22		353.50	0.002201	5.64	695.78	203.43	0.38
Plumtree	1291	1-YR	420.00	344.26	349.06		349.23	0.003601	4.14	198.51	221.77	0.41
Plumtree	1291	2-YR	586.00	344.26	349.39		349.57	0.003916	4.60	272.99	239.57	0.44
Plumtree	1291	10-YR	1265.00	344.26	350.43		350.61	0.003622	5.28	566.58	311.02	0.44
Plumtree	1291	50-YR	2188.00	344.26	351.58		351.74	0.002803	5.41	962.21	379.51	0.40
Plumtree	1291	100-YR	2798.00	344.26	352.23		352.38	0.002403	5.39	1224.56	411.30	0.38

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	1291	200-YR	3565.00	344.26	352.96		353.10	0.002008	5.30	1527.13	419.77	0.35
Plumtree	1124	1-YR	420.00	343.58	348.39		348.60	0.003996	4.52	216.79	244.80	0.45
Plumtree	1124	2-YR	586.00	343.58	348.82		348.97	0.003175	4.29	325.85	261.63	0.41
Plumtree	1124	10-YR	1265.00	343.58	349.99		350.11	0.002335	4.39	641.90	280.52	0.37
Plumtree	1124	50-YR	2188.00	343.58	351.22		351.34	0.001904	4.66	1003.08	307.38	0.34
Plumtree	1124	100-YR	2798.00	343.58	351.90		352.03	0.001773	4.85	1216.88	322.27	0.34
Plumtree	1124	200-YR	3565.00	343.58	352.65		352.79	0.001676	5.08	1463.46	334.33	0.33
Plumtree	994	1-YR	420.00	342.85	347.99		348.12	0.003010	3.47	224.29	186.91	0.39
Plumtree	994	2-YR	586.00	342.85	348.49		348.59	0.002456	3.40	322.86	206.69	0.36
Plumtree	994	10-YR	1265.00	342.85	349.68		349.81	0.002198	4.05	584.45	233.03	0.36
Plumtree	994	50-YR	2188.00	342.85	350.92		351.08	0.001975	4.62	896.71	267.02	0.36
Plumtree	994	100-YR	2798.00	342.85	351.60		351.78	0.001898	4.92	1084.61	283.36	0.36
Plumtree	994	200-YR	3565.00	342.85	352.36		352.55	0.001839	5.25	1304.16	300.17	0.36
Plumtree	911	1-YR	420.00	342.92	347.70		347.87	0.003021	4.08	224.03	195.18	0.40
Plumtree	911	2-YR	586.00	342.92	348.29		348.40	0.002179	3.76	343.33	213.95	0.34
Plumtree	911	10-YR	1265.00	342.92	349.51		349.63	0.002020	4.38	619.21	237.58	0.35
Plumtree	911	50-YR	2188.00	342.92	350.77		350.92	0.001912	4.95	940.59	269.43	0.35
Plumtree	911	100-YR	2798.00	342.92	351.46		351.62	0.001861	5.24	1131.84	284.31	0.35
Plumtree	911	200-YR	3565.00	342.92	352.22		352.39	0.001825	5.57	1353.49	299.79	0.35
Plumtree	762	1-YR	420.00	342.54	347.05		347.32	0.004540	4.71	127.29	90.11	0.49
Plumtree	762	2-YR	586.00	342.54	347.53		347.91	0.005258	5.60	190.36	162.01	0.54
Plumtree	762	10-YR	1265.00	342.54	349.03		349.27	0.002973	5.41	507.22	239.68	0.44
Plumtree	762	50-YR	2188.00	342.54	350.39		350.61	0.002313	5.64	857.23	276.18	0.40
Plumtree	762	100-YR	2798.00	342.54	351.10		351.33	0.002143	5.84	1062.11	295.07	0.39
Plumtree	762	200-YR	3565.00	342.54	351.88		352.11	0.002013	6.08	1299.48	312.06	0.39
Plumtree	658	1-YR	420.00	340.20	346.97		347.09	0.000947	2.84	199.96	179.33	0.24
Plumtree	658	2-YR	586.00	340.20	347.49		347.63	0.001042	3.22	305.28	227.08	0.26
Plumtree	658	10-YR	1265.00	340.20	348.93		349.07	0.001037	3.82	703.24	299.37	0.27
Plumtree	658	50-YR	2188.00	340.20	350.29		350.44	0.000974	4.22	1128.94	324.94	0.27
Plumtree	658	100-YR	2798.00	340.20	351.01		351.16	0.000969	4.47	1367.41	339.71	0.27
Plumtree	658	200-YR	3565.00	340.20	351.79		351.95	0.000982	4.78	1639.45	359.00	0.28
Plumtree	526	1-YR	420.00	341.63	346.84		346.95	0.001171	2.96	281.99	265.76	0.26
Plumtree	526	2-YR	586.00	341.63	347.39		347.48	0.000979	2.95	432.05	279.09	0.24
Plumtree	526	10-YR	1265.00	341.63	348.85		348.93	0.000828	3.25	863.05	309.88	0.23
Plumtree	526	50-YR	2188.00	341.63	350.21		350.30	0.000802	3.67	1304.52	336.88	0.24
Plumtree	526	100-YR	2798.00	341.63	350.93		351.03	0.000807	3.91	1550.55	349.05	0.24
Plumtree	526	200-YR	3565.00	341.63	351.71		351.82	0.000824	4.20	1826.88	362.36	0.25
Plumtree	380	1-YR	420.00	341.92	346.45		346.69	0.002707	4.08	145.28	154.36	0.39
Plumtree	380	2-YR	586.00	341.92	347.06	345.29	347.26	0.002212	4.07	258.00	192.32	0.36
Plumtree	380	10-YR	1265.00	341.92	348.57		348.75	0.001710	4.44	570.03	218.46	0.33
Plumtree	380	50-YR	2188.00	341.92	349.93		350.13	0.001618	5.01	878.08	234.45	0.34
Plumtree	380	100-YR	2798.00	341.92	350.64		350.85	0.001622	5.35	1045.53	240.11	0.34
Plumtree	380	200-YR	3565.00	341.92	351.39		351.64	0.001658	5.77	1229.39	245.75	0.35
Plumtree	146	1-YR	420.00	340.73	344.03	344.03	345.24	0.019827	8.80	47.75	20.14	1.01
Plumtree	146	2-YR	586.00	340.73	344.82	344.82	346.07	0.014965	9.05	70.52	44.51	0.91
Plumtree	146	10-YR	1265.00	340.73	346.67	346.67	347.87	0.009273	9.77	217.90	109.61	0.78
Plumtree	146	50-YR	2188.00	340.73	347.86	347.86	349.25	0.009473	11.40	364.96	137.53	0.81
Plumtree	146	100-YR	2798.00	340.73	348.45	348.45	349.96	0.009708	12.27	449.85	150.22	0.84
Plumtree	146	200-YR	3565.00	340.73	349.06	349.06	350.71	0.010032	13.23	545.77	161.31	0.86
Plumtree	63	1-YR	420.00	340.00	343.60	342.25	343.84	0.003500	3.91	107.43	43.98	0.44
Plumtree	63	2-YR	586.00	340.00	344.20	342.77	344.49	0.003507	4.35	134.98	50.25	0.45
Plumtree	63	10-YR	1265.00	340.00	345.81	344.14	346.34	0.003506	5.86	239.34	81.32	0.49
Plumtree	63	50-YR	2188.00	340.00	347.32	345.51	348.05	0.003501	7.11	399.56	123.01	0.51
Plumtree	63	100-YR	2798.00	340.00	348.10	346.36	348.92	0.003500	7.71	500.78	136.57	0.52
Plumtree	63	200-YR	3565.00	340.00	348.94	347.19	349.86	0.003504	8.34	620.09	147.71	0.53

HEC-RAS Plan: E River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	10286	1-YR	391.06	391.05	0.01	0.01	0.00		223.00		123.72	0.01
Plumtree	10286	2-YR	391.57	391.56	0.01	0.01	0.00		307.00		126.81	0.02
Plumtree	10286	10-YR	393.98	393.97	0.01	0.01	0.00	1.07	593.87	1.07	141.38	0.02
Plumtree	10286	50-YR	395.24	395.23	0.02	0.01	0.00	4.68	985.60	4.72	149.26	0.03
Plumtree	10286	100-YR	395.55	395.52	0.03	0.01	0.00	6.60	1186.70	6.70	151.35	0.04
Plumtree	10286	200-YR	395.86	395.83	0.03	0.01	0.01	9.22	1422.43	9.34	153.50	0.05
Plumtree	10044	1-YR	391.05	391.05	0.00	0.00	0.00		223.00		210.47	0.00
Plumtree	10044	2-YR	391.56	391.56	0.00	0.00	0.00		307.00		213.57	0.01
Plumtree	10044	10-YR	393.97	393.96	0.00	0.00	0.00	0.62	594.78	0.60	228.18	0.01
Plumtree	10044	50-YR	395.23	395.22	0.01	0.00	0.00	2.76	989.53	2.71	235.86	0.01
Plumtree	10044	100-YR	395.53	395.52	0.01	0.00	0.00	3.93	1192.23	3.85	237.66	0.01
Plumtree	10044	200-YR	395.84	395.83	0.01	0.01	0.00	5.50	1430.12	5.38	239.52	0.02
Plumtree	9814	1-YR	391.05	391.04	0.00	0.00	0.00		223.00		300.67	0.00
Plumtree	9814	2-YR	391.56	391.55	0.00	0.00	0.00		307.00		303.80	0.00
Plumtree	9814	10-YR	393.96	393.96	0.00	0.00	0.00	0.09	595.84	0.07	318.58	0.00
Plumtree	9814	50-YR	395.23	395.22	0.00	0.00	0.00	0.81	993.47	0.73	327.17	0.00
Plumtree	9814	100-YR	395.52	395.52	0.00	0.00	0.00	1.24	1197.63	1.13	330.12	0.01
Plumtree	9814	200-YR	395.83	395.83	0.01	0.00	0.00	1.87	1436.64	2.50	374.28	0.01
Plumtree	9762	1-YR	391.04	391.04	0.00	0.00	0.00		223.00		285.36	0.00
Plumtree	9762	2-YR	391.55	391.55	0.00	0.00	0.00		307.00		288.57	0.00
Plumtree	9762	10-YR	393.96	393.96	0.00	0.00	0.01	0.46	595.07	0.47	303.77	0.00
Plumtree	9762	50-YR	395.23	395.22	0.00	0.00	0.00	2.07	991.25	1.68	317.70	0.01
Plumtree	9762	100-YR	395.52	395.52	0.00	0.00	0.00	2.94	1194.61	2.45	327.56	0.01
Plumtree	9762	200-YR	395.83	395.82	0.01	0.00	0.00	4.12	1432.53	4.35	337.91	0.01
Plumtree	9732	1-YR	391.04	391.01	0.03			5.17	180.57	37.26	214.23	0.06
Plumtree	9732	2-YR	391.55	391.51	0.04			7.22	248.45	51.33	227.26	0.08
Plumtree	9732	10-YR	393.96	393.90	0.06			14.55	481.61	99.85	282.02	0.10
Plumtree	9732	50-YR	395.23	395.22	0.01			157.64	267.60	569.76	291.67	0.02
Plumtree	9732	100-YR	395.52	395.51	0.01			188.99	318.00	693.01	293.49	0.03
Plumtree	9732	200-YR	395.83	395.82	0.01			225.76	376.50	838.74	295.36	0.03
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	389.24	388.90	0.34	0.64	0.08		222.97	0.03	31.31	0.86
Plumtree	9589	2-YR	389.76	389.40	0.36	0.48	0.09	0.43	305.91	0.65	36.75	0.84
Plumtree	9589	10-YR	391.13	390.62	0.50	0.33	0.15	5.53	582.89	7.59	52.69	1.02
Plumtree	9589	50-YR	392.31	391.62	0.70	0.30	0.24	52.27	919.74	22.98	80.41	1.36
Plumtree	9589	100-YR	392.92	392.22	0.70	0.27	0.23	95.15	1069.62	35.23	161.74	1.35
Plumtree	9589	200-YR	393.46	392.89	0.58	0.24	0.16	146.77	1161.45	132.78	267.41	1.18
Plumtree	9499	1-YR	388.53	388.34	0.19	0.43	0.00		131.73	6.27	35.13	0.49
Plumtree	9499	2-YR	389.19	389.02	0.18	0.44	0.02		190.79	19.21	52.25	0.45
Plumtree	9499	10-YR	390.64	390.45	0.19	0.36	0.02	39.42	396.20	108.39	153.93	0.52
Plumtree	9499	50-YR	391.77	391.56	0.21	0.27	0.01	173.98	611.32	252.70	166.43	0.61
Plumtree	9499	100-YR	392.41	392.18	0.23	0.26	0.00	279.77	749.23	355.00	173.04	0.67
Plumtree	9499	200-YR	393.06	392.81	0.25	0.25	0.00	407.25	896.39	472.36	178.74	0.72
Plumtree	9398	1-YR	388.10	387.89	0.21	0.25	0.02		138.00		14.82	0.48
Plumtree	9398	2-YR	388.74	388.41	0.33	0.35	0.03		210.00		15.94	0.72
Plumtree	9398	10-YR	390.26	389.86	0.40	0.56	0.03	75.68	407.10	61.22	157.50	1.02
Plumtree	9398	50-YR	391.49	391.22	0.27	0.49	0.08	298.53	526.33	213.14	179.00	0.88
Plumtree	9398	100-YR	392.15	391.89	0.26	0.47	0.10	448.82	610.46	324.72	184.66	0.90
Plumtree	9398	200-YR	392.81	392.54	0.27	0.47	0.11	633.50	710.43	432.08	197.20	0.96
Plumtree	9301	1-YR	387.83	387.69	0.14	0.44	0.04	1.34	136.66		27.68	0.30
Plumtree	9301	2-YR	388.36	388.13	0.23	0.50	0.02	7.04	202.96		32.77	0.48
Plumtree	9301	10-YR	389.67	388.95	0.71	0.79	0.11	44.13	474.13	25.74	86.36	1.56
Plumtree	9301	50-YR	390.92	389.81	1.10	0.81	0.23	119.87	770.00	148.13	96.92	2.63
Plumtree	9301	100-YR	391.58	390.34	1.24	0.82	0.26	181.78	939.61	262.61	102.02	3.10
Plumtree	9301	200-YR	392.22	390.81	1.41	0.83	0.30	255.28	1122.83	397.89	106.65	3.64
Plumtree	9196	1-YR	387.36	386.85	0.51	0.95	0.12		138.00		15.28	1.32
Plumtree	9196	2-YR	387.84	387.43	0.41	0.89	0.08	23.76	184.14	2.10	108.92	1.13
Plumtree	9196	10-YR	388.78	388.42	0.36	0.93	0.05	192.42	311.71	39.86	139.16	1.25
Plumtree	9196	50-YR	389.78	389.43	0.35	0.98	0.02	449.41	457.16	131.43	151.12	1.34
Plumtree	9196	100-YR	390.35	389.97	0.38	1.04	0.00	632.27	554.50	197.23	156.51	1.47
Plumtree	9196	200-YR	390.92	390.51	0.41	1.07	0.00	841.21	660.83	273.96	162.18	1.60
Plumtree	8987	1-YR	386.29	386.17	0.12	0.92	0.03	5.42	119.71	12.87	103.45	0.31
Plumtree	8987	2-YR	386.70	386.56	0.13	0.99	0.03	16.95	155.70	37.35	115.60	0.38
Plumtree	8987	10-YR	387.80	387.60	0.19	1.10	0.02	80.30	291.15	172.55	128.49	0.65
Plumtree	8987	50-YR	388.79	388.49	0.29	1.08	0.00	189.58	464.78	383.64	138.89	1.04
Plumtree	8987	100-YR	389.31	388.95	0.36	1.01	0.04	273.58	577.25	533.17	143.14	1.31
Plumtree	8987	200-YR	389.84	389.42	0.42	0.95	0.06	374.46	695.61	705.94	147.60	1.56

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	8753	1-YR	385.34	384.97	0.38	1.29	0.05	13.73	124.14	0.13	70.27	1.00
Plumtree	8753	2-YR	385.68	385.26	0.42	1.14	0.07	47.49	160.53	1.98	79.93	1.25
Plumtree	8753	10-YR	386.68	386.28	0.40	0.91	0.06	257.46	263.79	22.75	125.85	1.50
Plumtree	8753	50-YR	387.70	387.41	0.29	0.78	0.01	635.56	344.87	57.57	205.43	1.33
Plumtree	8753	100-YR	388.26	388.03	0.23	0.70	0.01	942.90	367.18	73.92	238.13	1.12
Plumtree	8753	200-YR	388.83	388.62	0.21	0.64	0.01	1274.63	399.09	102.28	251.79	1.03
Plumtree	8579	1-YR	384.00	383.78	0.22	0.51	0.04	20.08	117.54	0.38	78.26	0.64
Plumtree	8579	2-YR	384.43	384.24	0.19	0.49	0.03	55.12	147.92	6.96	91.33	0.60
Plumtree	8579	10-YR	385.71	385.51	0.20	0.55	0.01	213.33	267.86	62.81	113.20	0.71
Plumtree	8579	50-YR	386.91	386.65	0.26	0.63	0.01	444.30	429.10	164.60	133.70	0.96
Plumtree	8579	100-YR	387.55	387.25	0.31	0.68	0.00	610.97	534.90	238.13	146.52	1.13
Plumtree	8579	200-YR	388.18	387.84	0.34	0.73	0.00	800.97	640.48	334.55	154.78	1.27
Plumtree	8374	1-YR	383.45	383.38	0.07	0.44	0.05	24.58	113.42		81.48	0.20
Plumtree	8374	2-YR	383.91	383.82	0.09	0.46	0.04	57.61	152.39		87.68	0.25
Plumtree	8374	10-YR	385.15	384.99	0.16	0.54	0.03	230.69	313.18	0.12	105.86	0.47
Plumtree	8374	50-YR	386.28	386.03	0.25	0.64	0.03	513.69	519.55	4.76	119.76	0.75
Plumtree	8374	100-YR	386.87	386.56	0.31	0.69	0.03	717.97	654.25	11.78	125.89	0.94
Plumtree	8374	200-YR	387.45	387.07	0.38	0.75	0.03	952.95	800.75	22.30	134.02	1.15
Plumtree	8229	1-YR	382.96	382.41	0.56	1.01	0.09	5.69	130.06	2.25	46.11	1.41
Plumtree	8229	2-YR	383.41	382.88	0.53	1.19	0.03	33.52	168.39	8.10	66.45	1.46
Plumtree	8229	10-YR	384.57	384.10	0.47	1.24	0.02	186.70	283.40	73.89	104.88	1.65
Plumtree	8229	50-YR	385.61	385.04	0.56	1.35	0.02	412.57	423.98	201.45	131.07	2.19
Plumtree	8229	100-YR	386.15	385.56	0.59	1.40	0.03	576.13	501.12	306.75	138.54	2.40
Plumtree	8229	200-YR	386.68	386.04	0.64	1.46	0.03	762.14	586.34	427.52	145.29	2.68
Plumtree	8094	1-YR	381.70	381.43	0.27	0.73	0.05	3.46	134.53	0.01	39.43	0.63
Plumtree	8094	2-YR	382.15	381.74	0.42	0.91	0.09	13.70	194.01	2.29	64.65	1.01
Plumtree	8094	10-YR	383.31	382.65	0.66	1.17	0.15	107.34	374.20	62.46	115.17	1.90
Plumtree	8094	50-YR	384.23	383.46	0.78	1.31	0.17	277.48	552.91	207.60	140.41	2.60
Plumtree	8094	100-YR	384.72	383.83	0.89	1.40	0.19	394.12	666.48	323.40	148.91	3.12
Plumtree	8094	200-YR	385.18	384.21	0.97	1.46	0.20	534.31	780.13	461.56	157.37	3.59
Plumtree	7954	1-YR	380.92	380.82	0.09	1.16	0.01	55.45	61.57	20.98	152.31	0.49
Plumtree	7954	2-YR	381.15	381.05	0.10	1.20	0.01	86.97	77.52	45.51	156.16	0.58
Plumtree	7954	10-YR	381.88	381.73	0.15	1.30	0.00	231.56	141.26	171.18	167.67	0.94
Plumtree	7954	50-YR	382.63	382.42	0.22	1.32	0.01	445.26	222.51	370.23	183.37	1.34
Plumtree	7954	100-YR	383.06	382.80	0.25	1.31	0.01	603.20	272.87	507.93	189.49	1.56
Plumtree	7954	200-YR	383.49	383.19	0.29	1.30	0.01	784.91	326.98	664.11	195.55	1.76
Plumtree	7800	1-YR	379.75	379.69	0.06	1.32	0.00	30.94	37.61	69.45	165.61	0.52
Plumtree	7800	2-YR	379.93	379.85	0.08	1.27	0.01	49.25	52.33	108.42	173.42	0.66
Plumtree	7800	10-YR	380.57	380.44	0.14	1.11	0.03	142.76	112.81	288.42	184.50	1.00
Plumtree	7800	50-YR	381.30	381.11	0.19	0.97	0.04	291.15	195.28	551.57	195.31	1.29
Plumtree	7800	100-YR	381.74	381.51	0.23	0.96	0.05	399.28	250.87	733.84	201.79	1.44
Plumtree	7800	200-YR	382.18	381.92	0.26	0.95	0.06	525.07	312.45	938.48	208.37	1.59
Plumtree	7548	1-YR	378.43	378.38	0.06	0.94	0.00	17.46	53.40	67.14	250.77	0.32
Plumtree	7548	2-YR	378.67	378.62	0.05	0.90	0.00	48.63	62.61	98.76	273.42	0.33
Plumtree	7548	10-YR	379.44	379.39	0.05	0.67	0.00	223.11	96.48	224.41	291.26	0.38
Plumtree	7548	50-YR	380.29	380.24	0.06	0.54	0.00	502.45	137.54	398.01	309.90	0.43
Plumtree	7548	100-YR	380.73	380.66	0.07	0.48	0.00	697.48	166.04	520.48	315.66	0.48
Plumtree	7548	200-YR	381.17	381.10	0.08	0.43	0.01	921.45	196.62	657.93	321.38	0.54
Plumtree	7367	1-YR	377.50	377.45	0.05	0.60	0.01			138.00	92.27	
Plumtree	7367	2-YR	377.76	377.70	0.06	0.62	0.01	0.77		209.23	118.92	
Plumtree	7367	10-YR	378.76	378.69	0.07	0.26	0.01	55.18	0.84	487.98	209.85	0.08
Plumtree	7367	50-YR	379.75	379.69	0.06	0.24	0.00	216.17	19.84	801.99	378.48	0.25
Plumtree	7367	100-YR	380.25	380.19	0.06	0.23	0.00	352.70	35.94	995.36	404.87	0.27
Plumtree	7367	200-YR	380.73	380.68	0.06	0.22	0.00	515.58	54.07	1206.35	413.60	0.30
Plumtree	7216	1-YR	376.89	376.86	0.03	0.79	0.02	37.55	90.45	10.00	180.11	0.12
Plumtree	7216	2-YR	377.13	377.09	0.04	0.84	0.02	58.91	131.14	19.95	194.12	0.16
Plumtree	7216	10-YR	378.49	378.45	0.03	0.14	0.00	167.43	281.12	95.46	258.54	0.12
Plumtree	7216	50-YR	379.51	379.46	0.05	0.15	0.00	332.82	490.45	214.73	290.59	0.17
Plumtree	7216	100-YR	380.02	379.96	0.06	0.17	0.00	452.14	632.00	299.86	305.90	0.21
Plumtree	7216	200-YR	380.52	380.44	0.08	0.19	0.00	598.53	783.24	394.24	316.41	0.25
Plumtree	7030	1-YR	376.09	375.87	0.22	1.00	0.02	68.08	66.47	3.44	143.87	1.12
Plumtree	7030	2-YR	376.27	376.03	0.25	0.88	0.03	117.87	83.90	8.23	153.65	1.42
Plumtree	7030	10-YR	378.35	378.32	0.02	0.04	0.00	383.30	75.55	85.15	219.34	0.15
Plumtree	7030	50-YR	379.35	379.31	0.04	0.06	0.00	730.94	123.08	183.98	232.39	0.24
Plumtree	7030	100-YR	379.84	379.79	0.05	0.08	0.00	979.78	156.18	248.04	241.45	0.32
Plumtree	7030	200-YR	380.32	380.25	0.07	0.10	0.00	1265.64	194.34	316.03	257.23	0.40

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	6893	1-YR	374.06	373.90	0.16	0.76	0.01	19.74	117.42	0.84	97.63	0.46
Plumtree	6893	2-YR	374.47	374.33	0.14	0.27	0.02	58.69	147.96	3.35	114.75	0.44
Plumtree	6893	10-YR	378.31	378.29	0.01	0.01	0.00	306.29	171.60	66.10	225.51	0.05
Plumtree	6893	50-YR	379.29	379.26	0.03	0.03	0.00	603.72	297.24	137.04	243.88	0.11
Plumtree	6893	100-YR	379.76	379.72	0.04	0.04	0.00	814.22	381.03	188.76	252.54	0.16
Plumtree	6893	200-YR	380.22	380.16	0.05	0.05	0.00	1055.71	471.54	248.75	260.30	0.21
Plumtree	6766	1-YR	373.30	373.06	0.24	0.38	0.03	4.08	133.92		71.68	0.66
Plumtree	6766	2-YR	374.18	374.11	0.07	0.11	0.00	60.82	146.67	2.51	112.88	0.20
Plumtree	6766	10-YR	378.29	378.28	0.01	0.01	0.00	269.22	202.10	72.68	270.46	0.04
Plumtree	6766	50-YR	379.26	379.23	0.02	0.02	0.00	517.80	358.22	161.97	316.94	0.08
Plumtree	6766	100-YR	379.72	379.69	0.03	0.02	0.00	703.12	460.34	220.54	340.88	0.12
Plumtree	6766	200-YR	380.17	380.12	0.04	0.03	0.00	903.67	566.44	305.89	356.35	0.16
Plumtree	6663	1-YR	372.88	372.75	0.12	0.25	0.01	0.94	137.06		47.55	0.28
Plumtree	6663	2-YR	374.07	374.01	0.06	0.09	0.00	44.37	164.91	0.72	113.48	0.15
Plumtree	6663	10-YR	378.28	378.27	0.01	0.01	0.00	267.29	189.70	87.01	321.09	0.03
Plumtree	6663	50-YR	379.24	379.22	0.02	0.02	0.00	525.04	314.15	198.81	341.03	0.07
Plumtree	6663	100-YR	379.69	379.67	0.02	0.02	0.00	705.12	395.96	282.93	349.71	0.10
Plumtree	6663	200-YR	380.13	380.10	0.03	0.03	0.00	911.95	482.90	381.15	357.45	0.13
Plumtree	6568	1-YR	372.62	372.40	0.22	0.49	0.00	4.79	146.21		42.32	0.50
Plumtree	6568	2-YR	373.98	373.89	0.09	0.11	0.00	58.11	162.68	11.22	116.24	0.23
Plumtree	6568	10-YR	378.27	378.26	0.01	0.01	0.00	309.30	164.77	135.92	274.09	0.05
Plumtree	6568	50-YR	379.22	379.20	0.02	0.02	0.00	610.38	271.78	269.84	295.82	0.10
Plumtree	6568	100-YR	379.67	379.64	0.03	0.03	0.00	813.14	339.72	364.14	307.72	0.14
Plumtree	6568	200-YR	380.10	380.06	0.04	0.04	0.00	1046.29	416.97	479.74	321.83	0.19
Plumtree	6454	1-YR	372.13	371.91	0.22	0.27	0.04	0.00	150.98	0.02	24.45	0.55
Plumtree	6454	2-YR	373.87	373.78	0.08	0.07	0.01	15.31	204.95	11.74	91.17	0.19
Plumtree	6454	10-YR	378.26	378.25	0.01	0.01	0.00	113.23	249.45	247.32	224.50	0.04
Plumtree	6454	50-YR	379.20	379.17	0.03	0.03	0.01	225.46	432.08	494.46	258.13	0.10
Plumtree	6454	100-YR	379.64	379.59	0.04	0.04	0.01	305.12	548.99	662.88	273.33	0.14
Plumtree	6454	200-YR	380.06	380.00	0.06	0.05	0.01	399.87	681.88	861.25	290.50	0.20
Plumtree	6350	1-YR	371.82	371.73	0.10	0.11	0.01		151.00		23.24	0.21
Plumtree	6350	2-YR	373.79	373.72	0.06	0.04	0.00	0.13	231.23	0.64	38.15	0.12
Plumtree	6350	10-YR	378.25	378.20	0.05	0.01	0.00	105.38	470.23	34.39	209.04	0.09
Plumtree	6350	50-YR	379.16	379.06	0.10	0.03	0.01	241.86	818.65	91.49	246.90	0.21
Plumtree	6350	100-YR	379.59	379.44	0.15	0.04	0.01	344.63	1036.72	135.65	263.10	0.30
Plumtree	6350	200-YR	380.00	379.79	0.20	0.06	0.01	475.48	1277.20	190.32	275.83	0.42
Plumtree	6296	1-YR	371.70	371.53	0.18			15.19	135.81		23.87	0.43
Plumtree	6296	2-YR	373.75	373.65	0.10			45.89	183.55	2.56	37.07	0.22
Plumtree	6296	10-YR	378.23	378.16	0.07			216.69	349.65	43.66	147.53	0.18
Plumtree	6296	50-YR	379.13	378.95	0.17			469.18	607.01	75.81	190.31	0.45
Plumtree	6296	100-YR	379.53	379.28	0.25			650.54	770.64	95.83	231.75	0.67
Plumtree	6296	200-YR	379.92	379.57	0.35			856.01	942.73	144.26	250.83	0.94
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	370.43	370.38	0.04	0.10	0.18	0.03	150.97	0.01	28.87	0.09
Plumtree	6197	2-YR	371.32	371.26	0.06	0.11	0.28	0.47	231.32	0.21	31.36	0.12
Plumtree	6197	10-YR	373.42	373.23	0.19	0.17	0.24	7.33	599.10	3.57	36.95	0.32
Plumtree	6197	50-YR	375.23	374.82	0.41	0.24	0.30	22.86	1114.80	14.34	49.10	0.64
Plumtree	6197	100-YR	376.12	375.54	0.58	0.28	0.31	41.30	1452.35	23.35	67.97	0.89
Plumtree	6197	200-YR	377.02	376.24	0.77	0.33	0.31	76.55	1831.71	34.74	95.01	1.17
Plumtree	6122	1-YR	370.15	369.52	0.63	0.53	0.15		151.00		11.18	1.54
Plumtree	6122	2-YR	370.93	369.92	1.00	0.45	0.27		232.00		14.36	2.46
Plumtree	6122	10-YR	373.01	372.01	1.00	0.21	0.27	15.43	556.77	37.80	43.07	2.19
Plumtree	6122	50-YR	374.70	373.29	1.41	0.27	0.38	88.06	939.81	124.13	72.37	3.06
Plumtree	6122	100-YR	375.53	373.92	1.60	0.29	0.43	166.81	1163.11	187.08	78.94	3.53
Plumtree	6122	200-YR	376.37	374.55	1.82	0.31	0.49	266.16	1411.36	265.48	89.13	4.03
Plumtree	6028	1-YR	369.47	369.33	0.14	0.40	0.01	17.91	132.64	0.45	62.06	0.36
Plumtree	6028	2-YR	370.18	370.06	0.12	0.29	0.02	51.89	176.32	3.79	79.04	0.32
Plumtree	6028	10-YR	372.53	372.44	0.09	0.12	0.01	229.03	330.45	50.53	147.50	0.27
Plumtree	6028	50-YR	373.68	373.54	0.15	0.18	0.02	499.50	529.53	122.97	202.70	0.45
Plumtree	6028	100-YR	374.29	374.11	0.18	0.21	0.03	692.57	647.47	176.96	215.00	0.55
Plumtree	6028	200-YR	374.90	374.70	0.21	0.24	0.03	917.71	774.60	250.69	227.81	0.65
Plumtree	5926	1-YR	369.06	368.80	0.26	1.01	0.04	30.95	119.99	0.06	28.41	0.72
Plumtree	5926	2-YR	369.88	369.60	0.28	0.33	0.03	55.79	170.97	5.24	49.46	0.75
Plumtree	5926	10-YR	372.40	372.23	0.17	0.12	0.01	193.97	285.02	131.01	153.93	0.53
Plumtree	5926	50-YR	373.48	373.16	0.32	0.20	0.03	355.34	473.54	323.12	163.39	1.03
Plumtree	5926	100-YR	374.05	373.62	0.43	0.25	0.04	460.15	590.72	466.14	168.04	1.38
Plumtree	5926	200-YR	374.63	374.09	0.54	0.29	0.05	578.26	718.33	646.41	172.27	1.77

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5824	1-YR	368.00	367.30	0.70	0.53	0.16		151.00		16.28	1.85
Plumtree	5824	2-YR	369.51	369.35	0.16	0.10	0.02	0.02	231.56	0.41	35.14	0.36
Plumtree	5824	10-YR	372.27	372.13	0.13	0.06	0.00	51.29	500.35	58.36	157.75	0.27
Plumtree	5824	50-YR	373.26	373.03	0.23	0.11	0.01	142.96	822.26	186.78	167.05	0.51
Plumtree	5824	100-YR	373.76	373.47	0.29	0.15	0.02	211.19	1020.91	284.90	171.65	0.66
Plumtree	5824	200-YR	374.28	373.92	0.36	0.19	0.03	296.29	1238.11	408.60	176.46	0.83
Plumtree	5745	1-YR	367.19	367.02	0.18	0.07	0.02		151.00		20.27	0.40
Plumtree	5745	2-YR	369.38	369.30	0.08	0.02	0.01		229.39	2.61	39.23	0.16
Plumtree	5745	10-YR	372.20	372.08	0.12	0.02	0.01	36.84	532.21	40.95	100.42	0.22
Plumtree	5745	50-YR	373.14	372.83	0.31	0.04	0.02	103.45	962.77	85.78	116.00	0.56
Plumtree	5745	100-YR	373.60	373.13	0.47	0.06	0.03	153.78	1246.77	116.45	131.10	0.85
Plumtree	5745	200-YR	374.06	373.37	0.69	0.08	0.05	214.96	1575.70	152.34	144.09	1.27
Plumtree	5711	1-YR	367.10	366.99	0.10				151.00		21.58	0.23
Plumtree	5711	2-YR	369.36	369.30	0.06			0.01	225.78	6.22	46.63	0.11
Plumtree	5711	10-YR	372.18	372.08	0.10			25.04	515.89	69.07	120.99	0.18
Plumtree	5711	50-YR	373.08	372.83	0.25			68.30	932.20	151.50	166.33	0.47
Plumtree	5711	100-YR	373.51	373.14	0.37			105.44	1187.13	224.43	178.73	0.70
Plumtree	5711	200-YR	373.93	373.40	0.53			153.09	1480.97	308.94	184.27	1.01
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	366.14	366.07	0.06	0.06	0.01		151.00		27.84	0.13
Plumtree	5614	2-YR	367.04	366.96	0.08	0.06	0.01	0.03	231.97		35.28	0.16
Plumtree	5614	10-YR	371.28	371.23	0.05	0.01	0.00	89.75	484.46	35.79	176.53	0.10
Plumtree	5614	50-YR	372.57	372.48	0.09	0.02	0.02	202.57	811.47	137.96	213.81	0.18
Plumtree	5614	100-YR	373.09	372.97	0.13	0.02	0.03	269.82	1026.81	220.37	234.03	0.26
Plumtree	5614	200-YR	373.48	373.30	0.17	0.03	0.04	367.18	1265.45	310.37	239.07	0.36
Plumtree	5560	1-YR	366.07	365.98	0.09	0.12	0.02		151.00		23.48	0.20
Plumtree	5560	2-YR	366.97	366.85	0.12	0.12	0.02		232.00		27.09	0.24
Plumtree	5560	10-YR	371.26	371.22	0.04	0.02	0.01	136.09	408.68	65.23	270.41	0.09
Plumtree	5560	50-YR	372.54	372.48	0.06	0.02	0.01	359.19	617.38	175.43	311.32	0.15
Plumtree	5560	100-YR	373.04	372.97	0.07	0.03	0.01	501.76	758.56	256.67	331.39	0.19
Plumtree	5560	200-YR	373.41	373.31	0.10	0.04	0.02	669.50	926.15	347.35	343.03	0.27
Plumtree	5510	1-YR	365.92	365.61	0.31	0.06	0.01		151.00		15.67	0.73
Plumtree	5510	2-YR	366.82	366.46	0.36	0.05	0.01		232.00		18.29	0.80
Plumtree	5510	10-YR	371.24	371.15	0.10	0.01	0.02	86.81	435.57	87.62	219.37	0.21
Plumtree	5510	50-YR	372.50	372.36	0.14	0.01	0.03	228.77	678.37	244.86	248.75	0.35
Plumtree	5510	100-YR	373.00	372.82	0.18	0.01	0.05	320.93	834.22	361.85	255.26	0.46
Plumtree	5510	200-YR	373.35	373.10	0.25			424.71	1027.40	490.89	259.24	0.65
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	365.68	365.53	0.15	0.14	0.01		151.00		18.12	0.33
Plumtree	5474	2-YR	366.58	366.38	0.20	0.15	0.02		232.00		20.64	0.42
Plumtree	5474	10-YR	371.17	371.09	0.08	0.02	0.00	107.06	452.21	50.73	170.87	0.16
Plumtree	5474	50-YR	372.40	372.27	0.13	0.04	0.00	269.34	727.52	155.14	202.16	0.29
Plumtree	5474	100-YR	372.87	372.70	0.17	0.05	0.00	375.27	903.77	237.96	207.28	0.41
Plumtree	5474	200-YR	373.32	373.09	0.22	0.06	0.00	501.34	1100.78	340.89	212.04	0.54
Plumtree	5419	1-YR	365.53	365.34	0.19	0.32	0.00		151.00		16.55	0.42
Plumtree	5419	2-YR	366.41	366.16	0.25	0.33	0.00		232.00		18.47	0.53
Plumtree	5419	10-YR	371.15	371.08	0.07	0.03	0.01	109.75	405.57	94.67	189.21	0.16
Plumtree	5419	50-YR	372.36	372.24	0.13	0.05	0.02	277.07	664.19	210.74	220.28	0.31
Plumtree	5419	100-YR	372.82	372.65	0.17	0.07	0.02	385.94	827.53	303.53	225.14	0.43
Plumtree	5419	200-YR	373.26	373.03	0.23	0.09	0.02	515.52	1010.88	416.61	229.40	0.58
Plumtree	5323	1-YR	365.21	365.00	0.21	0.59	0.02		151.00		16.95	0.49
Plumtree	5323	2-YR	366.08	365.82	0.27	0.58	0.02	1.47	230.53		39.60	0.58
Plumtree	5323	10-YR	371.11	371.07	0.03	0.02	0.00	231.46	313.95	64.59	149.60	0.09
Plumtree	5323	50-YR	372.30	372.23	0.07	0.04	0.01	466.38	534.56	151.07	165.88	0.19
Plumtree	5323	100-YR	372.73	372.63	0.10	0.06	0.01	627.83	682.13	207.04	172.81	0.29
Plumtree	5323	200-YR	373.14	373.00	0.14	0.08	0.01	819.27	849.06	274.66	178.70	0.41
Plumtree	5209	1-YR	364.61	364.23	0.38	0.91	0.01		151.00		13.63	0.88
Plumtree	5209	2-YR	365.48	365.00	0.48	0.76	0.01	0.16	231.84		20.81	1.05
Plumtree	5209	10-YR	371.08	371.06	0.03	0.02	0.00	228.57	254.77	126.66	167.60	0.08
Plumtree	5209	50-YR	372.25	372.20	0.05	0.04	0.01	468.66	425.63	257.71	194.66	0.17
Plumtree	5209	100-YR	372.67	372.59	0.08	0.06	0.01	619.78	545.80	351.41	205.40	0.26
Plumtree	5209	200-YR	373.05	372.94	0.11	0.09	0.02	796.11	683.54	463.35	216.20	0.37
Plumtree	5107	1-YR	363.69	363.19	0.50	0.75	0.01		151.00		13.19	1.21
Plumtree	5107	2-YR	364.71	364.27	0.44	0.35	0.05		232.00		17.95	1.00
Plumtree	5107	10-YR	371.06	370.99	0.06	0.02	0.00	35.05	459.29	115.65	223.75	0.12

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5107	50-YR	372.20	372.07	0.13	0.03	0.01	148.38	780.95	222.68	273.52	0.26
Plumtree	5107	100-YR	372.59	372.40	0.19	0.04	0.01	225.06	996.61	295.32	298.47	0.40
Plumtree	5107	200-YR	372.95	372.67	0.28	0.06	0.02	320.36	1242.29	380.35	316.79	0.58
Plumtree	5040	1-YR	362.92	362.45	0.47				151.00		15.10	1.15
Plumtree	5040	2-YR	364.30	364.04	0.27				232.00		20.80	0.58
Plumtree	5040	10-YR	371.04	370.98	0.06			65.27	519.96	24.76	228.63	0.11
Plumtree	5040	50-YR	372.16	372.05	0.11			233.01	841.47	77.52	283.04	0.21
Plumtree	5040	100-YR	372.54	372.39	0.15			351.36	1051.91	113.74	293.96	0.30
Plumtree	5040	200-YR	372.87	372.65	0.22			481.84	1302.70	158.47	314.66	0.44
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	362.07	361.79	0.28	0.28	0.07		151.00		18.86	0.67
Plumtree	4932	2-YR	363.10	362.84	0.25	0.21	0.05		232.00		22.28	0.56
Plumtree	4932	10-YR	368.26	368.11	0.15	0.03	0.05	5.22	596.00	8.78	49.27	0.24
Plumtree	4932	50-YR	372.05	371.94	0.11	0.02	0.03	201.76	879.51	70.73	224.36	0.20
Plumtree	4932	100-YR	372.46	372.29	0.17	0.03	0.04	292.37	1115.62	109.01	239.03	0.29
Plumtree	4932	200-YR	372.82	372.59	0.23	0.04	0.05	411.52	1375.82	155.67	244.23	0.42
Plumtree	4845	1-YR	361.72	361.59	0.13	0.21	0.01		151.00		19.15	0.29
Plumtree	4845	2-YR	362.84	362.68	0.15	0.16	0.01		232.00		21.90	0.31
Plumtree	4845	10-YR	368.18	368.12	0.06	0.01	0.01	143.05	454.71	12.25	117.60	0.11
Plumtree	4845	50-YR	372.00	371.95	0.05	0.01	0.01	352.39	709.19	90.41	174.54	0.11
Plumtree	4845	100-YR	372.39	372.30	0.08	0.01	0.02	470.35	918.92	127.74	183.08	0.17
Plumtree	4845	200-YR	372.73	372.61	0.12	0.02	0.03	608.40	1159.56	175.04	190.62	0.25
Plumtree	4745	1-YR	361.51	361.39	0.12	0.15	0.01		151.00		24.53	0.27
Plumtree	4745	2-YR	362.67	362.56	0.11	0.12	0.01		232.00		30.42	0.24
Plumtree	4745	10-YR	368.15	368.14	0.01	0.01	0.00	111.65	315.55	182.80	263.74	0.03
Plumtree	4745	50-YR	371.98	371.97	0.01	0.00	0.00	261.72	436.48	453.80	325.07	0.03
Plumtree	4745	100-YR	372.35	372.34	0.01	0.00	0.00	349.45	563.63	603.92	332.61	0.04
Plumtree	4745	200-YR	372.68	372.66	0.02	0.01	0.00	453.76	711.34	777.90	340.76	0.06
Plumtree	4636	1-YR	361.34	361.26	0.08	0.09	0.00		151.00		23.05	0.17
Plumtree	4636	2-YR	362.54	362.45	0.09	0.07	0.00	0.21	231.69	0.10	36.40	0.17
Plumtree	4636	10-YR	368.15	368.14	0.01	0.01	0.00	45.89	241.13	322.98	358.17	0.02
Plumtree	4636	50-YR	371.98	371.97	0.00	0.00	0.00	159.99	309.48	682.53	517.38	0.02
Plumtree	4636	100-YR	372.35	372.34	0.01	0.00	0.00	218.55	395.27	903.18	528.16	0.03
Plumtree	4636	200-YR	372.67	372.66	0.01	0.00	0.00	288.19	493.50	1161.31	537.61	0.04
Plumtree	4550	1-YR	361.25	361.17	0.08				151.00		25.53	0.17
Plumtree	4550	2-YR	362.47	362.39	0.08				231.62	0.38	39.30	0.16
Plumtree	4550	10-YR	368.14	368.09	0.04			55.94	501.12	52.94	374.22	0.07
Plumtree	4550	50-YR	371.98	371.97	0.00			139.64	333.43	678.93	497.04	0.01
Plumtree	4550	100-YR	372.35	372.34	0.01			190.49	427.39	899.13	520.37	0.02
Plumtree	4550	200-YR	372.67	372.66	0.01			251.30	534.95	1156.75	587.97	0.03
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	359.25	359.23	0.02	0.01	0.00		151.00		27.36	0.04
Plumtree	4344	2-YR	359.77	359.73	0.04	0.01	0.00		232.00		28.13	0.07
Plumtree	4344	10-YR	361.65	361.50	0.15	0.04	0.01	0.08	607.24	2.68	48.23	0.24
Plumtree	4344	50-YR	363.04	362.69	0.34	0.07	0.05	11.70	1113.65	26.65	103.22	0.56
Plumtree	4344	100-YR	363.76	363.30	0.46	0.08	0.08	32.62	1414.12	70.27	123.84	0.76
Plumtree	4344	200-YR	364.58	364.04	0.54	0.09	0.11	73.50	1710.96	158.54	139.41	0.91
Plumtree	4289	1-YR	359.24	359.23	0.02	0.05	0.02		151.00		32.82	0.04
Plumtree	4289	2-YR	359.75	359.72	0.03	0.07	0.02		232.00		34.65	0.06
Plumtree	4289	10-YR	361.59	361.48	0.12	0.15	0.04		606.40	3.60	64.06	0.20
Plumtree	4289	50-YR	362.91	362.68	0.24	0.19	0.01	33.91	1075.77	42.32	153.94	0.40
Plumtree	4289	100-YR	363.60	363.30	0.29	0.19	0.00	80.21	1341.15	95.65	169.48	0.51
Plumtree	4289	200-YR	364.38	364.06	0.32	0.17	0.02	164.48	1599.45	179.07	182.02	0.58
Plumtree	4185	1-YR	359.17	358.95	0.23	0.55	0.01		174.00		21.24	0.52
Plumtree	4185	2-YR	359.66	359.40	0.26	0.56	0.01		227.00		22.73	0.57
Plumtree	4185	10-YR	361.40	360.89	0.51	0.54	0.08	51.64	557.36	0.00	116.15	1.11
Plumtree	4185	50-YR	362.71	362.34	0.38	0.34	0.06	339.70	780.44	45.87	215.64	0.97
Plumtree	4185	100-YR	363.41	363.10	0.31	0.29	0.04	534.85	869.79	124.37	248.13	0.85
Plumtree	4185	200-YR	364.19	363.93	0.26	0.24	0.04	776.08	980.12	242.81	283.05	0.79
Plumtree	4033	1-YR	358.61	358.42	0.20	0.48	0.02		174.00		20.27	0.44
Plumtree	4033	2-YR	359.10	358.86	0.24	0.48	0.02		227.00		21.55	0.51
Plumtree	4033	10-YR	360.77	360.54	0.23	0.31	0.01	6.93	433.21	168.86	162.74	0.59
Plumtree	4033	50-YR	362.31	362.15	0.17	0.15	0.01	77.37	584.16	504.46	245.72	0.50
Plumtree	4033	100-YR	363.07	362.90	0.17	0.13	0.01	147.47	702.02	679.51	297.45	0.55
Plumtree	4033	200-YR	363.92	363.78	0.14	0.11	0.01	228.98	771.42	998.60	318.75	0.50

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	3930	1-YR	358.11	357.74	0.37	0.59	0.04	0.01	173.99		18.13	0.88
Plumtree	3930	2-YR	358.60	358.17	0.43	0.55	0.05	0.81	226.19		22.61	0.96
Plumtree	3930	10-YR	360.46	360.11	0.35	0.30	0.04	35.69	438.63	134.68	185.67	0.89
Plumtree	3930	50-YR	362.16	362.02	0.13	0.14	0.00	129.02	489.12	547.86	230.03	0.46
Plumtree	3930	100-YR	362.93	362.80	0.12	0.12	0.00	198.06	556.59	774.34	245.84	0.45
Plumtree	3930	200-YR	363.80	363.68	0.12	0.11	0.00	306.23	637.88	1054.89	262.03	0.45
Plumtree	3816	1-YR	357.49	357.25	0.24	0.42	0.01		172.43	1.57	27.81	0.53
Plumtree	3816	2-YR	357.99	357.73	0.27	0.41	0.00	0.03	219.33	7.64	41.77	0.58
Plumtree	3816	10-YR	360.12	359.90	0.22	0.25	0.00	38.44	405.96	164.60	141.65	0.55
Plumtree	3816	50-YR	362.02	361.88	0.14	0.16	0.01	140.92	527.76	497.32	199.62	0.44
Plumtree	3816	100-YR	362.80	362.66	0.14	0.15	0.01	218.90	606.19	703.91	218.36	0.45
Plumtree	3816	200-YR	363.69	363.54	0.14	0.14	0.01	321.88	706.24	970.88	230.64	0.48
Plumtree	3688	1-YR	357.06	356.85	0.21	0.47	0.00	0.34	173.66		20.09	0.45
Plumtree	3688	2-YR	357.58	357.32	0.26	0.44	0.01	2.58	223.28	1.14	37.37	0.53
Plumtree	3688	10-YR	359.86	359.60	0.26	0.27	0.00	63.93	431.56	113.51	115.64	0.61
Plumtree	3688	50-YR	361.86	361.66	0.20	0.18	0.00	191.57	588.09	386.34	173.32	0.56
Plumtree	3688	100-YR	362.65	362.46	0.19	0.18	0.01	297.86	674.53	556.62	185.32	0.58
Plumtree	3688	200-YR	363.54	363.35	0.19	0.18	0.01	435.48	778.01	785.51	196.44	0.62
Plumtree	3550	1-YR	356.59	356.38	0.21	0.43	0.00	0.03	173.97		23.87	0.49
Plumtree	3550	2-YR	357.13	356.91	0.22	0.40	0.00	1.33	225.67		29.72	0.50
Plumtree	3550	10-YR	359.58	359.32	0.26	0.29	0.02	55.46	511.18	42.37	96.12	0.54
Plumtree	3550	50-YR	361.67	361.45	0.22	0.21	0.03	234.91	750.44	180.65	147.14	0.51
Plumtree	3550	100-YR	362.46	362.21	0.25	0.23	0.03	345.22	907.04	276.74	160.32	0.59
Plumtree	3550	200-YR	363.35	363.07	0.28	0.25	0.04	490.31	1097.62	411.07	179.50	0.68
Plumtree	3428	1-YR	356.15	355.93	0.23	0.40	0.00	0.59	173.41		19.67	0.49
Plumtree	3428	2-YR	356.73	356.46	0.27	0.43	0.00	3.69	223.31		24.86	0.55
Plumtree	3428	10-YR	359.28	358.85	0.43	0.50	0.01	75.48	520.85	12.66	57.75	0.87
Plumtree	3428	50-YR	361.43	360.96	0.47	0.41	0.02	249.40	814.15	102.45	94.49	1.01
Plumtree	3428	100-YR	362.19	361.60	0.59	0.50	0.03	347.96	1008.58	172.46	106.22	1.29
Plumtree	3428	200-YR	363.05	362.33	0.72	0.60	0.05	475.91	1239.47	283.62	119.52	1.60
Plumtree	3296	1-YR	355.74	355.53	0.21	0.34	0.02		174.00		16.01	0.46
Plumtree	3296	2-YR	356.30	356.04	0.26	0.38	0.03		227.00		17.64	0.55
Plumtree	3296	10-YR	358.77	358.26	0.51	0.27	0.11	0.07	608.93		28.92	1.00
Plumtree	3296	50-YR	361.01	360.34	0.67	0.18	0.16	13.29	1107.78	44.93	94.74	1.20
Plumtree	3296	100-YR	361.66	360.74	0.92	0.23	0.22	23.35	1409.11	96.54	110.30	1.66
Plumtree	3296	200-YR	362.40	361.13	1.26	0.29	0.30	38.29	1781.13	179.59	125.37	2.30
Plumtree	3179	1-YR	355.38	355.24	0.14	0.32	0.00		174.00		25.57	0.33
Plumtree	3179	2-YR	355.89	355.73	0.15	0.31	0.00		227.00		33.31	0.36
Plumtree	3179	10-YR	358.40	358.25	0.15	0.08	0.03	8.30	594.07	6.63	83.06	0.29
Plumtree	3179	50-YR	360.67	360.52	0.15	0.05	0.03	45.19	1002.27	118.55	154.78	0.28
Plumtree	3179	100-YR	361.22	361.02	0.20	0.06	0.04	67.98	1279.02	181.99	161.46	0.38
Plumtree	3179	200-YR	361.81	361.53	0.28	0.08	0.06	100.96	1628.81	269.23	168.13	0.52
Plumtree	3077	1-YR	355.06	354.88	0.18	0.35	0.00		174.00		25.45	0.42
Plumtree	3077	2-YR	355.58	355.43	0.16	0.31	0.00	9.55	217.44	0.01	96.61	0.37
Plumtree	3077	10-YR	358.29	358.24	0.05	0.08	0.02	183.69	340.02	85.29	181.68	0.14
Plumtree	3077	50-YR	360.59	360.55	0.05	0.05	0.02	411.84	520.42	233.73	218.63	0.14
Plumtree	3077	100-YR	361.12	361.05	0.06	0.07	0.02	545.22	664.81	318.97	235.31	0.19
Plumtree	3077	200-YR	361.67	361.59	0.09	0.09	0.03	731.08	838.50	429.42	248.66	0.26
Plumtree	2978	1-YR	354.71	354.52	0.19	0.21	0.00		174.00		21.06	0.42
Plumtree	2978	2-YR	355.27	355.06	0.20	0.22	0.00		227.00		26.05	0.46
Plumtree	2978	10-YR	358.20	358.00	0.20	0.09	0.00	14.07	552.63	42.30	70.65	0.39
Plumtree	2978	50-YR	360.52	360.30	0.22	0.06	0.02	107.44	901.25	157.31	141.71	0.43
Plumtree	2978	100-YR	361.02	360.71	0.31	0.07	0.03	168.73	1142.86	217.40	158.31	0.61
Plumtree	2978	200-YR	361.55	361.12	0.42	0.09	0.05	264.49	1439.02	295.50	163.73	0.86
Plumtree	2917	1-YR	354.50	354.29	0.21				174.00		18.90	0.47
Plumtree	2917	2-YR	355.05	354.81	0.24				227.00		21.82	0.53
Plumtree	2917	10-YR	358.11	357.90	0.21			13.81	576.42	18.77	76.52	0.40
Plumtree	2917	50-YR	360.45	360.29	0.16			227.07	848.71	90.22	254.55	0.34
Plumtree	2917	100-YR	360.92	360.71	0.20			362.14	1042.17	124.70	275.26	0.44
Plumtree	2917	200-YR	361.40	361.15	0.26			549.70	1278.45	170.85	298.20	0.58
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	354.31	354.05	0.26	0.25	0.04	0.02	173.98		30.69	0.68
Plumtree	2827	2-YR	354.74	354.49	0.25	0.25	0.01	1.52	225.44	0.04	41.40	0.62
Plumtree	2827	10-YR	356.31	355.79	0.52	0.29	0.11	20.66	578.74	9.60	112.23	1.12
Plumtree	2827	50-YR	357.36	356.85	0.51	0.27	0.10	260.90	862.89	42.21	154.66	1.24
Plumtree	2827	100-YR	357.95	357.42	0.53	0.25	0.13	413.91	1036.33	78.76	172.37	1.32
Plumtree	2827	200-YR	358.56	357.99	0.57	0.25	0.15	615.28	1251.92	131.81	188.49	1.48

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	2759	1-YR	354.02	353.85	0.17	0.44	0.01	1.59	172.41	0.00	27.41	0.36
Plumtree	2759	2-YR	354.47	354.25	0.22	0.45	0.03	5.05	220.75	1.20	66.33	0.46
Plumtree	2759	10-YR	355.91	355.60	0.31	0.57	0.04	125.14	414.69	69.17	169.22	0.81
Plumtree	2759	50-YR	356.98	356.68	0.30	0.60	0.02	348.04	568.78	249.18	219.06	0.99
Plumtree	2759	100-YR	357.57	357.30	0.27	0.61	0.00	511.51	632.53	384.96	240.75	0.99
Plumtree	2759	200-YR	358.17	357.89	0.28	0.57	0.01	718.94	721.34	558.72	261.74	1.06
Plumtree	2589	1-YR	353.57	353.44	0.13	0.63	0.06		105.63	68.37	62.83	0.44
Plumtree	2589	2-YR	354.00	353.87	0.12	0.58	0.07		124.32	102.68	76.96	0.45
Plumtree	2589	10-YR	355.30	355.12	0.18	0.51	0.03	22.73	233.97	352.30	148.23	0.75
Plumtree	2589	50-YR	356.36	356.13	0.23	0.45	0.01	112.64	346.02	707.35	203.60	1.03
Plumtree	2589	100-YR	356.96	356.69	0.27	0.45	0.00	207.92	434.50	886.58	236.82	1.29
Plumtree	2589	200-YR	357.59	357.34	0.24	0.39	0.00	315.75	480.85	1202.39	257.50	1.25
Plumtree	2485	1-YR	352.87	352.11	0.76	1.11	0.16	3.59	170.41		19.64	1.87
Plumtree	2485	2-YR	353.34	352.51	0.84	1.03	0.17	11.63	215.23	0.14	28.65	2.01
Plumtree	2485	10-YR	354.77	354.26	0.51	0.73	0.04	155.74	355.12	98.14	140.44	1.59
Plumtree	2485	50-YR	355.90	355.55	0.35	0.60	0.01	374.80	448.81	342.39	182.63	1.37
Plumtree	2485	100-YR	356.51	356.20	0.31	0.56	0.01	519.22	499.79	509.99	199.10	1.31
Plumtree	2485	200-YR	357.20	356.91	0.28	0.53	0.02	710.28	557.25	731.47	208.11	1.27
Plumtree	2331	1-YR	351.61	351.37	0.24	0.47	0.02		173.97	0.03	19.88	0.54
Plumtree	2331	2-YR	352.15	351.87	0.27	0.50	0.02		226.03	0.97	23.94	0.58
Plumtree	2331	10-YR	353.99	353.62	0.37	0.56	0.02	93.69	483.21	32.10	121.64	0.85
Plumtree	2331	50-YR	355.29	354.89	0.40	0.58	0.02	331.01	717.81	117.18	141.49	1.04
Plumtree	2331	100-YR	355.93	355.49	0.44	0.60	0.02	488.96	857.90	182.14	153.02	1.18
Plumtree	2331	200-YR	356.65	356.18	0.47	0.61	0.02	702.01	1022.65	274.35	166.42	1.32
Plumtree	2153	1-YR	351.11	350.95	0.16	0.35	0.00	3.40	170.60		21.03	0.33
Plumtree	2153	2-YR	351.63	351.43	0.20	0.41	0.01	8.42	218.58		49.24	0.42
Plumtree	2153	10-YR	353.41	353.11	0.30	0.52	0.01	177.49	427.87	3.64	114.58	0.75
Plumtree	2153	50-YR	354.70	354.35	0.34	0.55	0.00	504.46	620.56	40.98	138.89	1.01
Plumtree	2153	100-YR	355.31	354.94	0.37	0.55	0.00	727.41	724.99	76.60	145.28	1.14
Plumtree	2153	200-YR	356.02	355.62	0.40	0.55	0.01	1022.22	846.73	130.05	153.80	1.28
Plumtree	1994	1-YR	350.75	350.56	0.20	0.30	0.00	0.55	173.45		24.03	0.42
Plumtree	1994	2-YR	351.22	350.97	0.25	0.32	0.00	4.41	222.59		34.92	0.53
Plumtree	1994	10-YR	352.88	352.52	0.36	0.36	0.02	140.00	440.79	28.21	122.59	0.90
Plumtree	1994	50-YR	354.14	353.75	0.39	0.36	0.02	391.06	638.41	136.52	161.79	1.14
Plumtree	1994	100-YR	354.75	354.37	0.38	0.36	0.01	566.27	730.32	232.41	173.33	1.20
Plumtree	1994	200-YR	355.46	355.08	0.38	0.35	0.01	802.47	836.58	359.95	184.27	1.25
Plumtree	1888	1-YR	350.45	350.23	0.23	0.06	0.01	6.07	163.81	4.12	45.04	0.50
Plumtree	1888	2-YR	350.90	350.66	0.25	0.06	0.01	16.10	199.90	11.00	60.66	0.56
Plumtree	1888	10-YR	352.51	352.20	0.30	0.06	0.01	140.14	373.27	95.59	128.34	0.85
Plumtree	1888	50-YR	353.75	353.42	0.33	0.06	0.01	345.25	538.38	282.36	152.84	1.08
Plumtree	1888	100-YR	354.39	354.04	0.35	0.06	0.02	485.86	629.60	413.54	164.47	1.19
Plumtree	1888	200-YR	355.11	354.75	0.36	0.06	0.03	674.53	732.59	591.88	175.83	1.28
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	350.24	350.15	0.09	0.37	0.03	42.06	131.94		70.21	0.25
Plumtree	1830	2-YR	350.67	350.58	0.10	0.39	0.04	65.30	161.70		85.38	0.27
Plumtree	1830	10-YR	352.25	352.12	0.12	0.48	0.11	264.60	308.21	36.19	151.45	0.38
Plumtree	1830	50-YR	353.48	353.32	0.16	0.52	0.11	523.01	482.39	160.60	155.77	0.55
Plumtree	1830	100-YR	354.09	353.90	0.19	0.54	0.10	689.36	588.64	251.00	157.86	0.66
Plumtree	1830	200-YR	354.78	354.54	0.24	0.57	0.08	893.08	727.61	378.31	163.76	0.80
Plumtree	1641	1-YR	349.84	349.65	0.19	0.22	0.04	17.74	156.26	0.00	30.55	0.43
Plumtree	1641	2-YR	350.25	350.01	0.24	0.24	0.05	27.64	198.56	0.80	50.79	0.55
Plumtree	1641	10-YR	351.65	351.15	0.50	0.48	0.10	111.02	420.66	77.33	110.80	1.31
Plumtree	1641	50-YR	352.85	352.32	0.53	0.57	0.09	254.55	605.48	305.97	143.62	1.63
Plumtree	1641	100-YR	353.46	352.94	0.51	0.57	0.08	351.43	693.02	484.55	153.94	1.69
Plumtree	1641	200-YR	354.13	353.61	0.52	0.56	0.07	483.32	798.92	716.76	164.80	1.80
Plumtree	1463	1-YR	349.58	349.52	0.06	0.34	0.01	3.88	167.24	2.88	99.28	0.12
Plumtree	1463	2-YR	349.95	349.89	0.07	0.37	0.01	14.36	205.20	7.44	117.56	0.14
Plumtree	1463	10-YR	351.07	350.92	0.16	0.46	0.00	108.03	448.90	52.06	146.27	0.39
Plumtree	1463	50-YR	352.20	351.96	0.24	0.44	0.02	295.35	723.78	146.87	177.09	0.62
Plumtree	1463	100-YR	352.81	352.55	0.26	0.40	0.03	440.39	868.90	219.72	192.56	0.71
Plumtree	1463	200-YR	353.50	353.22	0.28	0.36	0.04	632.86	1033.05	333.08	203.43	0.80
Plumtree	1291	1-YR	349.23	349.06	0.17	0.64	0.00	166.01	253.99		221.77	0.57
Plumtree	1291	2-YR	349.57	349.39	0.19	0.59	0.01	274.41	311.53	0.06	239.57	0.68
Plumtree	1291	10-YR	350.61	350.43	0.19	0.48	0.02	794.09	465.66	5.25	311.02	0.82
Plumtree	1291	50-YR	351.74	351.58	0.16	0.38	0.01	1562.19	599.76	26.05	379.51	0.80
Plumtree	1291	100-YR	352.38	352.23	0.15	0.34	0.01	2086.56	666.78	44.67	411.30	0.76

HEC-RAS Plan: E River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	1291	200-YR	353.10	352.96	0.14	0.31	0.00	2762.85	731.90	70.25	419.77	0.71
Plumtree	1124	1-YR	348.60	348.39	0.21	0.45	0.02	155.36	264.64		244.80	0.67
Plumtree	1124	2-YR	348.97	348.82	0.15	0.37	0.01	299.39	286.61		261.63	0.58
Plumtree	1124	10-YR	350.11	349.99	0.12	0.30	0.00	868.52	395.70	0.78	280.52	0.56
Plumtree	1124	50-YR	351.34	351.22	0.12	0.26	0.00	1640.49	535.18	12.33	307.38	0.58
Plumtree	1124	100-YR	352.03	351.90	0.13	0.24	0.00	2145.88	622.79	29.34	322.27	0.60
Plumtree	1124	200-YR	352.79	352.65	0.14	0.23	0.01	2773.72	728.75	62.53	334.33	0.64
Plumtree	994	1-YR	348.12	347.99	0.13	0.25	0.00	151.18	268.82		186.91	0.42
Plumtree	994	2-YR	348.59	348.49	0.11	0.19	0.00	267.73	318.27		206.69	0.38
Plumtree	994	10-YR	349.81	349.68	0.13	0.17	0.00	717.57	546.09	1.35	233.03	0.49
Plumtree	994	50-YR	351.08	350.92	0.16	0.16	0.00	1349.32	822.40	16.28	267.02	0.58
Plumtree	994	100-YR	351.78	351.60	0.18	0.16	0.00	1768.24	992.78	36.98	283.36	0.63
Plumtree	994	200-YR	352.55	352.36	0.20	0.15	0.01	2296.73	1196.40	71.88	300.17	0.69
Plumtree	911	1-YR	347.87	347.70	0.16	0.53	0.01	164.52	255.48		195.18	0.53
Plumtree	911	2-YR	348.40	348.29	0.12	0.47	0.03	307.72	278.28		213.95	0.43
Plumtree	911	10-YR	349.63	349.51	0.13	0.35	0.01	832.29	429.55	3.16	237.58	0.54
Plumtree	911	50-YR	350.92	350.77	0.15	0.30	0.01	1556.98	610.46	20.55	269.43	0.64
Plumtree	911	100-YR	351.62	351.46	0.16	0.29	0.01	2041.10	717.90	39.00	284.31	0.69
Plumtree	911	200-YR	352.39	352.22	0.18	0.27	0.01	2650.69	845.90	68.41	299.79	0.75
Plumtree	762	1-YR	347.32	347.05	0.27	0.19	0.05	100.96	319.03	0.01	90.11	0.73
Plumtree	762	2-YR	347.91	347.53	0.38	0.21	0.07	139.06	444.09	2.85	162.01	0.98
Plumtree	762	10-YR	349.27	349.03	0.25	0.17	0.03	542.65	624.42	97.94	239.68	0.81
Plumtree	762	50-YR	350.61	350.39	0.22	0.15	0.02	1069.79	835.84	282.37	276.18	0.81
Plumtree	762	100-YR	351.33	351.10	0.23	0.14	0.02	1417.90	967.30	412.80	295.07	0.84
Plumtree	762	200-YR	352.11	351.88	0.23	0.14	0.02	1852.22	1121.71	591.07	312.06	0.88
Plumtree	658	1-YR	347.09	346.97	0.12	0.14	0.00	10.03	400.31	9.66	179.33	0.23
Plumtree	658	2-YR	347.63	347.49	0.14	0.13	0.02	38.14	507.56	40.30	227.08	0.29
Plumtree	658	10-YR	349.07	348.93	0.15	0.12	0.02	241.05	782.81	241.14	299.37	0.37
Plumtree	658	50-YR	350.44	350.29	0.15	0.12	0.02	570.20	1054.47	563.32	324.94	0.42
Plumtree	658	100-YR	351.16	351.01	0.15	0.12	0.02	793.74	1222.08	782.18	339.71	0.46
Plumtree	658	200-YR	351.95	351.79	0.17	0.12	0.02	1086.88	1427.61	1050.51	359.00	0.51
Plumtree	526	1-YR	346.95	346.84	0.11	0.25	0.01	23.51	326.21	70.28	265.76	0.26
Plumtree	526	2-YR	347.48	347.39	0.09	0.21	0.01	58.12	368.65	159.23	279.09	0.25
Plumtree	526	10-YR	348.93	348.85	0.08	0.17	0.01	206.98	535.90	522.12	309.88	0.27
Plumtree	526	50-YR	350.30	350.21	0.09	0.16	0.01	428.14	739.26	1020.61	336.88	0.33
Plumtree	526	100-YR	351.03	350.93	0.10	0.16	0.01	587.51	864.50	1345.98	349.05	0.36
Plumtree	526	200-YR	351.82	351.71	0.11	0.17	0.01	793.61	1016.54	1754.85	362.36	0.40
Plumtree	380	1-YR	346.69	346.45	0.24	1.35	0.10	30.14	387.56	2.30	154.36	0.52
Plumtree	380	2-YR	347.26	347.06	0.20	1.08	0.11	95.01	457.09	33.90	192.32	0.49
Plumtree	380	10-YR	348.75	348.57	0.18	0.78	0.10	361.24	688.98	214.77	218.46	0.52
Plumtree	380	50-YR	350.13	349.93	0.20	0.76	0.12	720.87	969.61	497.52	234.45	0.62
Plumtree	380	100-YR	350.85	350.64	0.22	0.77	0.13	955.36	1143.24	699.40	240.11	0.68
Plumtree	380	200-YR	351.64	351.39	0.24	0.79	0.14	1250.04	1355.61	959.35	245.75	0.77
Plumtree	146	1-YR	345.24	344.03	1.20	0.58	0.29		420.00		20.14	2.70
Plumtree	146	2-YR	346.07	344.82	1.26	0.53	0.29	5.43	579.35	1.22	44.51	2.63
Plumtree	146	10-YR	347.87	346.67	1.19	0.45	0.20	206.62	1004.30	54.09	109.61	2.61
Plumtree	146	50-YR	349.25	347.86	1.39	0.45	0.20	581.58	1454.23	152.19	137.53	3.31
Plumtree	146	100-YR	349.96	348.45	1.51	0.46	0.21	862.77	1716.62	218.61	150.22	3.72
Plumtree	146	200-YR	350.71	349.06	1.65	0.46	0.22	1243.04	2020.43	301.53	161.31	4.20
Plumtree	63	1-YR	343.84	343.60	0.24				420.00		43.98	0.52
Plumtree	63	2-YR	344.49	344.20	0.29			0.05	585.92	0.02	50.25	0.61
Plumtree	63	10-YR	346.34	345.81	0.52			20.26	1235.31	9.43	81.32	0.95
Plumtree	63	50-YR	348.05	347.32	0.72			114.34	2003.37	70.28	123.01	1.27
Plumtree	63	100-YR	348.92	348.10	0.82			207.62	2455.41	134.97	136.57	1.44
Plumtree	63	200-YR	349.86	348.94	0.92			346.28	2984.96	233.76	147.71	1.62

Appendix H-7

Plumtree Branch: Option F Hydraulic Modeling

N

LARCHMEDE COURT

MICHAELS WAY

JOEY DRIVE

POND 2

HOWARD COUNTY MARYLAND DEPT
OF RECREATION & PARKS
3430 COURT HOUSE DR
ELLICOTT CITY, MD 21043
Legal: 5.37 Acres
Map: 0017 Grid: 0021
Parcel: 0689 Block:

LONGVIEW DRIVE

HICKORYMEDE DRIVE

LEGEND

STORM DRAIN

GIS STREAM CENTERLINE

EXISTING FEMA 100-YR FLOODPLAIN

PROPOSED CONTOUR

EXISTING CONTOUR

SHEET 1

100' 0 100' 200'

SCALE: 1" = 100'

Valley Mede Flood Study

Option F: Ponds 2–4

MATCHLINE SEE SHEET OPTION F: POND 2-4 SHEET 1

JOEY DRIVE

POND 4

POND 3

CHAPOLINI ENOS L LATING ROBERT M T/C
4000 HUDSON STREET
BALTIMORE ,MD 21224
Legal: 11.91 Acres
Map: 0017 Grid: 0021
Parcel: 0662 Block:

BIRCHMEDE DRIVE

LONGVIEW DRIVE

N

LEGEND

- STORM DRAIN
- GIS STREAM CENTERLINE
- EXISTING FEMA 100–YR FLOODPLAIN
- PROPOSED CONTOUR
- EXISTING CONTOUR

SHEET 2

100' 0 100' 200'

SCALE: 1" =100'

Valley Mede Flood Study

Option F: Ponds 2–4

Project:	*Valley Mede Proposed Storage Areas*	*Designed By:*	*CEL*
County:	*Howard*	*Checked By:*	*ALH*
Watershed:	*Plumtree Branch*	*Approved By:*	
SHA Project Number:	*HO122A11*	*Date:*	*9/25/2017*
MDE Project Number:	*N/A*	***Study Area:***	***Ponds 2-4***
Design Phase:		***BMP ID:***	***N/A***

Stage -Storage Data Table

POND 2
WEIR 1

Storage Volume Using Average-End-Area Method						
(1) Contour Elevation (ft.)	(2) Elevation Area ($ft.^2$)	(3) Average Area ($ft.^2$)	(4) Incremental Height (ft.)	(5) Elevation Storage ($ft.^3$)	(6) Cumulative Storage ($ft.^3$)	(7) Cumulative Storage (acre-ft)
369.00	52,906	0	0.00	0	0	0.00
370.00	58,462	55,684	1.00	55,684	55,684	1.28
372.00	69,806	64,134	2.00	128,268	183,952	4.22
374.00	81,461	75,634	2.00	151,267	335,220	7.70
376.00	93,428	87,444	2.00	174,889	510,108	11.71
378.00	105,705	99,566	2.00	199,132	709,241	16.28
380.00	122,474	114,089	2.00	228,179	937,420	21.52
382.00	139,923	131,199	2.00	262,397	1,199,817	27.54
384.00	154,813	147,368	2.00	294,736	1,494,553	34.31
386.00	171,543	163,178	2.00	326,356	1,820,909	41.80

POND 3
WEIR 2

Storage Volume Using Average-End-Area Method						
(1) Contour Elevation (ft.)	(2) Elevation Area ($ft.^2$)	(3) Average Area ($ft.^2$)	(4) Incremental Height (ft.)	(5) Elevation Storage ($ft.^3$)	(6) Cumulative Storage ($ft.^3$)	(7) Cumulative Storage (acre-ft)
368.00	128,701	0	0.00	0	0	0.00
370.00	139,604	134,153	2.00	268,305	268,305	6.16
372.00	150,749	145,177	2.00	290,354	558,659	12.83
374.00	162,182	156,466	2.00	312,931	871,590	20.01
376.00	173,880	168,031	2.00	336,062	1,207,652	27.72
378.00	185,899	179,890	2.00	359,779	1,567,431	35.98
380.00	226,515	206,207	2.00	412,414	1,979,845	45.45
382.00	254,704	240,610	2.00	481,219	2,461,064	56.50

POND 4
WEIR 3

Storage Volume Using Average-End-Area Method						
(1) Contour Elevation (ft.)	(2) Elevation Area ($ft.^2$)	(3) Average Area ($ft.^2$)	(4) Incremental Height (ft.)	(5) Elevation Storage ($ft.^3$)	(6) Cumulative Storage ($ft.^3$)	(7) Cumulative Storage (acre-ft)
367.00	51,156	0.00	0.00	0.00	0.00	0.00
368.00	55,064	53,109.94	1.00	53,109.94	53,109.94	1.22
370.00	62,928	58,995.98	2.00	117,991.96	171,101.90	3.93
372.00	70,963	66,945.81	2.00	133,891.63	304,993.53	7.00
374.00	79,304	75,133.58	2.00	150,267.17	455,260.69	10.45
376.00	87,949	83,626.40	2.00	167,252.80	622,513.50	14.29
378.00	129,668	108,808.38	2.00	217,616.77	840,130.26	19.29
380.00	155,991	142,829.47	2.00	285,658.94	1,125,789.20	25.84
382.00	178,570	167,280.48	2.00	334,560.96	1,460,350.16	33.53

Rating Table for XS 26 (SP 4 Proposed RS 8374)

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00572	ft/ft
Normal Depth	21.00	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	401.05
0+00	401.02
0+15	400.00
0+18	399.78
0+18	399.76
0+18	399.72
0+20	399.64
0+20	399.60
0+22	399.47
0+31	398.77
0+42	398.00
0+43	397.92
0+44	397.88
0+49	397.52
0+50	397.46
0+51	397.35
0+55	397.06
0+68	396.40
0+68	396.37
0+73	396.03
0+73	396.00
0+78	395.72
0+79	395.60
0+81	395.52
0+82	395.41
0+84	395.31
0+85	395.20

Rating Table for XS 26 (SP 4 Proposed RS 8374)

Input Data

Station (ft)	Elevation (ft)
1+04	394.00
1+09	393.72
1+10	393.61
1+12	393.51
1+16	393.15
1+23	392.72
1+29	392.19
1+31	392.00
1+41	390.76
1+46	390.00
1+48	389.84
1+50	389.65
1+53	387.96
1+59	386.00
1+59	385.95
1+64	384.00
1+86	377.15
1+86	377.00
1+86	376.89
1+87	376.76
1+87	376.58
1+88	376.34
1+89	376.03
1+89	376.00
1+90	375.78
1+91	375.39
1+95	374.00
2+00	372.52
2+08	369.62
2+10	369.00
2+60	369.00
2+73	372.98
2+75	373.75
2+77	374.30
2+80	375.48
2+87	377.63
2+92	379.53

Rating Table for XS 26 (SP 4 Proposed RS 8374)

Input Data

Station (ft)	Elevation (ft)
3+00	382.00
3+06	383.88
3+18	388.00
3+21	388.00
3+26	388.89
3+32	390.00
3+34	390.71
3+36	391.30
3+38	392.00
3+44	393.91
3+44	394.00
3+45	394.36
3+49	396.00
3+51	396.60
3+54	398.00
3+57	399.37
3+58	400.00
3+60	400.71
3+60	401.09

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 401.05)	(1+50, 389.65)	0.075
(1+50, 389.65)	(1+91, 375.39)	0.055
(1+91, 375.39)	(2+80, 375.48)	0.040
(2+80, 375.48)	(3+18, 388.00)	0.055
(3+18, 388.00)	(3+60, 401.09)	0.085

Rating Table for XS 26 (SP 4 Proposed RS 8374)

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge		27925.19	ft³/s
Elevation Range	369.00 to 401.09 ft		
Flow Area		2400.00	ft²
Wetted Perimeter		192.36	ft
Hydraulic Radius		12.48	ft
Top Width		185.65	ft
Normal Depth		21.00	ft
Critical Depth		15.59	ft
Critical Slope		0.01880	ft/ft
Velocity		11.64	ft/s
Velocity Head		2.10	ft
Specific Energy		23.10	ft
Froude Number		0.57	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	21.00	ft
Critical Depth	15.59	ft
Channel Slope	0.00572	ft/ft
Critical Slope	0.01880	ft/ft

1

```
 ******************80-80 LIST OF INPUT DATA FOR TR-20
 HYDROLOGY******************

 JOB TR-20                                                        NOPLOTS
 TITLE     Valley Mede Ultimate LU, Fair Cond, Subdivided
 TITLE     Option F, Ponds 2-4
  2 XSECTN   002                  1.0      382.34
  8                            380.31        0.00        0.00
  8                            381.01       17.58        8.61
  8                            381.71       57.72       18.68
  8                            382.41       87.42       30.14
  8                            383.11      104.50       69.28
  8                            383.81      263.75      127.12
  8                            384.51      485.21      191.79
  8                            385.21      756.68      264.06
  8                            385.91     1097.04      343.49
  8                            386.61     1504.59      429.14
  8                            387.31     1935.42      521.71
  8                            388.01     2404.29      624.39
  8                            388.71     3010.65      736.45
  8                            389.41     3695.34      856.11
  8                            390.11     4464.50      983.39
  9 ENDTBL
  2 XSECTN   007                  1.0      368.32
  8                            365.53        0.00        0.00
  8                            366.13        2.41        1.85
  8                            366.73       13.26        5.96
  8                            367.33       32.81       11.12
  8                            367.93       56.86       17.33
  8                            368.53       58.83       27.09
  8                            369.13       87.92       53.94
  8                            369.73      182.33       92.49
  8                            370.33      312.70      139.48
  8                            370.93      486.35      195.36
  8                            371.53      699.83      260.83
  8                            372.13      968.75      336.90
  8                            372.73     1275.43      425.26
  8                            373.33     1614.79      529.26
  8                            373.93     2124.43      651.29
  8                            374.53     2756.14      782.07
  8                            375.13     3501.54      920.13
  8                            375.73     4298.02     1065.04
  9 ENDTBL
  2 XSECTN   010                  1.0      356.35
  8                            348.10        0.00        0.00
  8                            348.70        5.42        4.43
  8                            349.30       24.01       11.59
  8                            349.90       53.17       19.81
  8                            350.50       92.55       29.09
  8                            351.10      142.34       39.42
  8                            351.70      165.15       51.53
  8                            352.90      175.05      116.35
  8                            353.50      306.92      180.56
1

 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************
```

```
  8                          354.10      516.89      254.74
  8                          354.70      768.52      334.49
  8                          355.30     1065.05      420.62
  8                          355.90     1408.22      513.66
  8                          356.50     1807.31      613.67
  8                          357.10     2263.93      719.75
  8                          357.70     2774.44      831.81
  8                          358.30     3358.23      949.51
  9 ENDTBL
  2 XSECTN   014               1.0      379.93
  8                          376.15        0.00        0.00
  8                          377.05        8.36        4.84
  8                          377.95       50.12       15.58
  8                          378.85      120.19       28.42
  8                          380.65      159.08       88.20
  8                          381.55      355.19      161.67
  8                          382.45      675.00      251.36
  8                          383.35     1104.38      349.36
  8                          384.25     1615.02      456.11
  8                          385.15     2234.68      571.32
  8                          386.05     2973.63      693.77
  8                          386.95     3792.19      822.71
  8                          387.85     4704.26      958.82
  8                          388.75     5747.20     1101.81
  8                          389.65     6882.68     1250.71
  8                          390.55     8093.30     1406.32
  8                          391.45     9366.77     1569.98
  8                          392.35    10762.79     1742.42
  9 ENDTBL
  2 XSECTN   019               1.0      357.27
  8                          353.42        0.00        0.00
  8                          354.17        5.09        3.18
  8                          354.92       23.50        9.02
  8                          355.67       54.37       16.42
  8                          357.17       67.66       39.26
  8                          357.92      141.61       78.64
  8                          358.67      290.86      152.96
  8                          359.42      578.12      249.05
  8                          360.17      989.10      363.75
  8                          360.92     1520.99      494.51
  8                          361.67     2178.56      640.80
  8                          362.42     2981.64      802.19
  8                          363.17     3939.75      976.51
  8                          363.92     5049.66     1162.33
  8                          364.67     6325.86     1358.62
  8                          365.42     7734.95     1564.62
  9 ENDTBL
  2 XSECTN   023               1.0      344.26
  8                          340.73        0.00        0.00
  8                          341.48        9.64        6.59
1


 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

  8                          342.23       39.11       16.56
  8                          342.98       85.34       28.29
  8                          344.48      146.45       57.99
  8                          345.23      162.66       92.62
  8                          345.98      273.72      148.97
  8                          346.73      453.62      224.13
  8                          347.48      714.72      314.46
```

```
  8                            348.23     1049.51      417.50
  8                            348.98     1470.76      532.23
  8                            349.73     1960.34      657.45
  8                            350.48     2559.41      793.58
  8                            351.23     3222.20      938.75
  8                            351.98     3947.27     1094.98
  9 ENDTBL
  2 XSECTN   026                  1.0      370.00
  8                            369.00        0.00        0.00
  8                            369.20        9.67       10.15
  8                            369.40       30.80       20.54
  8                            369.60       60.76       31.17
  8                            369.80       98.50       42.05
  8                            370.00      143.42       53.16
  8                            370.20      195.13       64.52
  8                            370.40      253.32       76.12
  8                            370.60      317.79       87.96
  8                            370.80      388.37      100.04
  8                            371.00      464.96      112.36
  8                            371.20      547.44      124.92
  8                            371.40      635.74      137.73
  8                            371.60      729.81      150.77
  8                            371.80      829.61      164.06
  8                            372.00      935.10      177.58
  8                            372.20     1046.27      191.35
  8                            372.60     1285.58      219.61
  8                            372.80     1413.73      234.11
  8                            373.00     1547.53      248.84
  9 ENDTBL
  3 STRUCT      01
  8                      387.74      0.00        0.000
  8                      389.41      62.00       3.834
  8                      390.20      124.00      5.852
  8                      390.83      186.00      7.566
  8                      391.39      248.00      9.089
  8                      391.82      300.00      10.259
  8                      392.39      372.00      11.898
  8                      392.86      434.00      13.284
  8                      393.33      496.00      14.669
  8                      393.82      558.00      16.114
  8                      394.31      620.00      17.612
  8                      394.81      752.00      19.173
  8                      395.05      884.00      19.928
1


 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

  8                      395.14      950.00      20.220
  8                      395.33      1100.00     20.835
  8                      395.36      1125.00     20.932
  8                      395.71      1500.00     22.066
  8                      396.00      1890.00     22.700
  9 ENDTBL
  3 STRUCT      02
  8                      369.00      0.00        0.000
  8                      373.22      187.00      6.34
  8                      374.48      289.00      8.66
  8                      377.92      633.00      16.10
  8                      381.60      1119.0      26.34
  8                      383.00      1437.0      30.93
  8                      384.33      1803.0      35.55
```

```
  9 ENDTBL
  3 STRUCT      03
  8                     368.00      0.000       0.000
  8                     371.06      105.00      9.69
  8                     372.14      164.00      13.33
  8                     376.06      348.00      27.97
  8                     378.69      864.00      39.25
  8                     379.22      1284.0      41.76
  8                     379.72      1695.0      44.13
  9 ENDTBL
  3 STRUCT      04
  8                     367.00      0.000       0.000
  8                     370.91      88.00       5.33
  8                     371.97      144.00      6.96
  8                     376.05      290.00      14.42
  8                     378.67      781.00      21.48
  8                     379.19      1203.0      23.19
  8                     379.68      1639.0      24.80
  9 ENDTBL
  3 STRUCT      05
  8                     400.00      0.000       0.000
  8                     401.30      9.          2.447
  8                     401.96      18.         3.689
  8                     402.52      27.         4.847
  8                     403.05      36.         5.949
  8                     403.63      45.         7.156
  8                     403.99      50.         7.905
  8                     405.13      63.         10.508
  8                     406.10      72.         12.746
  8                     408.44      90.         18.677
  9 ENDTBL
  5 RAINFL 5             .1
  8          0.0000     0.0013      0.0023      0.0034      0.0044
  8          0.0055     0.0065      0.0076      0.0087      0.0098
  8          0.0109     0.0121      0.0132      0.0143      0.0155
  8          0.0167     0.0178      0.0190      0.0202      0.0214
1


 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

  8          0.0226     0.0238      0.0251      0.0263      0.0276
  8          0.0288     0.0301      0.0314      0.0327      0.0340
  8          0.0353     0.0366      0.0379      0.0393      0.0406
  8          0.0420     0.0434      0.0447      0.0461      0.0475
  8          0.0489     0.0504      0.0518      0.0532      0.0547
  8          0.0562     0.0576      0.0591      0.0606      0.0621
  8          0.0636     0.0651      0.0667      0.0682      0.0697
  8          0.0713     0.0729      0.0745      0.0760      0.0776
  8          0.0793     0.0809      0.0826      0.0843      0.0861
  8          0.0879     0.0898      0.0916      0.0936      0.0955
  8          0.0975     0.0996      0.1017      0.1038      0.1060
  8          0.1082     0.1104      0.1127      0.1150      0.1174
  8          0.1198     0.1223      0.1247      0.1273      0.1298
  8          0.1324     0.1351      0.1378      0.1405      0.1432
  8          0.1461     0.1490      0.1521      0.1554      0.1588
  8          0.1623     0.1660      0.1699      0.1739      0.1780
  8          0.1823     0.1868      0.1914      0.1961      0.2010
  8          0.2061     0.2117      0.2179      0.2247      0.2321
  8          0.2400     0.2490      0.2591      0.2702      0.2825
  8          0.2955     0.3157      0.3370      0.3662      0.4067
  8          0.4766     0.5933      0.6338      0.6630      0.6843
```

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  8          0.7045      0.7176      0.7298      0.7409      0.7510
  8          0.7600      0.7679      0.7753      0.7821      0.7883
  8          0.7939      0.7990      0.8039      0.8086      0.8132
  8          0.8177      0.8220      0.8261      0.8301      0.8340
  8          0.8377      0.8412      0.8446      0.8479      0.8510
  8          0.8540      0.8568      0.8595      0.8622      0.8649
  8          0.8676      0.8702      0.8727      0.8753      0.8778
  8          0.8802      0.8826      0.8850      0.8873      0.8896
  8          0.8918      0.8940      0.8962      0.8983      0.9004
  8          0.9025      0.9045      0.9064      0.9084      0.9103
  8          0.9121      0.9139      0.9157      0.9174      0.9191
  8          0.9208      0.9224      0.9240      0.9256      0.9271
  8          0.9287      0.9303      0.9318      0.9334      0.9349
  8          0.9364      0.9379      0.9394      0.9409      0.9424
  8          0.9439      0.9453      0.9468      0.9482      0.9496
  8          0.9511      0.9525      0.9539      0.9553      0.9566
  8          0.9580      0.9594      0.9607      0.9621      0.9634
  8          0.9647      0.9660      0.9673      0.9686      0.9699
  8          0.9712      0.9724      0.9737      0.9749      0.9762
  8          0.9774      0.9786      0.9798      0.9810      0.9822
  8          0.9834      0.9845      0.9857      0.9868      0.9879
  8          0.9891      0.9902      0.9913      0.9924      0.9935
  8          0.9945      0.9956      0.9967      0.9977      0.9987
  8          1.0000      1.0000      1.0000      1.0000      1.0000
  9 ENDTBL
  6 RUNOFF 1 001       1 0.4053      83.135       0.444      1        1  DA5
  6 REACH  3  26   1   2 3113                                 1        1
  6 RUNOFF 1 003       3 0.0673      77.021       0.303      1        1  DA6
  6 REACH  3  26   3   4 1954                                 1        1
1


 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************

  6 ADDHYD 4  04   2 4 5                                      1        1
  6 RUNOFF 1 005       2 0.1867      76.388       0.530      1        1  DA4
  6 ADDHYD 4  06   5 2 1                                      1        1
  6 RESVOR 2    02 1   2 369                                  1        1  Weir1
  6 RESVOR 2    03 2   3 368                                  1        1  Weir2
  6 RESVOR 2    04 3   4 367                                  1        1  Weir3
  6 REACH  3  07   4   1 2088                                 1        1
  6 RUNOFF 1 008       2 0.2020      75.944       0.428      1        1  DA3
  6 ADDHYD 4 009   1 2 3                                      1        1
  6 REACH  3  10   3   1 3852                                 1        1
  6 RUNOFF 1 011       2 0.2366      76.760       0.443      1        1  DA2
  6 ADDHYD 4 012   1 2 6                                      1        1
  6 RUNOFF 1 013       1 0.3775      78.713       0.667      1        1  DA10
  6 REACH  3  14   1   2 2484                                 1        1
  6 RUNOFF 1 015       3 0.0886      84.806       0.443      1        1  DA9
  6 ADDHYD 4 016   2 3 4                                      1        1
  6 RUNOFF 1 017       3 0.0693      94.066       0.151      1        1  DA8
  6 ADDHYD 4 018   4 3 2                                      1        1
  6 REACH  3 019   2   1 4092                                 1        1
  6 RUNOFF 1 020       2 0.3284      87.933       0.277      1        1  DA7
  6 ADDHYD 4 021   1 2 7                                      1        1
  6 ADDHYD 4 022   6 7 1                                      1        1
  6 REACH  3  23   1   2 586                                  1        1
  6 RUNOFF 1 024       3 0.0200      72.029       0.277      1        1  DA1
  6 ADDHYD 4 025   2 3 4                                      1        1
    ENDATA
  7 INCREM 6                    0.05
  7 COMPUT 7 001   025           0.0        2.64         1.05 2  1   1
```

```
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        3.19         1.05 2  1   2
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        4.91         1.05 2  1   10
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        7.23         1.05 2  1   50
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        8.47         1.05 2  1   98
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        9.88         1.05 2  1   99
    ENDCMP 1
    ENDJOB 2

 ********************************END OF 80-80
 LIST*******************************
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                     Option F, Ponds 2-4
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 1



 EXECUTIVE CONTROL INCREM    MAIN TIME INCREMENT =   .050 HOURS


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  2.64       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. = 1            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                         222.9                       (RUNOFF)
       20.13                           7.5                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.17 WATERSHED INCHES;     306 CFS-HRS;      25.3 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  26

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.50                         187.8                        370.17

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.17 WATERSHED INCHES;     306 CFS-HRS;      25.3 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.25                          29.6                       (RUNOFF)
```

```
      20.10                          1.0 *                    (RUNOFF)
                                         * FIRST POINT OF FLAT PEAK

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .83 WATERSHED INCHES;      36 CFS-HRS;       3.0 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  26

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.49                         21.3                      369.31

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .83 WATERSHED INCHES;      36 CFS-HRS;       3.0 ACRE-
                  FEET.
1
 TR20 ------------------------------------------------------------------- SCS
 -
               Valley Mede Ultimate LU, Fair Cond, Subdivided
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 09/21/**                     Option F, Ponds 2-4
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 18:17:00                   PASS   1   JOB NO.   1                    PAGE
 2



 OPERATION ADDHYD   XSECTION   4

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.50                        209.1                     (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 1.12 WATERSHED INCHES;     342 CFS-HRS;      28.3 ACRE-
                 FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.41                         60.3                      (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .80 WATERSHED INCHES;      96 CFS-HRS;       8.0 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION   6

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.48                        266.8                     (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 1.03 WATERSHED INCHES;     438 CFS-HRS;      36.2 ACRE-
                 FEET.


 OPERATION RESVOR   STRUCTURE  2
```

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.80 186.7 373.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 438 CFS-HRS; 36.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
13.57 105.4 371.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 437 CFS-HRS; 36.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 4
1
TR20 ---------- SCS -
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
14.35 87.7 370.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.02 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
14.75 85.0 369.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.02 WATERSHED INCHES; 435 CFS-HRS; 36.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.34 70.2 (RUNOFF)
23.13 2.4 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.78 WATERSHED INCHES; 101 CFS-HRS; 8.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	73.1	(NULL)
14.68	92.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.97 WATERSHED INCHES; 537 CFS-HRS; 44.3 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	57.3	349.96
14.96	91.1	350.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.97 WATERSHED INCHES; 537 CFS-HRS; 44.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Subdivided
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2.04TEST
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	86.0	(RUNOFF)
20.13	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.82 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	132.9	(NULL)
14.88	99.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.93 WATERSHED INCHES; 661 CFS-HRS; 54.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.50	128.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 223 CFS-HRS; 18.5 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.64	121.2	378.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 223 CFS-HRS; 18.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	53.2	(RUNOFF)
20.13	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.28 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 16
1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Subdivided
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09/21/** Option F, Ponds 2-4
2.04TEST
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	154.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.99 WATERSHED INCHES; 296 CFS-HRS; 24.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	99.0	(RUNOFF)
17.34	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.00 WATERSHED INCHES; 89 CFS-HRS; 7.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK

ELEVATION(FEET)

12.17	166.7	(NULL)
12.53	176.8	(NULL)
20.00	9.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.10 WATERSHED INCHES; 381 CFS-HRS; 31.5 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.10	131.5	357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.09 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	288.1	(RUNOFF)
18.66	7.5	(RUNOFF)
21.98	6.0	(RUNOFF)
24.03	5.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.50 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	317.4	(NULL)
12.88	179.8	(NULL)
20.04	17.1	(NULL)
20.58	16.4	(NULL)
23.71	13.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.24 WATERSHED INCHES; 693 CFS-HRS; 57.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)

```
      12.26                          419.6                          (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.04 WATERSHED INCHES;    1322 CFS-HRS;     109.3 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  23

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.36                          397.7                           346.50

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.04 WATERSHED INCHES;    1320 CFS-HRS;     109.0 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  24

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.24                            6.1                          (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   .60 WATERSHED INCHES;       8 CFS-HRS;        .6 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.36                          402.6                          (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.04 WATERSHED INCHES;    1327 CFS-HRS;     109.7 ACRE-
                  FEET.
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                    Option F, Ponds 2-4
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 18:17:00                  PASS   2   JOB NO.   1                    PAGE
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 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   1


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
   STARTING TIME =   .00       RAIN DEPTH =  3.19       RAIN DURATION =  1.00
   ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
   ALTERNATE NO. = 1           STORM NO. = 2            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.33                          306.8                          (RUNOFF)
```

```
   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.61 WATERSHED INCHES;     421 CFS-HRS;      34.8 ACRE-
                FEET.


 OPERATION REACH    XSECTION  26

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.48                         265.7                        370.44

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.61 WATERSHED INCHES;     421 CFS-HRS;      34.8 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   3

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.24                          44.4                       (RUNOFF)
      24.03                           1.1                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.21 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
                FEET.


 OPERATION REACH    XSECTION  26

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.46                          33.7                        369.42

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.20 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
                FEET.
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
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 OPERATION ADDHYD   XSECTION   4

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.48                         299.2                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.55 WATERSHED INCHES;     473 CFS-HRS;      39.1 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
```

ELEVATION(FEET)
12.40 91.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.17 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.46 388.0 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.44 WATERSHED INCHES; 614 CFS-HRS; 50.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.73 289.4 374.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.44 WATERSHED INCHES; 614 CFS-HRS; 50.7 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
13.38 164.3 372.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.44 WATERSHED INCHES; 612 CFS-HRS; 50.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 4
1
TR20 ---------- SCS -
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2.04TEST
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
13.90 144.2 371.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.43 WATERSHED INCHES; 610 CFS-HRS; 50.4 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
14.23 137.7 369.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.43 WATERSHED INCHES; 610 CFS-HRS; 50.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.33 106.9 (RUNOFF)
20.14 4.0 (RUNOFF)
23.13 3.3 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.14 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.34 113.9 (NULL)
14.21 149.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.36 WATERSHED INCHES; 759 CFS-HRS; 62.7 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.55 91.6 350.49
14.46 146.1 351.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.36 WATERSHED INCHES; 758 CFS-HRS; 62.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 11
1
TR20 ---------- SCS -
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.34 128.7 (RUNOFF)
20.13 4.8 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

1.19 WATERSHED INCHES; 182 CFS-HRS; 15.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	205.8	(NULL)
14.43	159.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.33 WATERSHED INCHES; 940 CFS-HRS; 77.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	188.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.31 WATERSHED INCHES; 319 CFS-HRS; 26.4 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.74	153.2	380.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.31 WATERSHED INCHES; 319 CFS-HRS; 26.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	72.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.73 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

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TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Subdivided
VERSION
09/21/** Option F, Ponds 2-4
2.04TEST
18:17:00 PASS 2 JOB NO. 1 PAGE 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.65	189.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.39 WATERSHED INCHES; 418 CFS-HRS; 34.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	123.7	(RUNOFF)
15.84	3.5	(RUNOFF)
19.43	2.1	(RUNOFF)
19.74	2.0	(RUNOFF)
20.05	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.51 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	212.0	(NULL)
12.56	213.2	(NULL)
20.00	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.50 WATERSHED INCHES; 518 CFS-HRS; 42.8 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.10	169.9	358.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.48 WATERSHED INCHES; 512 CFS-HRS; 42.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	380.2	(RUNOFF)
18.66	9.4	(RUNOFF)
20.66	8.3	(RUNOFF)
21.98	7.6	(RUNOFF)
24.03	6.5	(RUNOFF)

1
TR20 ---------- SCS -
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```
   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.98 WATERSHED INCHES;     420 CFS-HRS;      34.7 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  21

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                         436.7                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.66 WATERSHED INCHES;     926 CFS-HRS;      76.5 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  22

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.26                         604.0                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.43 WATERSHED INCHES;    1809 CFS-HRS;     149.5 ACRE-
                FEET.


 OPERATION REACH    XSECTION  23

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.36                         581.6                        347.10

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.43 WATERSHED INCHES;    1806 CFS-HRS;     149.2 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  24

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                          10.0                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 .92 WATERSHED INCHES;      12 CFS-HRS;       1.0 ACRE-
                 FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.36                         589.5                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.42 WATERSHED INCHES;    1817 CFS-HRS;     150.2 ACRE-
                FEET.
1
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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 25
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .050 HOURS
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	595.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 812 CFS-HRS; 67.1 ACRE-FEET.

OPERATION REACH XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	535.7	371.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 812 CFS-HRS; 67.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	96.3	(RUNOFF)
21.97	2.2	(RUNOFF)
23.12	2.0	(RUNOFF)
24.03	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.55 WATERSHED INCHES; 111 CFS-HRS; 9.1 ACRE-FEET.

OPERATION REACH XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.42	79.6	369.70
24.13	1.9	369.04

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.55 WATERSHED INCHES; 111 CFS-HRS; 9.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	614.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.03 WATERSHED INCHES; 923 CFS-HRS; 76.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	202.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.49 WATERSHED INCHES; 300 CFS-HRS; 24.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.43	811.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.87 WATERSHED INCHES; 1223 CFS-HRS; 101.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.65	632.8	377.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.87 WATERSHED INCHES; 1223 CFS-HRS; 101.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.23	346.8	376.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.85 WATERSHED INCHES; 1215 CFS-HRS; 100.4 ACRE-FEET.
1

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OPERATION RESVOR STRUCTURE 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.85	288.6	376.01

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.83 WATERSHED INCHES; 1205 CFS-HRS; 99.6 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
14.12	283.4	370.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.82 WATERSHED INCHES; 1202 CFS-HRS; 99.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	238.2	(RUNOFF)
20.13	7.4	(RUNOFF)
23.13	5.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.45 WATERSHED INCHES; 320 CFS-HRS; 26.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	265.8	(NULL)
14.07	307.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.74 WATERSHED INCHES; 1522 CFS-HRS; 125.8 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
14.57	289.0	353.42

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.72 WATERSHED INCHES; 1512 CFS-HRS; 125.0 ACRE-FEET.

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OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	283.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.53 WATERSHED INCHES; 386 CFS-HRS; 31.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	403.7	(NULL)
14.51	313.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.68 WATERSHED INCHES; 1898 CFS-HRS; 156.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	397.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 658 CFS-HRS; 54.3 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.70	331.9	381.44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 658 CFS-HRS; 54.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)

```
      12.32                          135.7                          (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                3.26 WATERSHED INCHES;     187 CFS-HRS;      15.4 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  16
1
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.62                          403.1                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.81 WATERSHED INCHES;     844 CFS-HRS;      69.7 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  17

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.14                          199.4                        (RUNOFF)
      15.84                            5.5                        (RUNOFF)
      17.34                            4.3                        (RUNOFF)
      20.05                            3.2                        (RUNOFF)
      20.61                            3.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.12 WATERSHED INCHES;     184 CFS-HRS;      15.2 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  18

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.18                          397.3                        (NULL)
      12.56                          441.9                        (NULL)
      19.98                           21.9                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.87 WATERSHED INCHES;     991 CFS-HRS;      81.9 ACRE-
                FEET.


 OPERATION REACH    XSECTION  19

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.98                          361.2                         358.85

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.84 WATERSHED INCHES;     981 CFS-HRS;      81.1 ACRE-
```

FEET.

OPERATION RUNOFF XSECTION 20
1
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	670.8	(RUNOFF)
18.66	15.4	(RUNOFF)
20.11	14.2	(RUNOFF)
20.66	13.5	(RUNOFF)
21.98	12.3	(RUNOFF)
23.11	11.3	(RUNOFF)
24.03	10.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.57 WATERSHED INCHES; 757 CFS-HRS; 62.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	824.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.08 WATERSHED INCHES; 1716 CFS-HRS; 141.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	1176.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.75 WATERSHED INCHES; 3485 CFS-HRS; 288.0 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	1151.1	348.41

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.75 WATERSHED INCHES; 3479 CFS-HRS; 287.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.22                        24.7                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.13 WATERSHED INCHES;      27 CFS-HRS;       2.3 ACRE-
                FEET.
1
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 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.34                       1170.6                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.74 WATERSHED INCHES;    3505 CFS-HRS;     289.7 ACRE-
                FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   3


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
   STARTING TIME =   .00       RAIN DEPTH =  7.23       RAIN DURATION =  1.00
   ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
   ALTERNATE NO. = 1           STORM NO. =50            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.31                        995.0                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.25 WATERSHED INCHES;    1374 CFS-HRS;     113.5 ACRE-
                FEET.


 OPERATION REACH    XSECTION  26

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.43                        915.4                        371.96

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.25 WATERSHED INCHES;    1372 CFS-HRS;     113.4 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   3
```

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                        172.1                       (RUNOFF)
      20.12                          4.1                       (RUNOFF)
      23.77                          3.0                       (RUNOFF)
      24.03                          3.0                       (RUNOFF)
1
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   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.57 WATERSHED INCHES;     199 CFS-HRS;      16.4 ACRE-
                FEET.


 OPERATION REACH    XSECTION  26

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.35                        149.2                        370.02
      20.18                          4.0                        369.08
      23.18                          3.2                        369.07
      24.08                          3.0                        369.06

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.57 WATERSHED INCHES;     199 CFS-HRS;      16.4 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   4

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.42                       1056.8                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.15 WATERSHED INCHES;    1570 CFS-HRS;     129.8 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.37                        365.2                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.50 WATERSHED INCHES;     542 CFS-HRS;      44.8 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   6

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.41                       1417.1                        (NULL)
```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.96 WATERSHED INCHES; 2112 CFS-HRS; 174.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	1118.1	381.59

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.93 WATERSHED INCHES; 2100 CFS-HRS; 173.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.93	862.2	378.68

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.85 WATERSHED INCHES; 2062 CFS-HRS; 170.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.16	777.9	378.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.78 WATERSHED INCHES; 2036 CFS-HRS; 168.2 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.37	729.2	371.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.77 WATERSHED INCHES; 2029 CFS-HRS; 167.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	432.9	(RUNOFF)

```
      20.13                          12.0                          (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.45 WATERSHED INCHES;     580 CFS-HRS;      47.9 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                         501.6                         (NULL)
      13.34                         798.4                         (NULL)
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   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.69 WATERSHED INCHES;    2608 CFS-HRS;     215.6 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.71                         376.1                         353.70
      13.71                         709.8                         354.56

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.66 WATERSHED INCHES;    2592 CFS-HRS;     214.2 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  11

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                         509.4                         (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.54 WATERSHED INCHES;     694 CFS-HRS;      57.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  12

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.39                         774.0                         (NULL)
      13.68                         769.8                         (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.64 WATERSHED INCHES;    3285 CFS-HRS;     271.5 ACRE-
                FEET.
```

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.46	698.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.76 WATERSHED INCHES; 1160 CFS-HRS; 95.9 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.65	615.0	382.28

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.76 WATERSHED INCHES; 1160 CFS-HRS; 95.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	222.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.41 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.58	740.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.84 WATERSHED INCHES; 1455 CFS-HRS; 120.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	300.6	(RUNOFF)
15.84	8.2	(RUNOFF)
17.34	6.3	(RUNOFF)
18.61	5.1	(RUNOFF)
18.84	5.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.29 WATERSHED INCHES; 281 CFS-HRS; 23.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	803.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.85 WATERSHED INCHES; 1675 CFS-HRS; 138.4 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.92	690.9	359.63

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.81 WATERSHED INCHES; 1663 CFS-HRS; 137.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	1066.0	(RUNOFF)
18.66	23.4	(RUNOFF)
20.11	21.4	(RUNOFF)
20.66	20.5	(RUNOFF)
21.98	18.6	(RUNOFF)
23.11	17.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.72 WATERSHED INCHES; 1213 CFS-HRS; 100.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	1338.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.11 WATERSHED INCHES; 2846 CFS-HRS; 235.2 ACRE-FEET.

```
 OPERATION ADDHYD   XSECTION  22

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.27                        2018.5                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.70 WATERSHED INCHES;    5945 CFS-HRS;     491.3 ACRE-
                   FEET.


 OPERATION REACH    XSECTION  23

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.34                        1990.8                        349.77

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.69 WATERSHED INCHES;    5937 CFS-HRS;     490.6 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION  24
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
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    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.21                          47.3                       (RUNOFF)
       20.66                           1.1                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.03 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION  25

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                        2027.3                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.68 WATERSHED INCHES;    5986 CFS-HRS;     494.7 ACRE-
                   FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   4


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  8.47       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =98            RAIN TABLE NO. = 5
```

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	1200.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.39 WATERSHED INCHES; 1672 CFS-HRS; 138.2 ACRE-FEET.

OPERATION REACH XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.43	1114.1	372.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.38 WATERSHED INCHES; 1669 CFS-HRS; 137.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 3
1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Subdivided
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09/21/** Option F, Ponds 2-4
2.04TEST
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	212.8	(RUNOFF)
18.67	5.3	(RUNOFF)
21.98	4.2	(RUNOFF)
24.03	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.70 WATERSHED INCHES; 248 CFS-HRS; 20.5 ACRE-FEET.

OPERATION REACH XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	187.5	370.17
20.19	4.9	369.10
23.83	3.7	369.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.70 WATERSHED INCHES; 248 CFS-HRS; 20.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	1290.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.28 WATERSHED INCHES; 1915 CFS-HRS; 158.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	457.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.63 WATERSHED INCHES; 679 CFS-HRS; 56.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	1742.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.08 WATERSHED INCHES; 2588 CFS-HRS; 213.8 ACRE-FEET.

1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Subdivided
VERSION
09/21/** Option F, Ponds 2-4
2.04TEST
18:17:00 PASS 5 JOB NO. 1 PAGE 27

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.58	1436.9	383.00

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.05 WATERSHED INCHES; 2572 CFS-HRS; 212.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.75	1287.0	379.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.94 WATERSHED INCHES; 2527 CFS-HRS; 208.8 ACRE-FEET.

OPERATION RESVOR STRUCTURE 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)

```
      12.86                        1203.2                          379.19

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.86 WATERSHED INCHES;    2492 CFS-HRS;     206.0 ACRE-
                FEET.


 OPERATION REACH    XSECTION   7

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.07                        1012.0                          372.21

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.84 WATERSHED INCHES;    2484 CFS-HRS;     205.3 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   8

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.31                         539.7                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.57 WATERSHED INCHES;     727 CFS-HRS;      60.0 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                     Option F, Ponds 2-4
 2.04TEST
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                         647.2                        (NULL)
      13.05                        1134.4                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.77 WATERSHED INCHES;    3205 CFS-HRS;     264.9 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.63                         499.5                          354.05
      13.37                         962.5                          355.09

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.73 WATERSHED INCHES;    3187 CFS-HRS;     263.4 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  11
```

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                        630.0                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.67 WATERSHED INCHES;     866 CFS-HRS;      71.6 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  12

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.38                       1030.9                       (NULL)
      13.32                       1065.7                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.71 WATERSHED INCHES;    4047 CFS-HRS;     334.4 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  13

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.45                        862.2                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.91 WATERSHED INCHES;    1440 CFS-HRS;     119.0 ACRE-
                FEET.


 OPERATION REACH    XSECTION  14
1
 TR20 ------------------------------------------------------------------- SCS
 -
               Valley Mede Ultimate LU, Fair Cond, Subdivided
               VERSION
 09/21/**                    Option F, Ponds 2-4
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   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.63                        771.1                        382.65

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.91 WATERSHED INCHES;    1439 CFS-HRS;     118.9 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  15

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.31                        270.7                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.56 WATERSHED INCHES;     375 CFS-HRS;      31.0 ACRE-
                FEET.
```

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	926.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.94 WATERSHED INCHES; 1787 CFS-HRS; 147.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	353.6	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.4	(RUNOFF)
20.84	5.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.47 WATERSHED INCHES; 334 CFS-HRS; 27.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	1002.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.95 WATERSHED INCHES; 2057 CFS-HRS; 170.0 ACRE-FEET.

OPERATION REACH XSECTION 19
1
TR20 ---------- SCS -
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.85	872.5	359.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.92 WATERSHED INCHES; 2044 CFS-HRS; 168.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	1270.7	(RUNOFF)
18.66	27.6	(RUNOFF)

```
      20.11                          25.3                          (RUNOFF)
      20.66                          24.2                          (RUNOFF)
      21.98                          22.0                          (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.87 WATERSHED INCHES;    1456 CFS-HRS;     120.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  21

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                         1683.8                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.23 WATERSHED INCHES;    3470 CFS-HRS;     286.8 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  22

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.27                         2603.4                        (NULL)
      13.11                         1948.7                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.78 WATERSHED INCHES;    7315 CFS-HRS;     604.5 ACRE-
                FEET.


 OPERATION REACH    XSECTION  23

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.34                         2578.4                         350.50
      13.17                         1947.0                         349.71

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.77 WATERSHED INCHES;    7306 CFS-HRS;     603.7 ACRE-
                FEET.
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                    Option F, Ponds 2-4
 2.04TEST
 18:17:00                  PASS   5   JOB NO.   1                    PAGE
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 OPERATION RUNOFF   XSECTION  24

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                          59.9                          (RUNOFF)
      24.03                           1.0                          (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.11 WATERSHED INCHES;      66 CFS-HRS;       5.4 ACRE-
                FEET.
```

```
 OPERATION ADDHYD   XSECTION  25

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                        2624.0                       (NULL)
       13.17                        1955.3                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.76 WATERSHED INCHES;    7368 CFS-HRS;     608.9 ACRE-
                  FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   5


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  9.88       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =99            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                        1440.5                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.69 WATERSHED INCHES;    2012 CFS-HRS;     166.3 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  26

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.42                        1347.2                        372.70

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.68 WATERSHED INCHES;    2009 CFS-HRS;     166.0 ACRE-
                  FEET.
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                     Option F, Ponds 2-4
 2.04TEST
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 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.23                         260.1                       (RUNOFF)
       18.67                           6.3                       (RUNOFF)
       21.96                           5.0                       (RUNOFF)
       24.03                           4.3                       (RUNOFF)
```

```
    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.02 WATERSHED INCHES;     305 CFS-HRS;      25.2 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  26

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.34                         231.9                        370.33
       20.18                           5.8                        369.12
       24.08                           4.3                        369.09

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.02 WATERSHED INCHES;     305 CFS-HRS;      25.2 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION   4

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.41                        1563.6                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.57 WATERSHED INCHES;    2309 CFS-HRS;     190.8 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION   5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.37                         558.6                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  6.94 WATERSHED INCHES;     836 CFS-HRS;      69.1 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION   6

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.40                        2116.2                       (NULL)
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                     Option F, Ponds 2-4
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.36 WATERSHED INCHES;    3132 CFS-HRS;     258.8 ACRE-
                  FEET.

 *** WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE  2,
               VALUE EXTRAPOLATED.
               ***
```

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.55	1803.3	384.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.32 WATERSHED INCHES; 3113 CFS-HRS; 257.2 ACRE-FEET.

*** WARNING – DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 3, VALUE EXTRAPOLATED.
***

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.67	1699.0	379.72

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.18 WATERSHED INCHES; 3055 CFS-HRS; 252.5 ACRE-FEET.

*** WARNING – DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 4, VALUE EXTRAPOLATED.
***

OPERATION RESVOR STRUCTURE 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.74	1644.6	379.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.09 WATERSHED INCHES; 3016 CFS-HRS; 249.3 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.95	1384.0	372.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.06 WATERSHED INCHES; 3005 CFS-HRS; 248.3 ACRE-FEET.

1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Subdivided
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09/21/** Option F, Ponds 2-4
2.04TEST
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OPERATION RUNOFF XSECTION 8

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.30                        662.1                      (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.88 WATERSHED INCHES;     897 CFS-HRS;      74.1 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                        812.4                      (NULL)
      12.93                       1562.5                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                7.00 WATERSHED INCHES;    3888 CFS-HRS;     321.3 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.25                       1323.5                       355.75

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.96 WATERSHED INCHES;    3868 CFS-HRS;     319.6 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  11

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.31                        775.0                      (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.98 WATERSHED INCHES;    1067 CFS-HRS;      88.1 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  12

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.39                       1255.6                      (NULL)
      13.22                       1465.0                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.94 WATERSHED INCHES;    4919 CFS-HRS;     406.5 ACRE-
                FEET.
1
 TR20 ------------------------------------------------------------------- SCS
 -
               Valley Mede Ultimate LU, Fair Cond, Subdivided
               VERSION
 09/21/**                    Option F, Ponds 2-4
 2.04TEST
 18:17:00                  PASS   6   JOB NO.   1                    PAGE
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```

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	1050.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.22 WATERSHED INCHES; 1760 CFS-HRS; 145.4 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	951.3	383.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.21 WATERSHED INCHES; 1756 CFS-HRS; 145.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	321.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.85 WATERSHED INCHES; 449 CFS-HRS; 37.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.56	1141.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.21 WATERSHED INCHES; 2167 CFS-HRS; 179.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	413.8	(RUNOFF)
15.84	11.3	(RUNOFF)
17.34	8.7	(RUNOFF)
20.05	6.4	(RUNOFF)
20.61	6.1	(RUNOFF)
20.84	6.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.80 WATERSHED INCHES; 393 CFS-HRS; 32.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.53	1231.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.22 WATERSHED INCHES; 2494 CFS-HRS; 206.1 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.83	1081.0	360.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.17 WATERSHED INCHES; 2479 CFS-HRS; 204.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	1503.9	(RUNOFF)
18.66	32.4	(RUNOFF)
20.11	29.7	(RUNOFF)
20.66	28.3	(RUNOFF)
21.98	25.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.19 WATERSHED INCHES; 1737 CFS-HRS; 143.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	2029.0	(NULL)
20.03	78.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.50 WATERSHED INCHES; 4183 CFS-HRS; 345.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	3144.3	(NULL)
13.06	2590.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.01 WATERSHED INCHES; 8881 CFS-HRS; 733.9 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	3117.5	351.11
13.12	2588.4	350.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.01 WATERSHED INCHES; 8870 CFS-HRS; 733.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	74.1	(RUNOFF)
24.03	1.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.38 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	3174.0	(NULL)
13.12	2598.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.00 WATERSHED INCHES; 8948 CFS-HRS; 739.5 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 2.64 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 5, ARC 2							
MAIN TIME INCREMENT .050 HOURS							
ALTERNATE 1 STORM 1							
XSECTION 1	RUNOFF	.41	1.17	---	12.33	223	543.9
XSECTION 26	REACH	.41	1.17	370.17	12.50	188	458.5
XSECTION 3	RUNOFF	.07	.83	---	12.25	30	428.6
XSECTION 26	REACH	.07	.83	369.31	12.49	21	300.0
XSECTION 4	ADDHYD	.47	1.12	---	12.50	209	444.7
XSECTION 5	RUNOFF	.19	.80	---	12.41	60	315.8
XSECTION 6	ADDHYD	.66	1.03	---	12.48	267	404.5
STRUCTURE 2	RESVOR	.66	1.03	373.21	12.80	187	283.3
STRUCTURE 3	RESVOR	.66	1.03	371.07	13.57	105	159.1
STRUCTURE 4	RESVOR	.66	1.02	370.90	14.35	88	133.3
XSECTION 7	REACH	.66	1.02	369.07	14.75	85	128.8
XSECTION 8	RUNOFF	.20	.78	---	12.34	70	350.0
XSECTION 9	ADDHYD	.86	.97	---	14.68	92	107.0
XSECTION 10	REACH	.86	.97	350.48	14.96	91	105.8
XSECTION 11	RUNOFF	.24	.82	---	12.35	86	358.3
XSECTION 12	ADDHYD	1.10	.93	---	12.41	133	120.9
XSECTION 13	RUNOFF	.38	.92	---	12.50	129	339.5
XSECTION 14	REACH	.38	.92	378.90	12.64	121	318.4
XSECTION 15	RUNOFF	.09	1.28	---	12.33	53	588.9
XSECTION 16	ADDHYD	.47	.99	---	12.57	154	327.7
XSECTION 17	RUNOFF	.07	2.00	---	12.14	99	1414.3
XSECTION 18	ADDHYD	.54	1.10	---	12.53	177	327.8
XSECTION 19	REACH	.54	1.09	357.82	13.10	132	244.4
XSECTION 20	RUNOFF	.33	1.50	---	12.22	288	872.7
XSECTION 21	ADDHYD	.86	1.24	---	12.22	317	368.6
XSECTION 22	ADDHYD	1.96	1.04	---	12.26	420	214.3
XSECTION 23	REACH	1.96	1.04	346.50	12.36	398	203.1
XSECTION 24	RUNOFF	.02	.60	---	12.24	6	300.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 25	ADDHYD	1.98	1.04	---	12.36	403	203.5
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 1 STORM 2							
XSECTION 1	RUNOFF	.41	1.61	---	12.33	307	748.8
XSECTION 26	REACH	.41	1.61	370.44	12.48	266	648.8
XSECTION 3	RUNOFF	.07	1.21	---	12.24	44	628.6
XSECTION 26	REACH	.07	1.20	369.42	12.46	34	485.7
XSECTION 4	ADDHYD	.47	1.55	---	12.48	299	636.2
XSECTION 5	RUNOFF	.19	1.17	---	12.40	92	484.2
XSECTION 6	ADDHYD	.66	1.44	---	12.46	388	587.9
STRUCTURE 2	RESVOR	.66	1.44	374.48	12.73	289	437.9
STRUCTURE 3	RESVOR	.66	1.44	372.15	13.38	164	248.5
STRUCTURE 4	RESVOR	.66	1.43	371.98	13.90	144	218.2
XSECTION 7	REACH	.66	1.43	369.45	14.23	138	209.1
XSECTION 8	RUNOFF	.20	1.14	---	12.33	107	535.0
XSECTION 9	ADDHYD	.86	1.36	---	14.21	149	173.3
XSECTION 10	REACH	.86	1.36	351.20	14.46	146	169.8
XSECTION 11	RUNOFF	.24	1.19	---	12.34	129	537.5
XSECTION 12	ADDHYD	1.10	1.33	---	12.41	206	187.3
XSECTION 13	RUNOFF	.38	1.31	---	12.48	189	497.4
XSECTION 14	REACH	.38	1.31	380.38	12.74	153	402.6
XSECTION 15	RUNOFF	.09	1.73	---	12.32	73	811.1
XSECTION 16	ADDHYD	.47	1.39	---	12.65	190	404.3
XSECTION 17	RUNOFF	.07	2.51	---	12.14	124	1771.4
XSECTION 18	ADDHYD	.54	1.50	---	12.56	213	394.4
XSECTION 19	REACH	.54	1.48	358.06	13.10	170	314.8
XSECTION 20	RUNOFF	.33	1.98	---	12.21	380	1151.5
XSECTION 21	ADDHYD	.86	1.66	---	12.23	437	508.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 22	ADDHYD	1.96	1.43	---	12.26	604	308.2
XSECTION 23	REACH	1.96	1.43	347.10	12.36	582	296.9
XSECTION 24	RUNOFF	.02	.92	---	12.23	10	500.0
XSECTION 25	ADDHYD	1.98	1.42	---	12.36	589	297.5
RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 1 STORM 10							
XSECTION 1	RUNOFF	.41	3.10	---	12.32	596	1453.7
XSECTION 26	REACH	.41	3.10	371.17	12.45	536	1307.3
XSECTION 3	RUNOFF	.07	2.55	---	12.23	96	1371.4
XSECTION 26	REACH	.07	2.55	369.70	12.42	80	1142.9
XSECTION 4	ADDHYD	.47	3.03	---	12.45	615	1308.5
XSECTION 5	RUNOFF	.19	2.49	---	12.38	202	1063.2
XSECTION 6	ADDHYD	.66	2.87	---	12.43	812	1230.3
STRUCTURE 2	RESVOR	.66	2.87	377.92	12.65	633	959.1
STRUCTURE 3	RESVOR	.66	2.85	376.03	13.23	347	525.8
STRUCTURE 4	RESVOR	.66	2.83	376.01	13.85	289	437.9
XSECTION 7	REACH	.66	2.82	370.20	14.12	283	428.8
XSECTION 8	RUNOFF	.20	2.45	---	12.32	238	1190.0
XSECTION 9	ADDHYD	.86	2.74	---	14.07	307	357.0
XSECTION 10	REACH	.86	2.72	353.42	14.57	289	336.0
XSECTION 11	RUNOFF	.24	2.53	---	12.32	283	1179.2
XSECTION 12	ADDHYD	1.10	2.68	---	12.38	404	367.3
XSECTION 13	RUNOFF	.38	2.70	---	12.47	397	1044.7
XSECTION 14	REACH	.38	2.70	381.44	12.70	332	873.7
XSECTION 15	RUNOFF	.09	3.26	---	12.32	136	1511.1
XSECTION 16	ADDHYD	.47	2.81	---	12.62	403	857.4
XSECTION 17	RUNOFF	.07	4.12	---	12.14	199	2842.9
XSECTION 18	ADDHYD	.54	2.87	---	12.56	442	818.5

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 10							
XSECTION 19	REACH	.54	2.84	358.85	12.98	361	668.5
XSECTION 20	RUNOFF	.33	3.57	---	12.21	671	2033.3
XSECTION 21	ADDHYD	.86	3.08	---	12.23	824	958.1
XSECTION 22	ADDHYD	1.96	2.75	---	12.26	1177	600.5
XSECTION 23	REACH	1.96	2.75	348.41	12.34	1151	587.2
XSECTION 24	RUNOFF	.02	2.13	---	12.22	25	1250.0
XSECTION 25	ADDHYD	1.98	2.74	---	12.34	1171	591.4

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 50							
XSECTION 1	RUNOFF	.41	5.25	---	12.31	995	2426.8
XSECTION 26	REACH	.41	5.25	371.96	12.43	915	2231.7
XSECTION 3	RUNOFF	.07	4.57	---	12.23	172	2457.1
XSECTION 26	REACH	.07	4.57	370.02	12.35	149	2128.6
XSECTION 4	ADDHYD	.47	5.15	---	12.42	1057	2248.9
XSECTION 5	RUNOFF	.19	4.50	---	12.37	365	1921.1
XSECTION 6	ADDHYD	.66	4.96	---	12.41	1417	2147.0
STRUCTURE 2	RESVOR	.66	4.93	381.59	12.61	1118	1693.9
STRUCTURE 3	RESVOR	.66	4.85	378.68	12.93	862	1306.1
STRUCTURE 4	RESVOR	.66	4.78	378.65	13.16	778	1178.8
XSECTION 7	REACH	.66	4.77	371.60	13.37	729	1104.5
XSECTION 8	RUNOFF	.20	4.45	---	12.31	433	2165.0
XSECTION 9	ADDHYD	.86	4.69	---	13.34	798	927.9
XSECTION 10	REACH	.86	4.66	354.56	13.71	710	825.6
XSECTION 11	RUNOFF	.24	4.54	---	12.32	509	2120.8
XSECTION 12	ADDHYD	1.10	4.64	---	12.39	774	703.6
XSECTION 13	RUNOFF	.38	4.76	---	12.46	698	1836.8
XSECTION 14	REACH	.38	4.76	382.28	12.65	615	1618.4
XSECTION 15	RUNOFF	.09	5.41	---	12.31	223	2477.8

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED

HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 50							
XSECTION 16	ADDHYD	.47	4.84	---	12.58	741	1576.6
XSECTION 17	RUNOFF	.07	6.29	---	12.14	301	4300.0
XSECTION 18	ADDHYD	.54	4.85	---	12.54	803	1487.0
XSECTION 19	REACH	.54	4.81	359.63	12.92	691	1279.6
XSECTION 20	RUNOFF	.33	5.72	---	12.21	1066	3230.3
XSECTION 21	ADDHYD	.86	5.11	---	12.23	1339	1557.0
XSECTION 22	ADDHYD	1.96	4.70	---	12.27	2018	1029.6
XSECTION 23	REACH	1.96	4.69	349.77	12.34	1991	1015.8
XSECTION 24	RUNOFF	.02	4.03	---	12.21	47	2350.0
XSECTION 25	ADDHYD	1.98	4.68	---	12.33	2027	1023.7

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 98							
XSECTION 1	RUNOFF	.41	6.39	---	12.31	1200	2926.8
XSECTION 26	REACH	.41	6.38	372.31	12.43	1114	2717.1
XSECTION 3	RUNOFF	.07	5.70	---	12.23	213	3042.9
XSECTION 26	REACH	.07	5.70	370.17	12.34	188	2685.7
XSECTION 4	ADDHYD	.47	6.28	---	12.41	1291	2746.8
XSECTION 5	RUNOFF	.19	5.63	---	12.37	457	2405.3
XSECTION 6	ADDHYD	.66	6.08	---	12.40	1742	2639.4
STRUCTURE 2	RESVOR	.66	6.05	383.00	12.58	1437	2177.3
STRUCTURE 3	RESVOR	.66	5.94	379.22	12.75	1287	1950.0
STRUCTURE 4	RESVOR	.66	5.86	379.19	12.86	1203	1822.7
XSECTION 7	REACH	.66	5.84	372.21	13.07	1012	1533.3
XSECTION 8	RUNOFF	.20	5.57	---	12.31	540	2700.0
XSECTION 9	ADDHYD	.86	5.77	---	13.05	1134	1318.6
XSECTION 10	REACH	.86	5.73	355.09	13.37	962	1118.6
XSECTION 11	RUNOFF	.24	5.67	---	12.32	630	2625.0
XSECTION 12	ADDHYD	1.10	5.71	---	13.32	1066	969.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 98							
XSECTION 13	RUNOFF	.38	5.91	---	12.45	862	2268.4
XSECTION 14	REACH	.38	5.91	382.65	12.63	771	2028.9
XSECTION 15	RUNOFF	.09	6.56	---	12.31	271	3011.1
XSECTION 16	ADDHYD	.47	5.94	---	12.57	927	1972.3
XSECTION 17	RUNOFF	.07	7.47	---	12.14	354	5057.1
XSECTION 18	ADDHYD	.54	5.95	---	12.54	1002	1855.6
XSECTION 19	REACH	.54	5.92	359.96	12.85	872	1614.8
XSECTION 20	RUNOFF	.33	6.87	---	12.21	1271	3851.5
XSECTION 21	ADDHYD	.86	6.23	---	12.23	1684	1958.1
XSECTION 22	ADDHYD	1.96	5.78	---	12.27	2603	1328.1
XSECTION 23	REACH	1.96	5.77	350.50	12.34	2578	1315.3
XSECTION 24	RUNOFF	.02	5.11	---	12.21	60	3000.0
XSECTION 25	ADDHYD	1.98	5.76	---	12.33	2624	1325.3

RAINFALL OF 9.88 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 99							
XSECTION 1	RUNOFF	.41	7.69	---	12.31	1441	3514.6
XSECTION 26	REACH	.41	7.68	372.70	12.42	1347	3285.4
XSECTION 3	RUNOFF	.07	7.02	---	12.23	260	3714.3
XSECTION 26	REACH	.07	7.02	370.33	12.34	232	3314.3
XSECTION 4	ADDHYD	.47	7.57	---	12.41	1564	3327.7
XSECTION 5	RUNOFF	.19	6.94	---	12.37	559	2942.1
XSECTION 6	ADDHYD	.66	7.36	---	12.40	2116	3206.1
STRUCTURE 2	RESVOR	.66	7.32	384.33	12.55	1803	2731.8
STRUCTURE 3	RESVOR	.66	7.18	379.72	12.67	1699	2574.2
STRUCTURE 4	RESVOR	.66	7.09	379.69	12.74	1645	2492.4
XSECTION 7	REACH	.66	7.06	372.92	12.95	1384	2097.0
XSECTION 8	RUNOFF	.20	6.88	---	12.30	662	3310.0
XSECTION 9	ADDHYD	.86	7.00	---	12.93	1562	1816.3

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 99							
XSECTION 10	REACH	.86	6.96	355.75	13.25	1323	1538.4
XSECTION 11	RUNOFF	.24	6.98	---	12.31	775	3229.2
XSECTION 12	ADDHYD	1.10	6.94	---	13.22	1465	1331.8
XSECTION 13	RUNOFF	.38	7.22	---	12.45	1050	2763.2
XSECTION 14	REACH	.38	7.21	383.03	12.62	951	2502.6
XSECTION 15	RUNOFF	.09	7.85	---	12.31	321	3566.7
XSECTION 16	ADDHYD	.47	7.21	---	12.56	1142	2429.8
XSECTION 17	RUNOFF	.07	8.80	---	12.14	414	5914.3
XSECTION 18	ADDHYD	.54	7.22	---	12.53	1232	2281.5
XSECTION 19	REACH	.54	7.17	360.30	12.83	1081	2001.9
XSECTION 20	RUNOFF	.33	8.19	---	12.21	1504	4557.6
XSECTION 21	ADDHYD	.86	7.50	---	12.24	2029	2359.3
XSECTION 22	ADDHYD	1.96	7.01	---	12.27	3144	1604.1
XSECTION 23	REACH	1.96	7.01	351.11	12.34	3117	1590.3
XSECTION 24	RUNOFF	.02	6.38	---	12.21	74	3700.0
XSECTION 25	ADDHYD	1.98	7.00	---	12.33	3174	1603.0

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 1 STORM 1											
26	3113		222	12.4	188	12.5	.24	1.61	.074	.846	.26

```
  26   1954            30  12.3      21  12.5    .21   1.64   .140   .717
  .20
   7   2088            88  14.4      85  14.8   1.20   1.08   .058   .969
   .14
  10   3852            92  14.7      91  14.9    .63   1.48   .015   .987
  .20
  14   2484           129  12.5     121  12.6    .81   1.47   .033   .940
  .35

  19   4092           176  12.6     132  13.1   1.06   1.12   .247   .746
  .09
  23    586           419  12.3     397  12.4    .95   1.14   .016   .947
  .52

    ALTERNATE    1   STORM    2
    --------------------------
  26   3113           305  12.4     265  12.5    .25   1.60   .062   .869
  .28
  26   1954            44  12.3      34  12.4    .22   1.64   .114   .759
  .23
   7   2088           144  13.9     138  14.3    .88   1.17   .047   .955
   .17
  10   3852           149  14.2     146  14.4    .71   1.43   .018   .977
  .21
  14   2484           189  12.5     153  12.8    .75   1.23   .133   .812
  .17

  19   4092           213  12.6     170  13.1   1.08   1.11   .215   .797
  .09
  23    586           603  12.3     581  12.4    .74   1.19   .012   .964
  .57

    ALTERNATE    1   STORM   10
    --------------------------
  26   3113           594  12.3     536  12.4    .27   1.57   .045   .902
  .34
  26   1954            96  12.3      79  12.4    .22   1.63   .074   .826
  .30
   7   2088           289  13.9     283  14.1    .64   1.25   .031   .982
   .21
  10   3852           307  14.1     289  14.6    .42   1.27   .073   .941
  .10
  14   2484           397  12.4     332  12.7    .57   1.27   .118   .836
  .19

  19   4092           442  12.6     361  13.0    .88   1.16   .192   .817
  .10
  23    586          1175  12.3    1150  12.4    .48   1.27   .007   .979
  .67?

    ALTERNATE    1   STORM   50
    --------------------------
  26   3113           994  12.3     913  12.4    .30   1.55   .036   .919
  .39
  26   1954           171  12.3     149  12.4    .23   1.62   .053   .874
  .35
1
 TR20 ---------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                    Option F, Ponds 2-4
 2.04TEST
 18:17:00                    SUMMARY, JOB NO.   1                      PAGE
```

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION: INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS: Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1 STORM 50											
7	2088		778	13.1	728	13.4	.59	1.27	.041	.937	.26
10	3852		798	13.4	710	13.7	.23	1.40	.065	.889	.14
14	2484		698	12.4	615	12.6	.37	1.36	.078	.881	.24
19	4092		803	12.6	690	12.9	.47	1.30	.135	.859	.14
23	586		2013	12.3	1988	12.4	.38	1.32	.005	.988	.76?
ALTERNATE 1 STORM 98											
26	3113		1198	12.3	1110	12.4	.32	1.54	.033	.926	.41
26	1954		211	12.3	187	12.4	.24	1.61	.046	.889	.37
7	2088		1201	12.9	1010	13.1	.65	1.25	.052	.840	.28
10	3852		1134	13.1	962	13.4	.22	1.40	.068	.848	.16
14	2484		862	12.4	770	12.6	.33	1.38	.067	.893	.25
19	4092		1002	12.6	872	12.9	.40	1.32	.121	.871	.15
23	586		2591	12.3	2576	12.4	.34	1.34	.005	.994	.80?
ALTERNATE 1 STORM 99											
26	3113		1439	12.3	1342	12.4	.33	1.53	.030	.933	.42
26	1954		258	12.3	232	12.4	.24	1.60	.041	.898	.40
7	2088		1644	12.8	1384	12.9	.75	1.23	.061	.842	.28
10	3852		1560	12.9	1323	13.3	.22	1.40	.071	.849	.17
14	2484		1050	12.4	950	12.6	.30	1.40	.059	.904	.27

```
  19   4092          1230  12.6    1080  12.9    .38   1.34   .111   .878
  .16
  23    586          3127  12.3    3115  12.4    .33   1.34   .004   .996
  .83?
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                     Option F, Ponds 2-4
 2.04TEST
 18:17:00                     SUMMARY, JOB NO.   1                      PAGE
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	10	50	98
STRUCTURE 4		.66					
ALTERNATE	1		88	144	289	778	1203
STRUCTURE 3		.66					
ALTERNATE	1		105	164	347	862	1287
STRUCTURE 2		.66					
ALTERNATE	1		187	289	633	1118	1437
XSECTION 1		.41					
ALTERNATE	1		223	307	596	995	1200
XSECTION 3		.07					
ALTERNATE	1		30	44	96	172	213
XSECTION 4		.47					
ALTERNATE	1		209	299	615	1057	1291
XSECTION 5		.19					
ALTERNATE	1		60	92	202	365	457
XSECTION 6		.66					
ALTERNATE	1		267	388	812	1417	1742

XSECTION 7 .66

ALTERNATE 1 85 138 283 729
1012

XSECTION 8 .20

ALTERNATE 1 70 107 238 433
540

XSECTION 9 .86

ALTERNATE 1 92 149 307 798
1134

XSECTION 10 .86

ALTERNATE 1 91 146 289 710
962

XSECTION 11 .24

ALTERNATE 1 86 129 283 509
630

XSECTION 12 1.10

1
TR20 ---------- SCS
-
Valley Mede Ultimate LU, Fair Cond, Subdivided
VERSION
09/21/** Option F, Ponds 2-4
2.04TEST
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	10	50	98
XSECTION 12	1.10					
ALTERNATE 1		133	206	404	774	1066
XSECTION 13	.38					
ALTERNATE 1		129	189	397	698	862
XSECTION 14	.38					
ALTERNATE 1		121	153	332	615	771

```
 XSECTION   15          .09
 ---------------------------
    ALTERNATE    1                53        73       136       223
    271

 XSECTION   16          .47
 ---------------------------
    ALTERNATE    1               154       190       403       741
    927

 XSECTION   17          .07
 ---------------------------
    ALTERNATE    1                99       124       199       301
    354

 XSECTION   18          .54
 ---------------------------
    ALTERNATE    1               177       213       442       803
    1002

 XSECTION   19          .54
 ---------------------------
    ALTERNATE    1               132       170       361       691
    872

 XSECTION   20          .33
 ---------------------------
    ALTERNATE    1               288       380       671      1066
    1271

 XSECTION   21          .86
 ---------------------------
    ALTERNATE    1               317       437       824      1339
    1684

 XSECTION   22         1.96
 ---------------------------
    ALTERNATE    1               420       604      1177      2018
    2603

 XSECTION   23         1.96
 ---------------------------
    ALTERNATE    1               398       582      1151      1991
    2578

 XSECTION   24          .02
 ---------------------------
    ALTERNATE    1                 6        10        25        47
    60

 XSECTION   25         1.98
 ---------------------------
    ALTERNATE    1               403       589      1171      2027
    2624
1
 TR20 ---------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                    Option F, Ponds 2-4
 2.04TEST
 18:17:00                    SUMMARY, JOB NO.   1                     PAGE
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	10	50	98
XSECTION	26	.07					
ALTERNATE	1		21	34	80	149	188

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE	4	.66	
ALTERNATE	1		1645
STRUCTURE	3	.66	
ALTERNATE	1		1699
STRUCTURE	2	.66	
ALTERNATE	1		1803
XSECTION	1	.41	
ALTERNATE	1		1441
XSECTION	3	.07	
ALTERNATE	1		260
XSECTION	4	.47	
ALTERNATE	1		1564
XSECTION	5	.19	
ALTERNATE	1		559
XSECTION	6	.66	
ALTERNATE	1		2116
XSECTION	7	.66	
ALTERNATE	1		1384
XSECTION	8	.20	

```
   ALTERNATE    1                 662

 XSECTION    9          .86
 ---------------------------
   ALTERNATE    1                1562

 XSECTION   10          .86
 ---------------------------
   ALTERNATE    1                1323
1
 TR20 ------------------------------------------------------------------------ SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                        Option F, Ponds 2-4
 2.04TEST
 18:17:00                        SUMMARY, JOB NO.   1                      PAGE
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                              SUMMARY TABLE 3
                              ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.........
   ID               (SQ MI)          99


 XSECTION   11          .24
 ---------------------------
   ALTERNATE    1                 775

 XSECTION   12         1.10
 ---------------------------
   ALTERNATE    1                1465

 XSECTION   13          .38
 ---------------------------
   ALTERNATE    1                1050

 XSECTION   14          .38
 ---------------------------
   ALTERNATE    1                 951

 XSECTION   15          .09
 ---------------------------
   ALTERNATE    1                 321

 XSECTION   16          .47
 ---------------------------
   ALTERNATE    1                1142

 XSECTION   17          .07
 ---------------------------
   ALTERNATE    1                 414

 XSECTION   18          .54
 ---------------------------
   ALTERNATE    1                1232

 XSECTION   19          .54
 ---------------------------
```

```
    ALTERNATE    1                1081

 XSECTION   20          .33
 ----------------------------
    ALTERNATE    1                1504

 XSECTION   21          .86
 ----------------------------
    ALTERNATE    1                2029

 XSECTION   22         1.96
 ----------------------------
    ALTERNATE    1                3144

 XSECTION   23         1.96
 ----------------------------
    ALTERNATE    1                3117
1
 TR20 ---------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                     Option F, Ponds 2-4
 2.04TEST
 18:17:00                     SUMMARY, JOB NO.   1                      PAGE
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                             SUMMARY TABLE 3
                             ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.........
   ID               (SQ MI)         99


 XSECTION   24          .02
 ----------------------------
    ALTERNATE    1                  74

 XSECTION   25         1.98
 ----------------------------
    ALTERNATE    1                3174

 XSECTION   26          .07
 ----------------------------
    ALTERNATE    1                 232
1
 TR20 ---------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                     Option F, Ponds 2-4
 2.04TEST



 END OF  1 JOBS IN THIS RUN
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SCS TR-20, VERSION 2.04TEST
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**,18:17:00
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FILES GENERATED - DATED 09/21/**,18:17:00

NONE!

TOTAL NUMBER OF WARNINGS = 3, MESSAGES = 0

*** TR-20 RUN COMPLETED ***

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

Plumtree Plumtree

Elevation (ft)

400
390
380
370
360
350
340

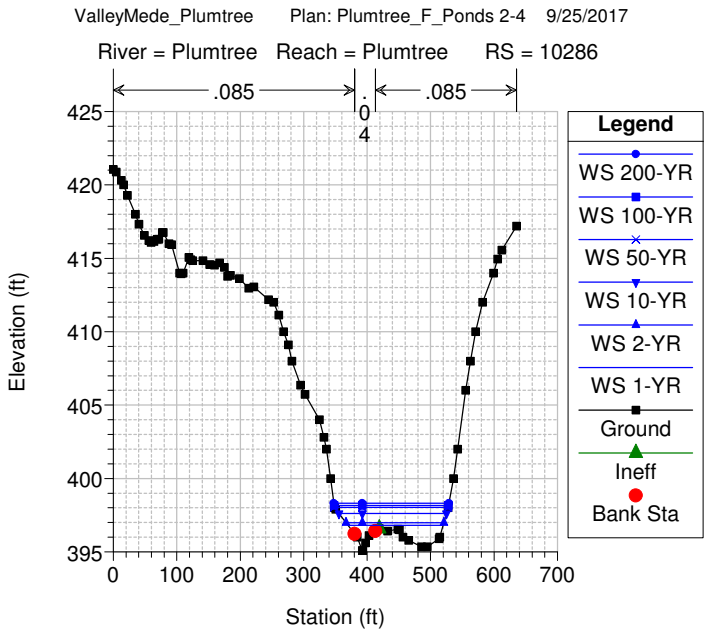
0
2000
4000
6000
8000
10000
12000

Main Channel Distance (ft)

380 526 762 911 1124 1291 1463 1641 1830 1994 2153 2331 2485 2589 2759 2900 Frederick Rd 2978 3077 3179 3296 3428 3550 3688 3816 3930 4033 4185 4289 4400 US 40 4636 4745 4845 5000 Longview Dr 5107 5209 5323 5419 5560 5650 Brookmede Rd 5824 5926 6028 6122 6250 Hearthstone Rd 6350 6454 6568 6663 6766 6893 7030 7100 Weir 2 7367 7548 7800 7954 8094 8229 8374 8579 8753 8987 9196 9301 9398 9499 9650 Michaels Way 9814 10044 10286

Legend

- WS 200-YR
- WS 100-YR
- WS 50-YR
- WS 10-YR
- WS 2-YR
- WS 1-YR
- Ground
- LOB
- ROB
- Right Levee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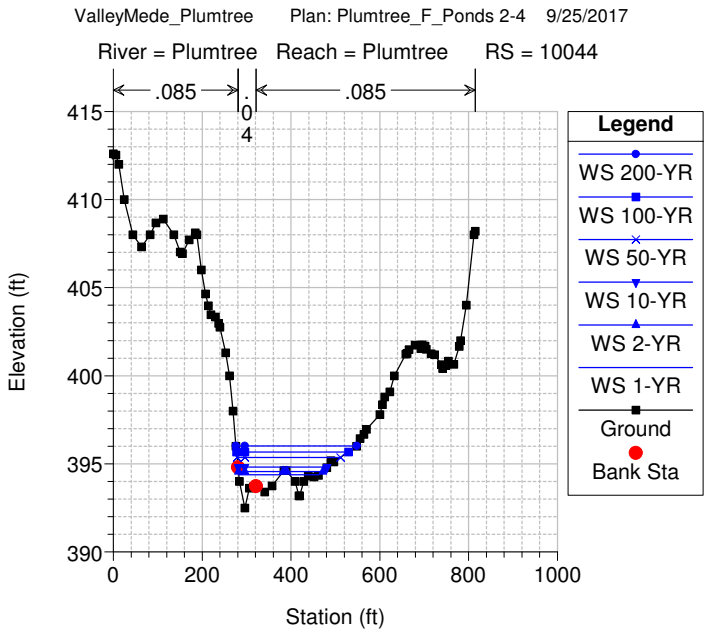
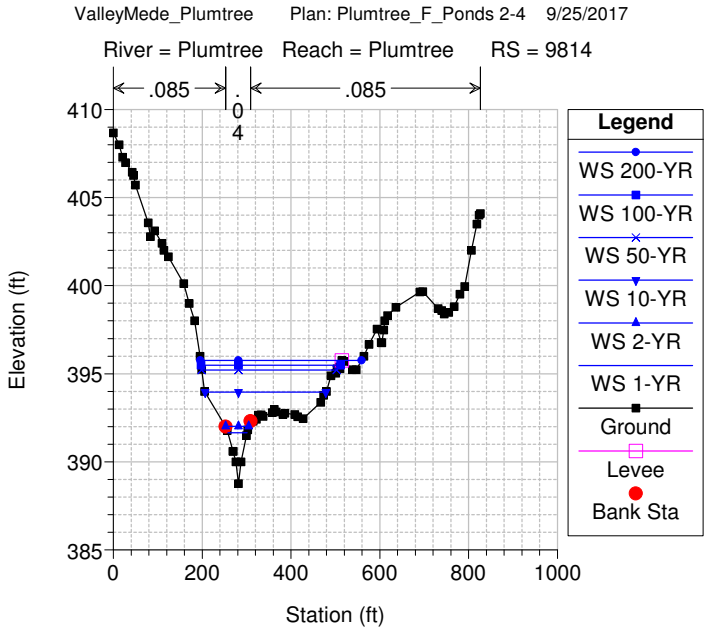
River = Plumtree Reach = Plumtree RS = 10286
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 10044
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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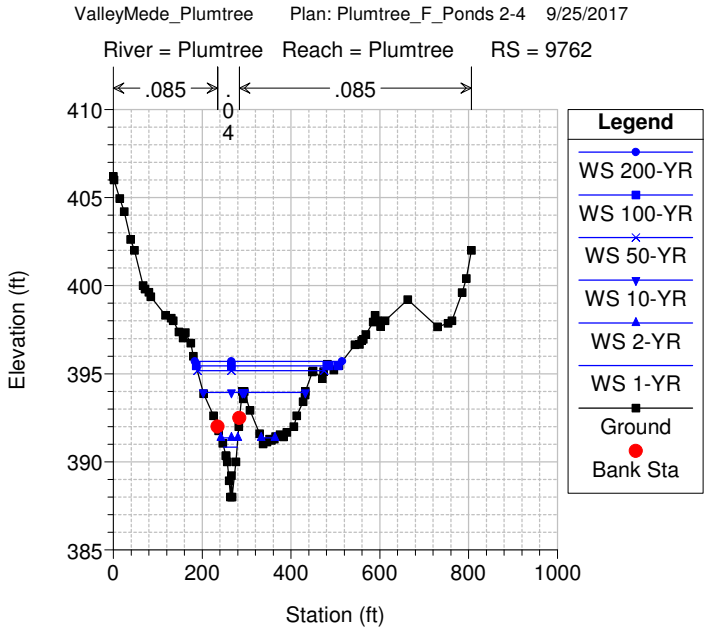
River = Plumtree Reach = Plumtree RS = 9814
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)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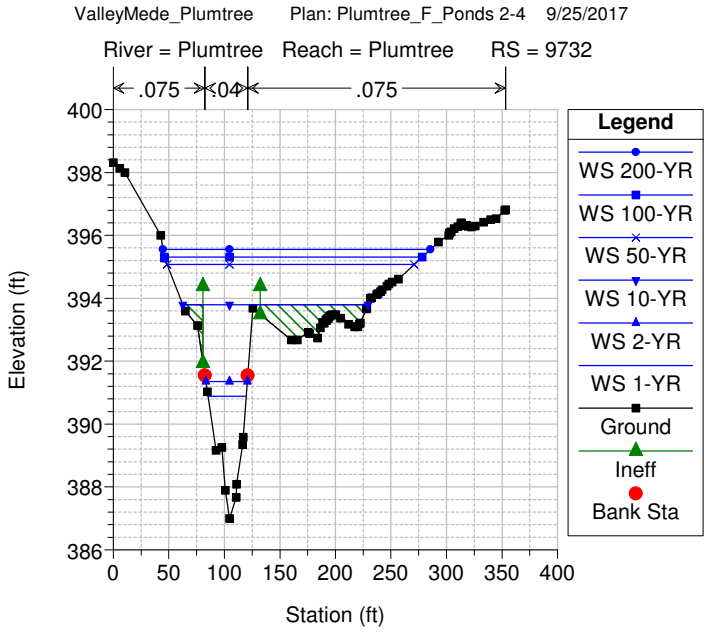
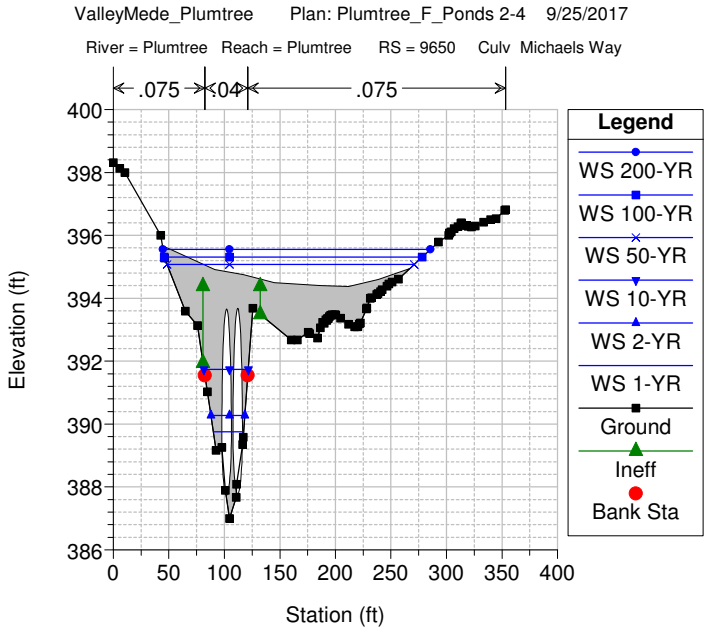
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 9732
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
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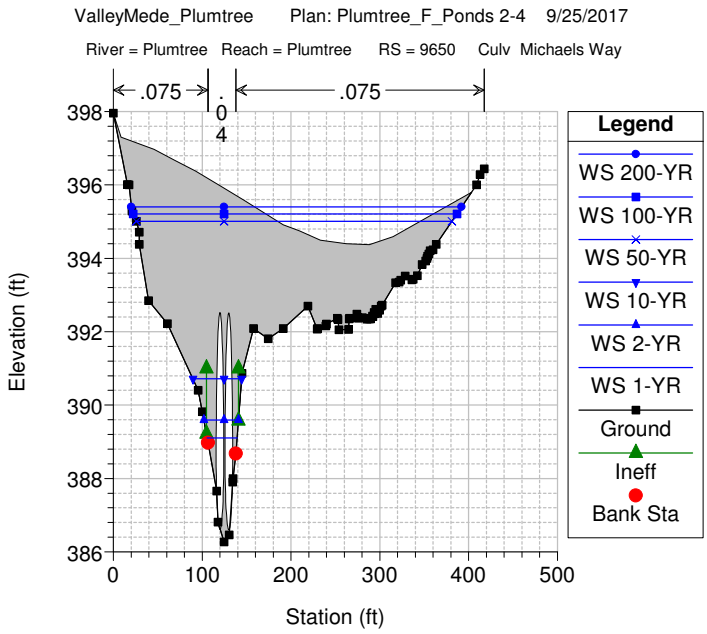
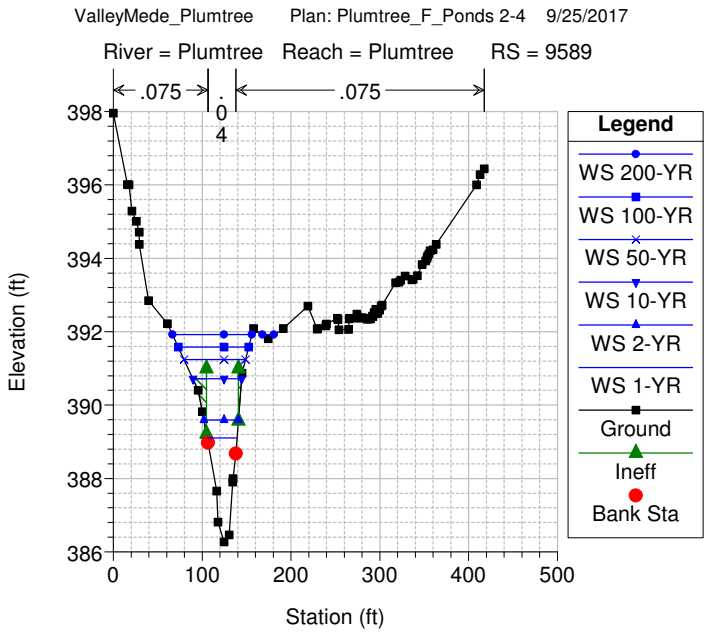
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta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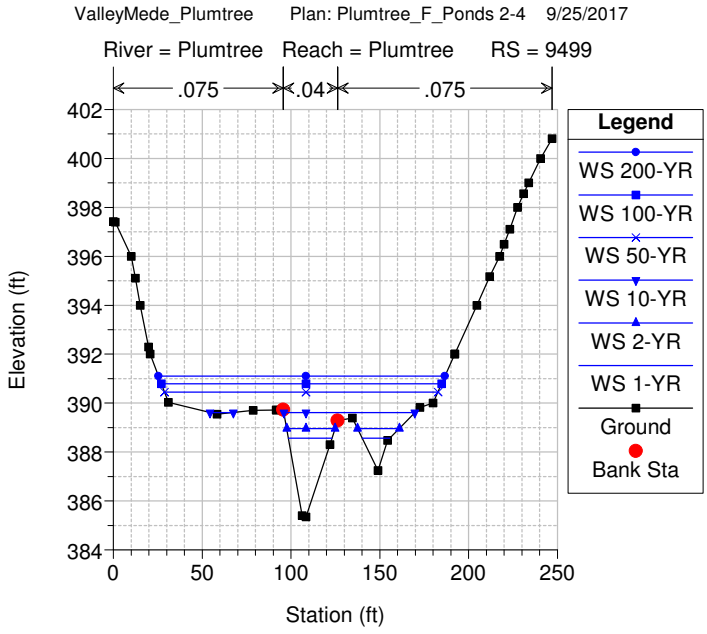
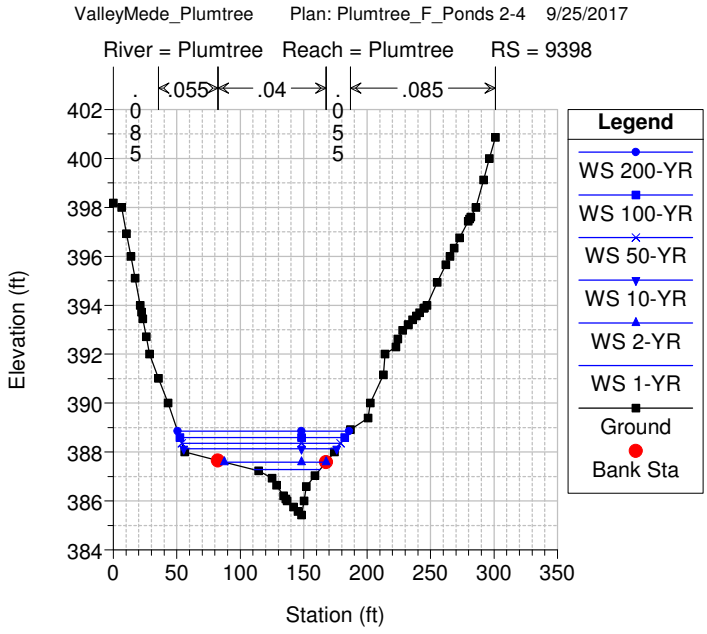
River = Plumtree Reach = Plumtree RS = 9589
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 9499
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta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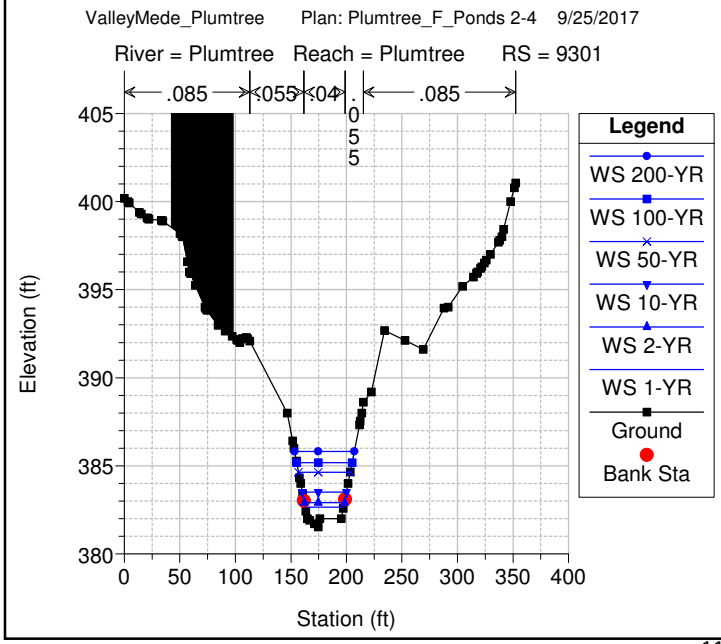
River = Plumtree Reach = Plumtree RS = 9398
.085
.055
.04
.085
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
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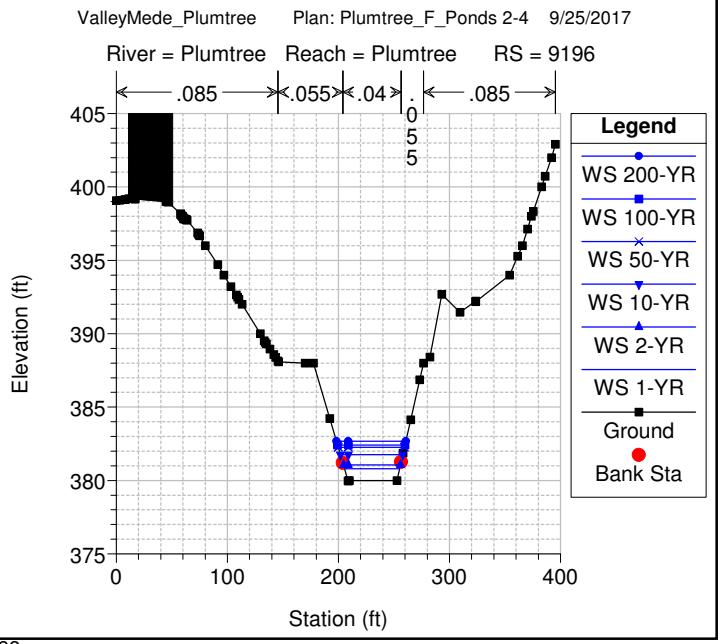
.085
.055
.04
.085
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta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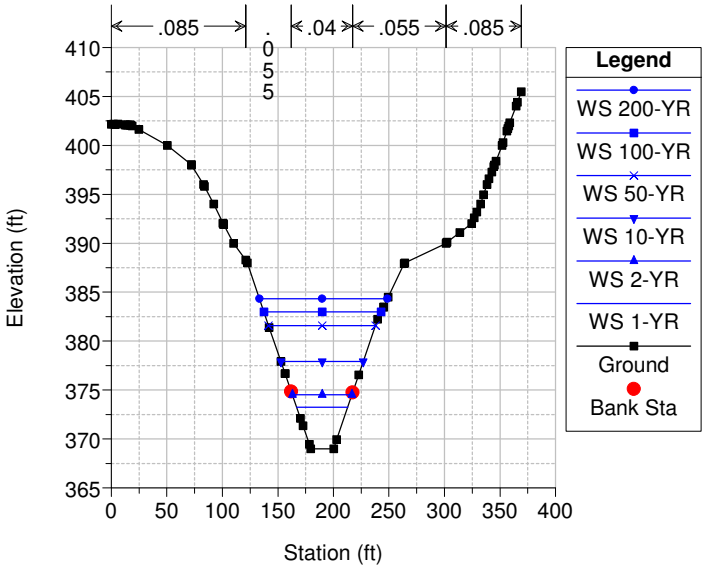
.085
.055
.04
.085
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

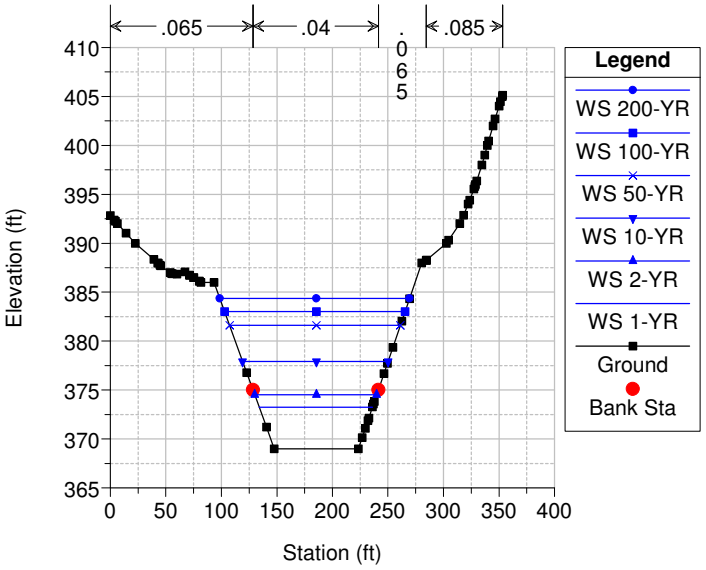
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 8987



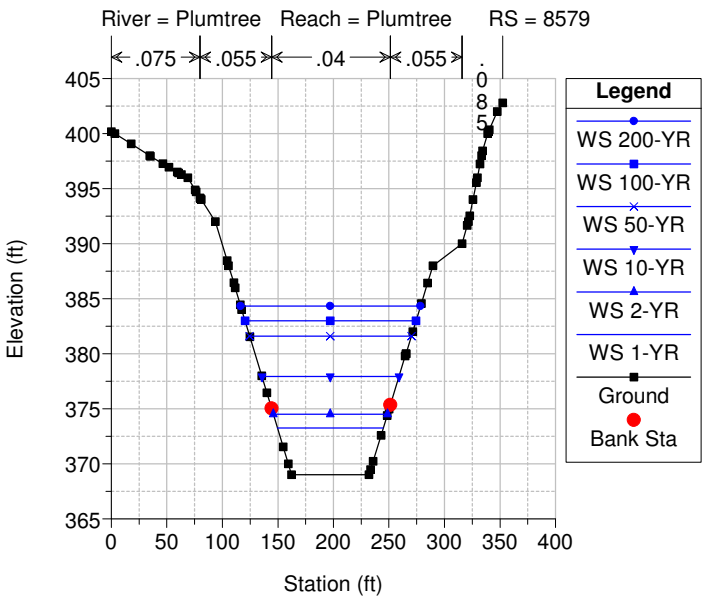
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 8753



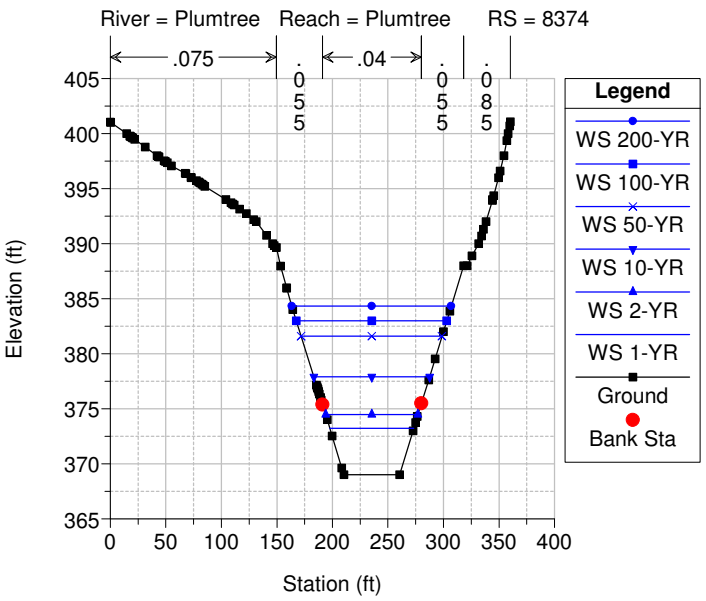
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 8579



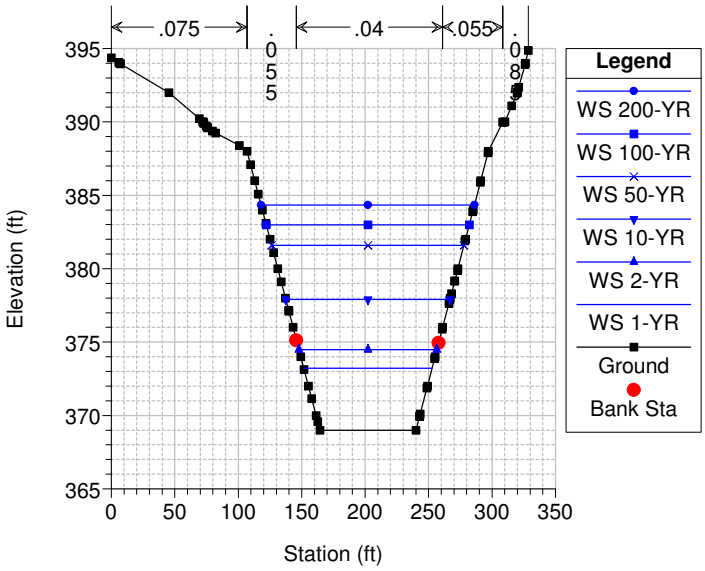
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 8374



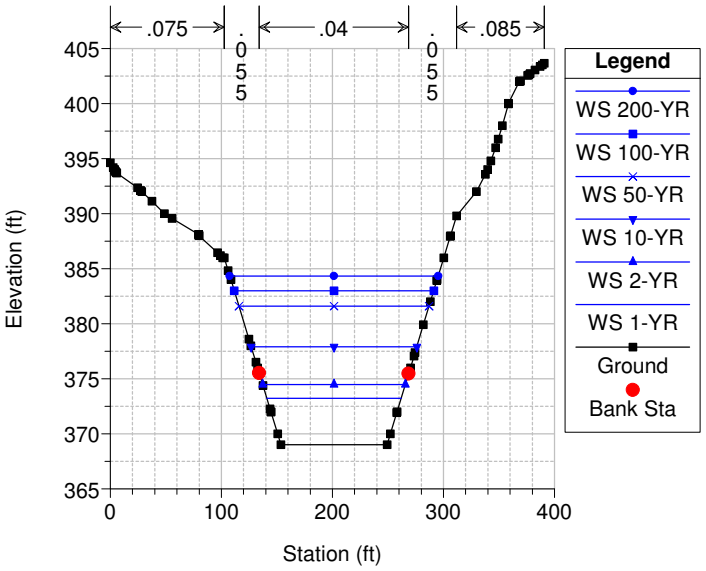
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

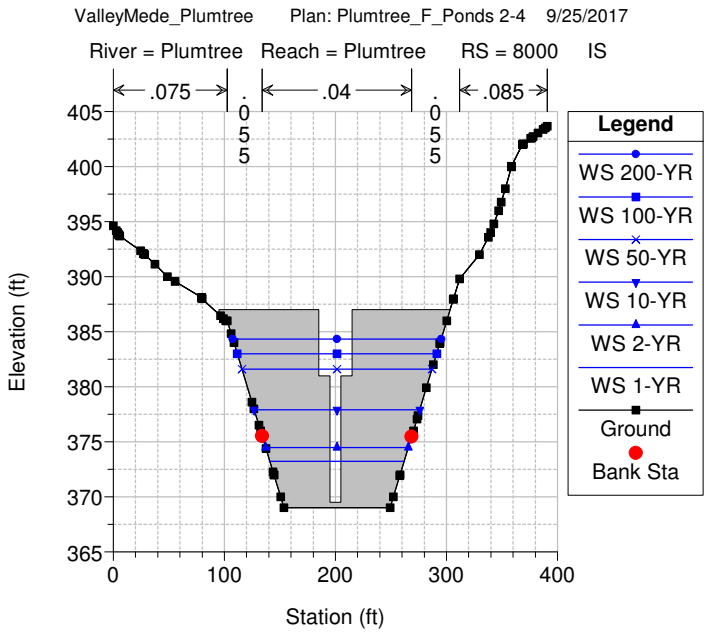
River = Plumtree Reach = Plumtree RS = 8229

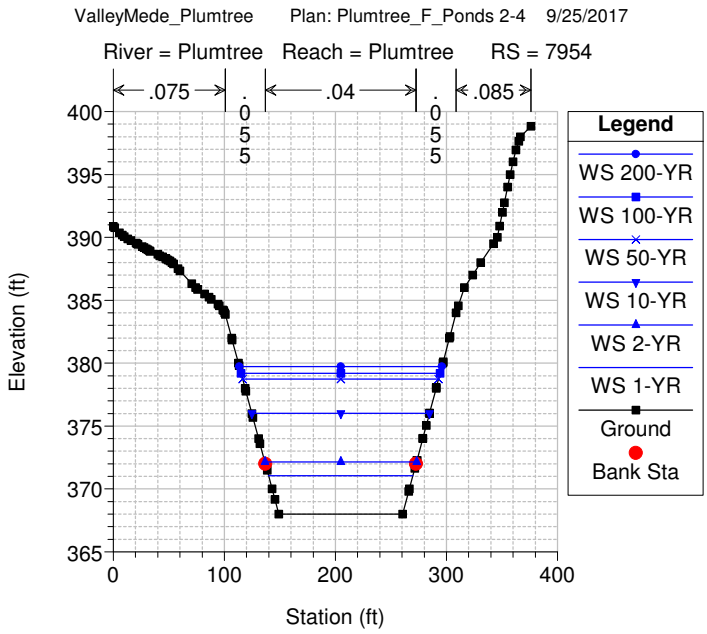


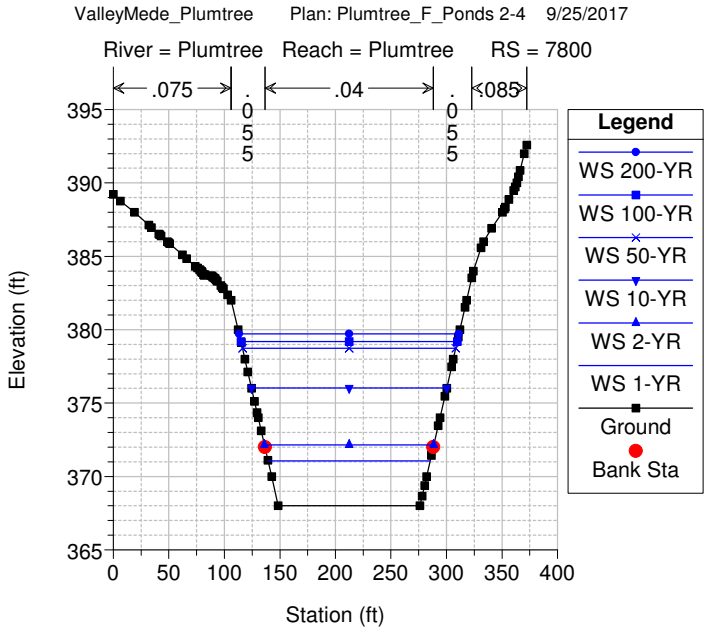
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

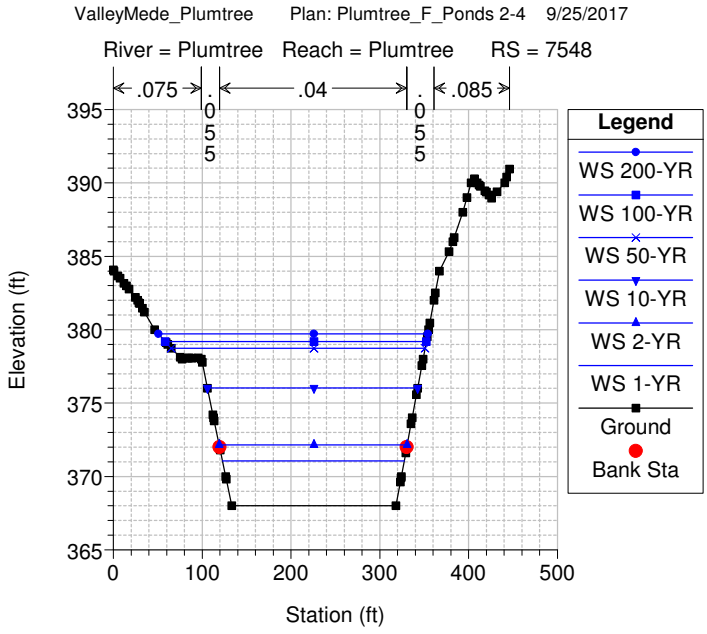
River = Plumtree Reach = Plumtree RS = 8094

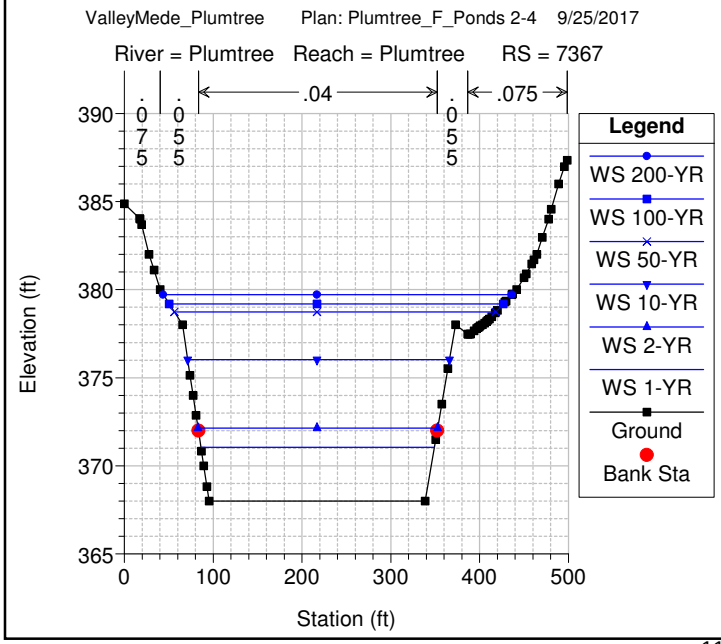


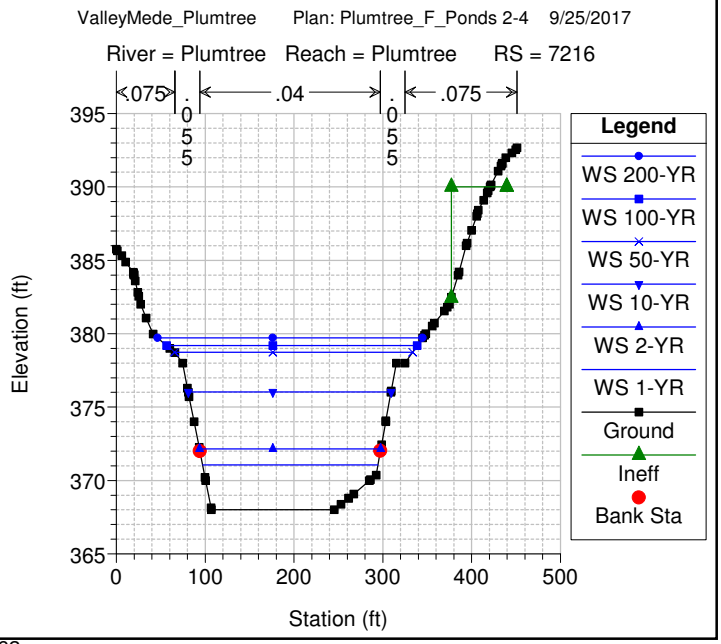

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 8000 IS
.075
.055
.04
.055
.085
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

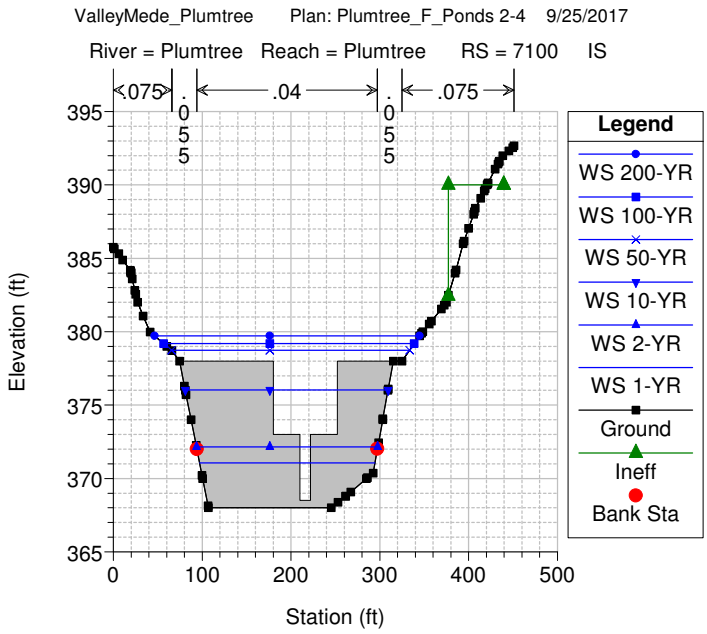

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 7954
.075
.055
.04
.055
.085
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

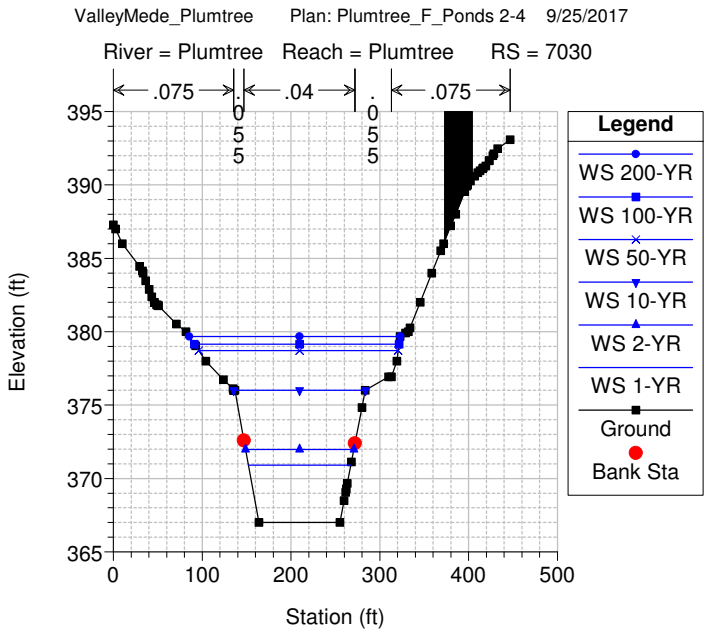

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 7800
.075
.055
.04
.055
.085
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

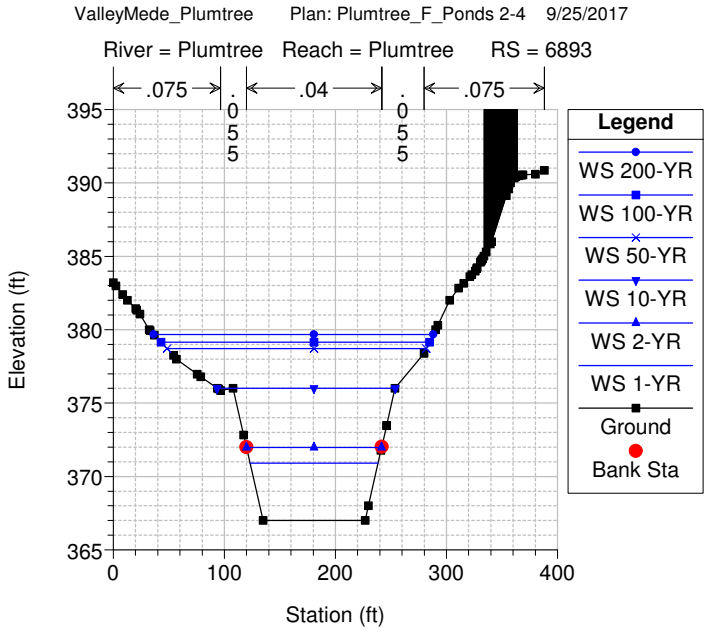

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 7548
.075
.055
.04
.055
.085
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

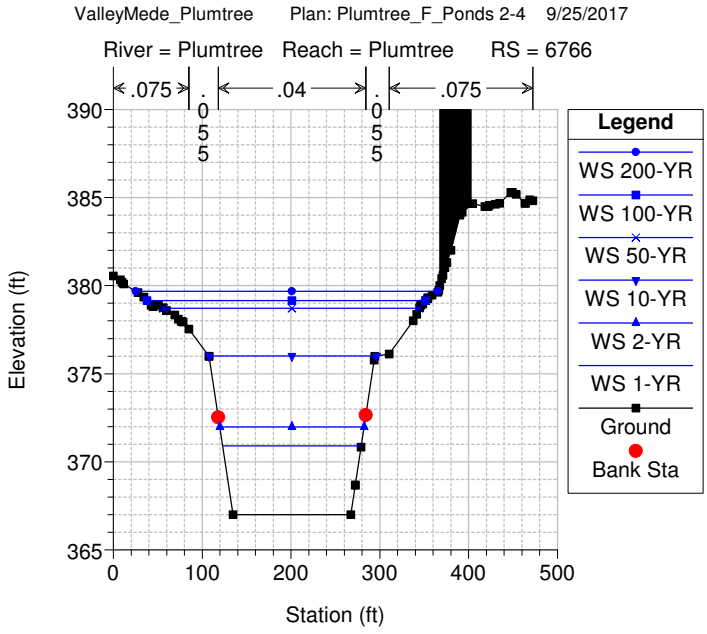

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 7367
.075
.055
.04
.055
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

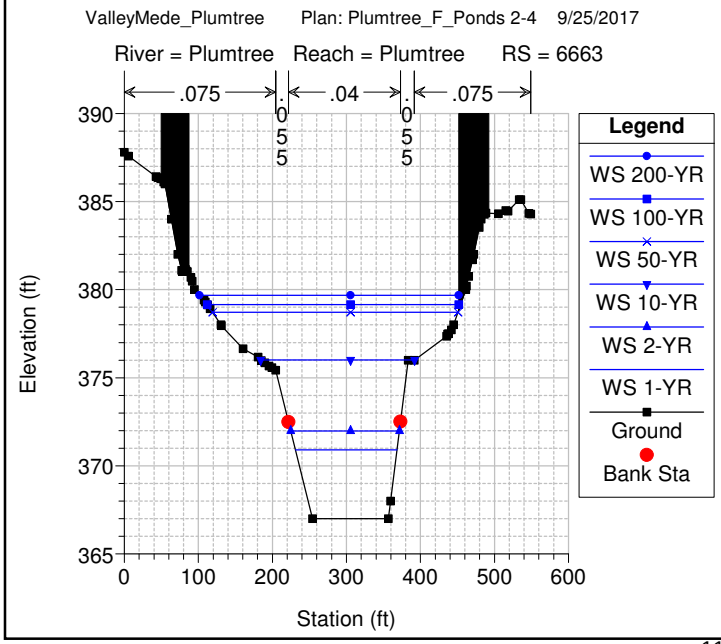

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 7216
.075
.055
.04
.055
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

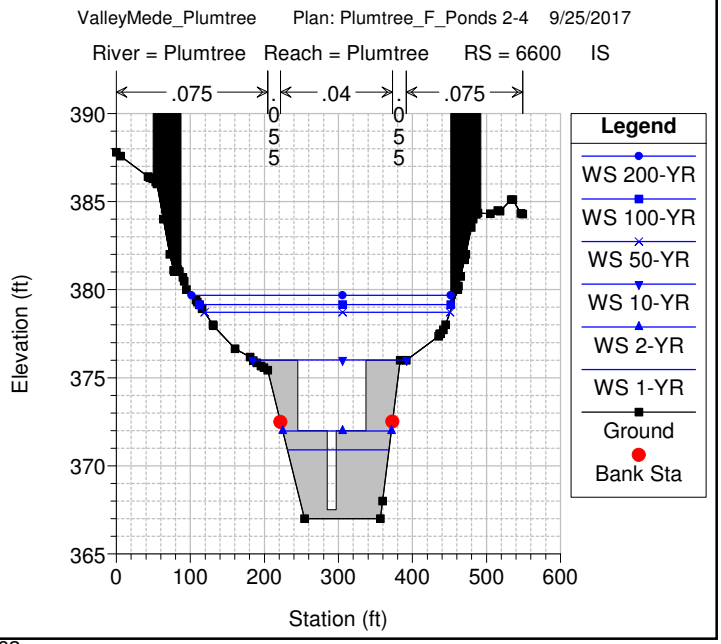

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 7100 IS
.075 .055 .04 .055 .075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

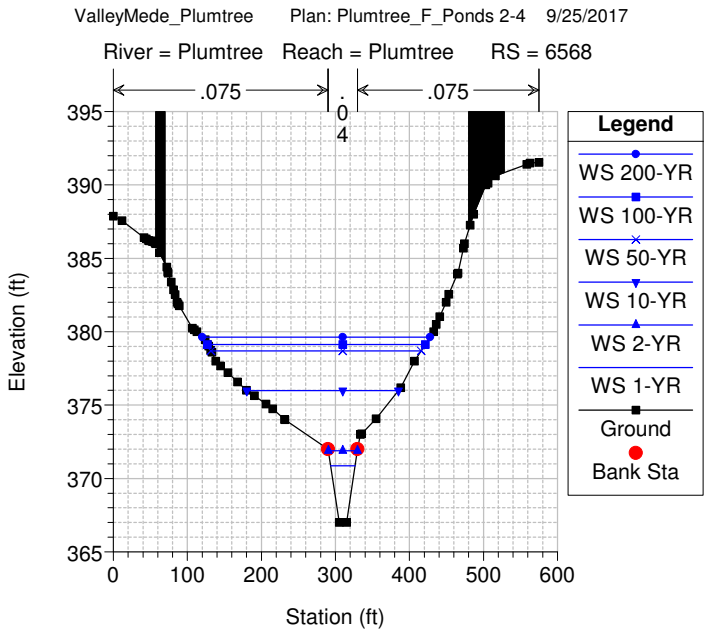

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 7030
.075 .055 .04 .055 .075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

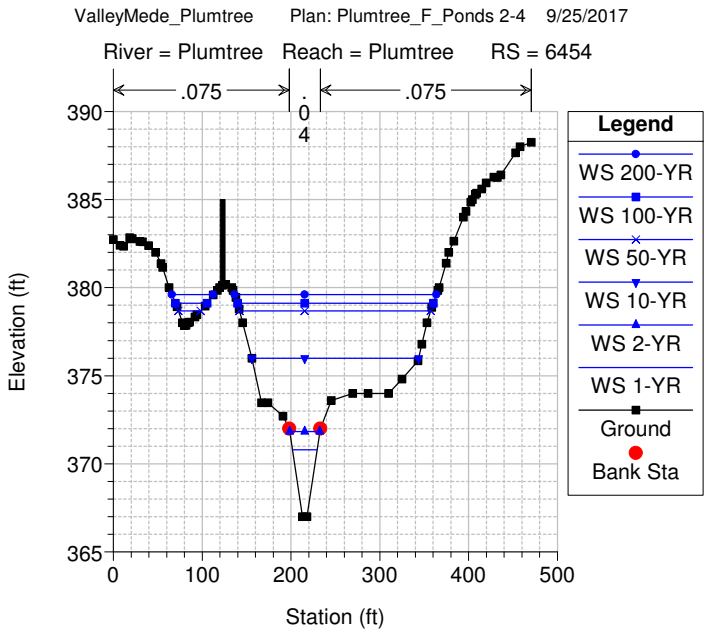

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6893
.075 .055 .04 .055 .075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

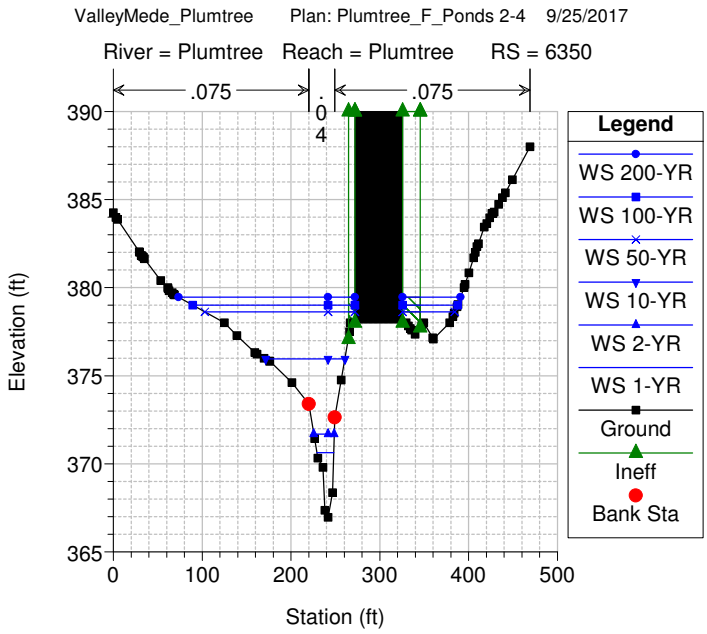

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6766
.075 .055 .04 .055 .075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

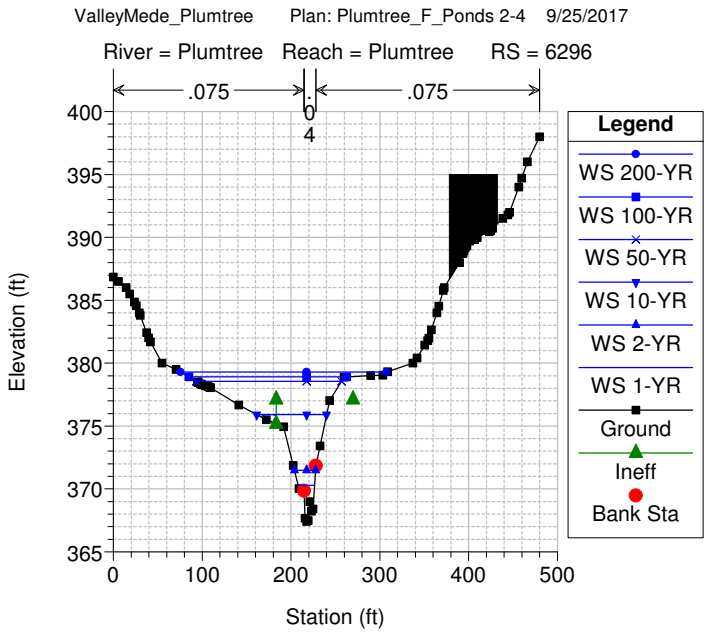

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6663
.075 .055 .04 .055 .075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

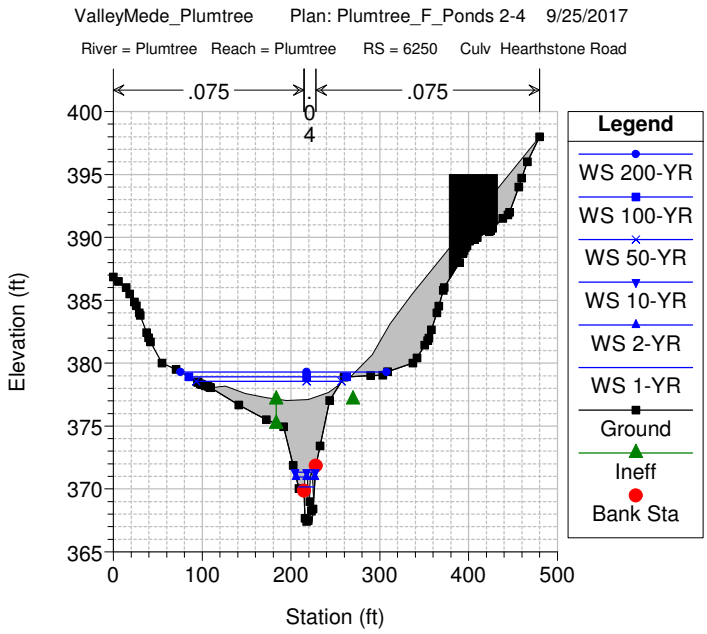

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6600 IS
.075 .055 .04 .055 .075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

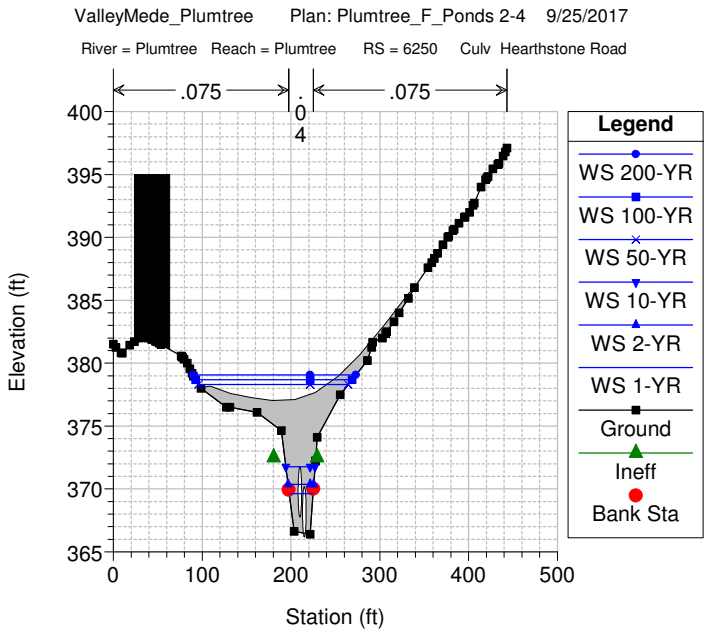

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6568
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

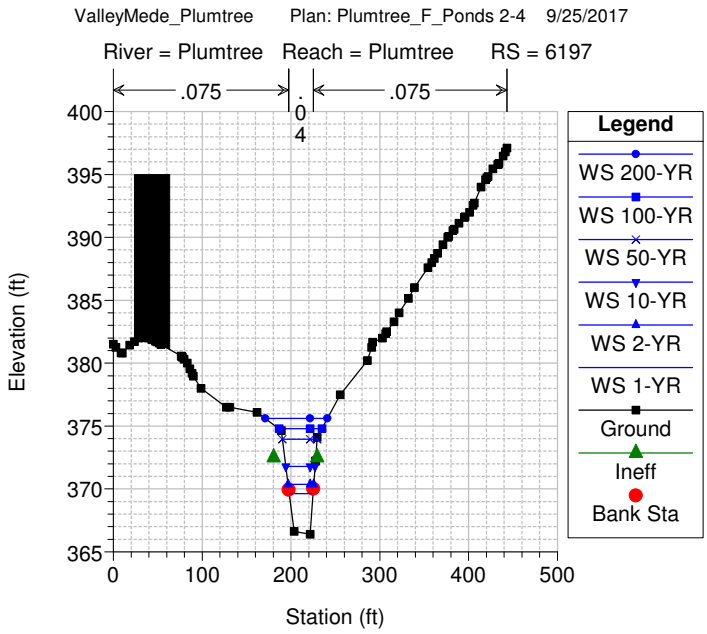

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6454
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

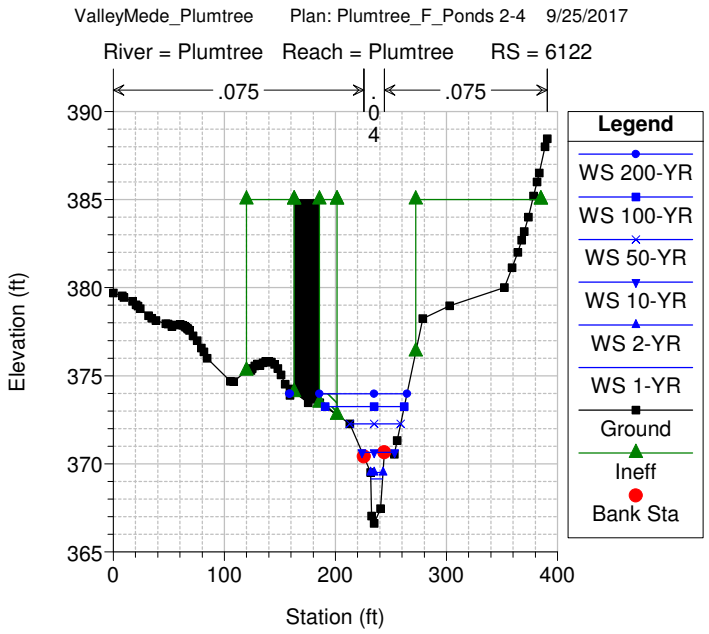

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6350
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

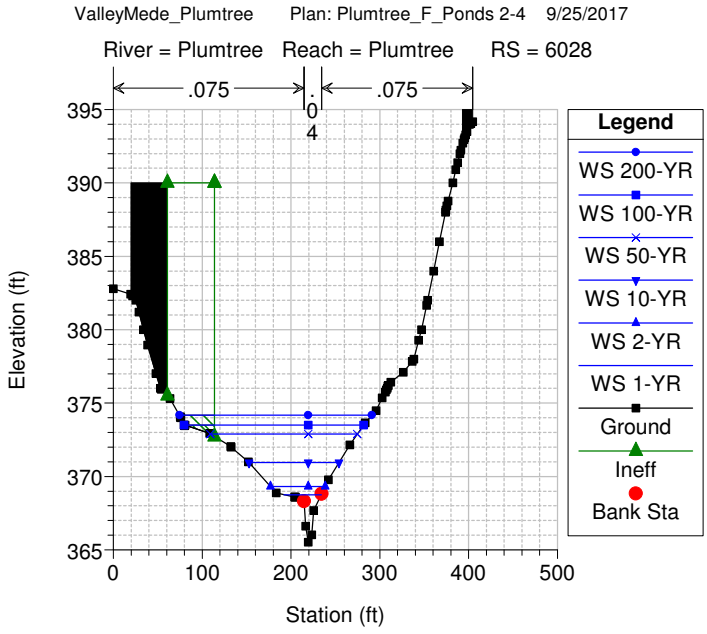

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6296
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

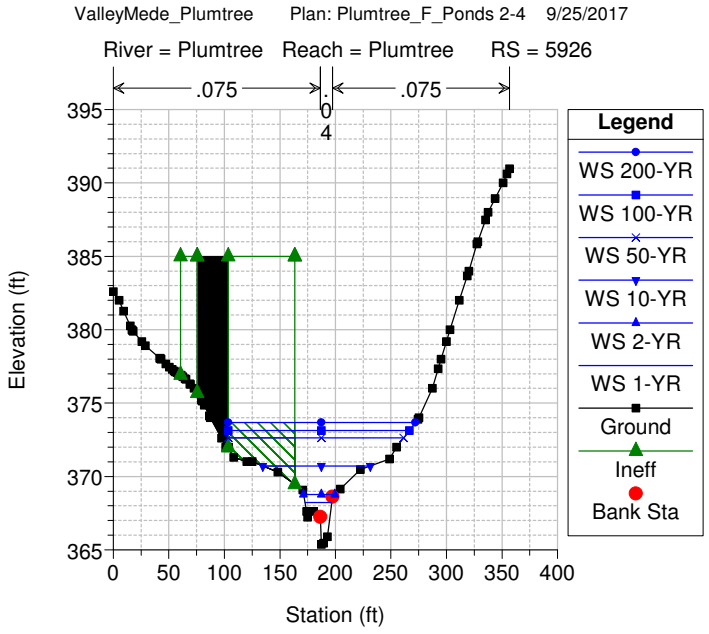

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

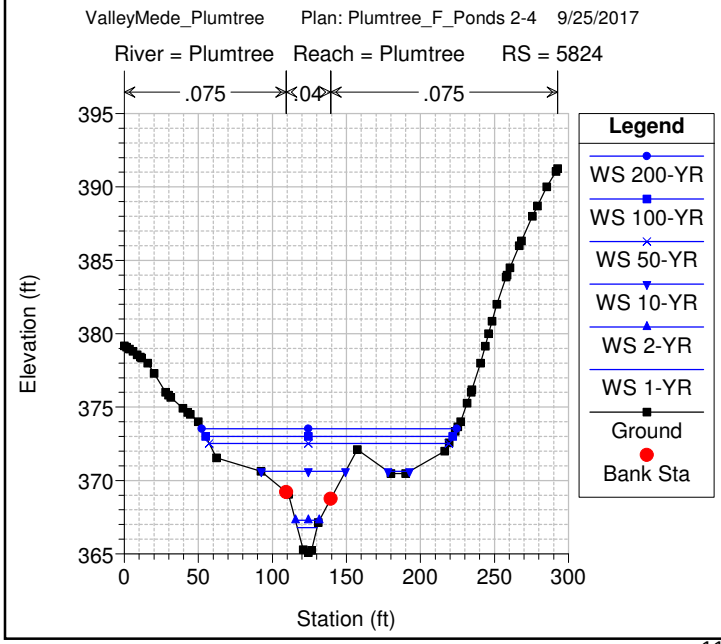

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

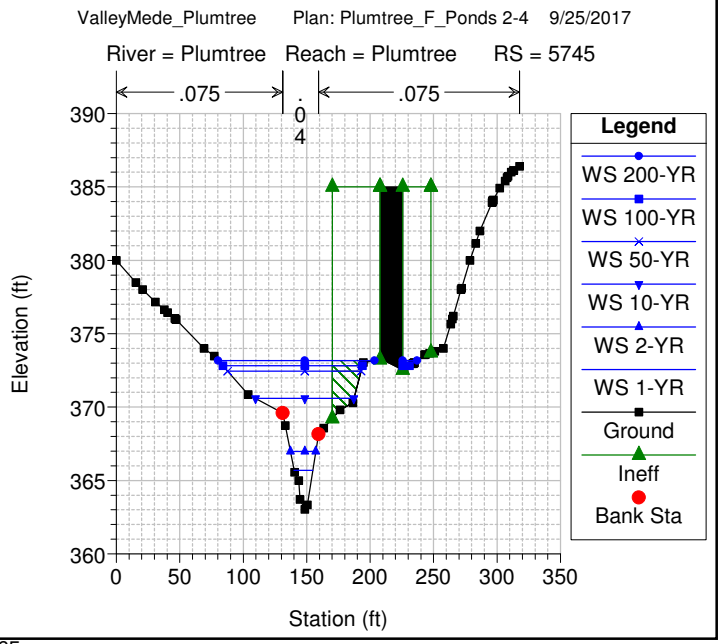

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6197
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

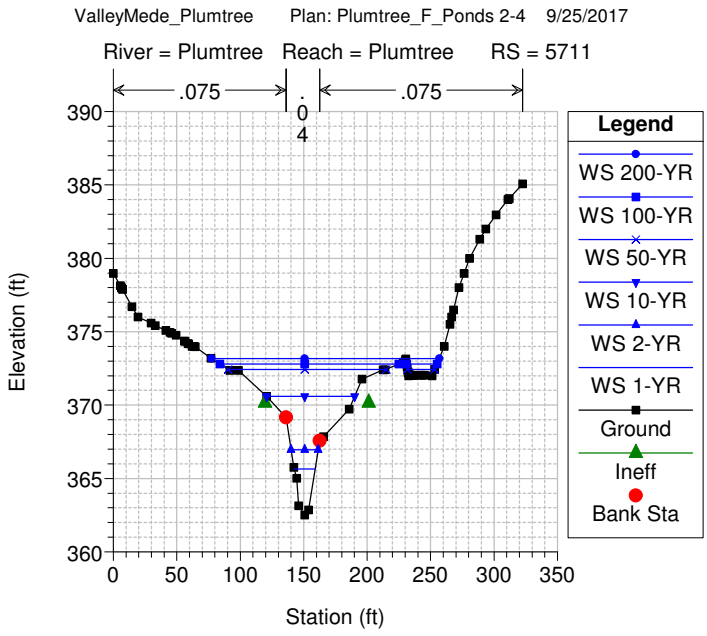

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6122
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

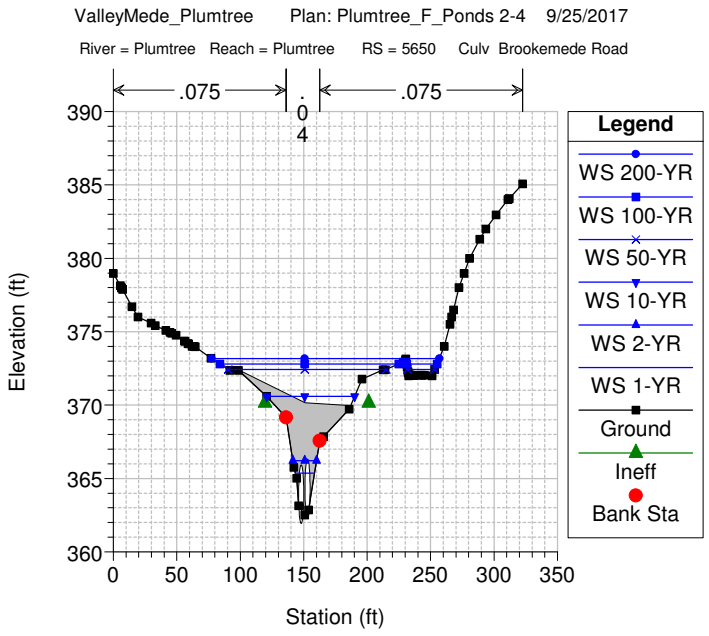

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 6028
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

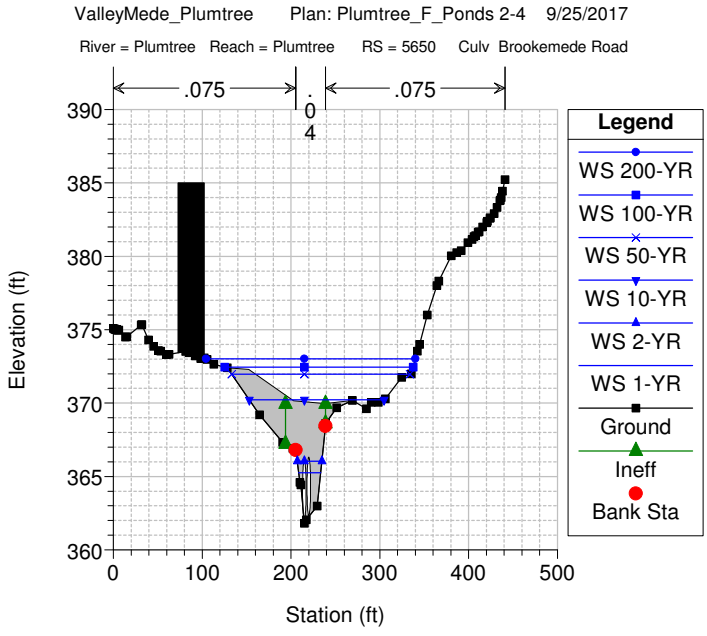

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5926
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

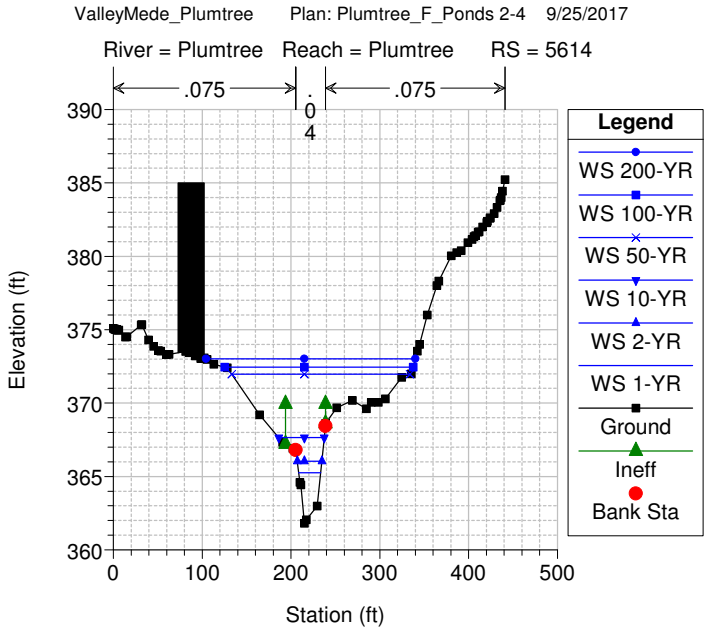

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5824
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

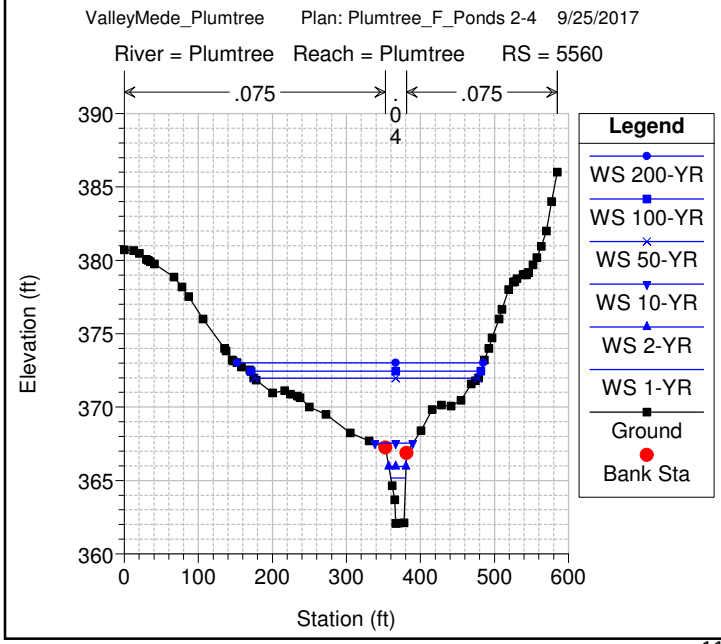

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5745
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

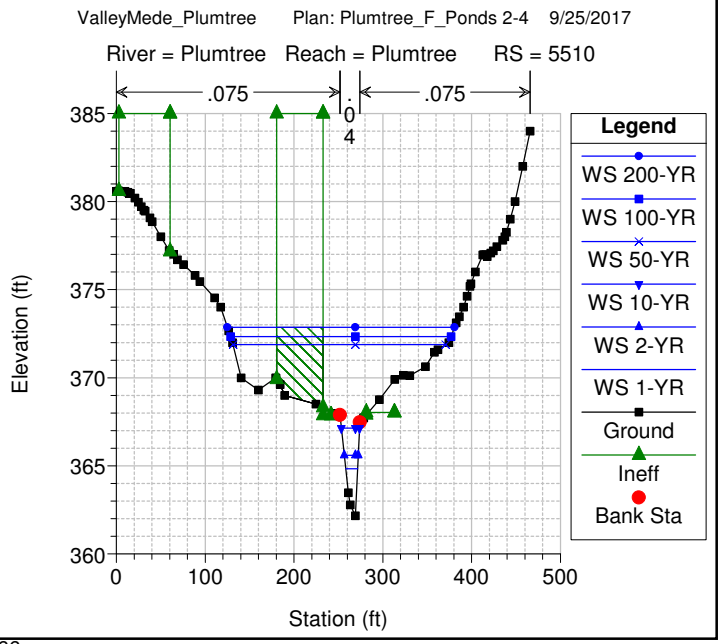

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5711
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

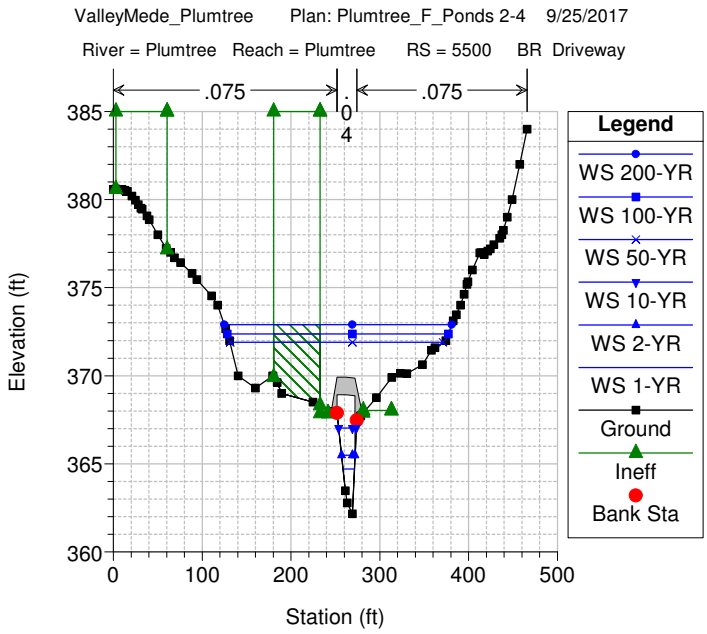

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

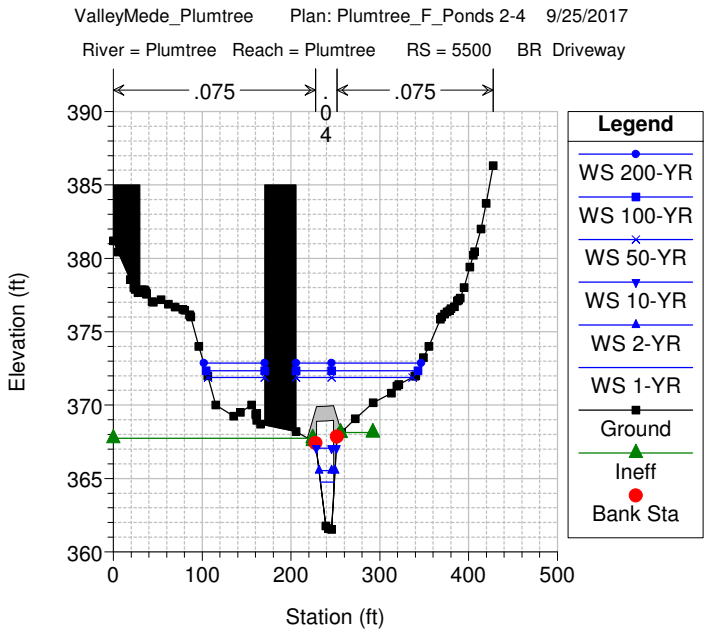

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

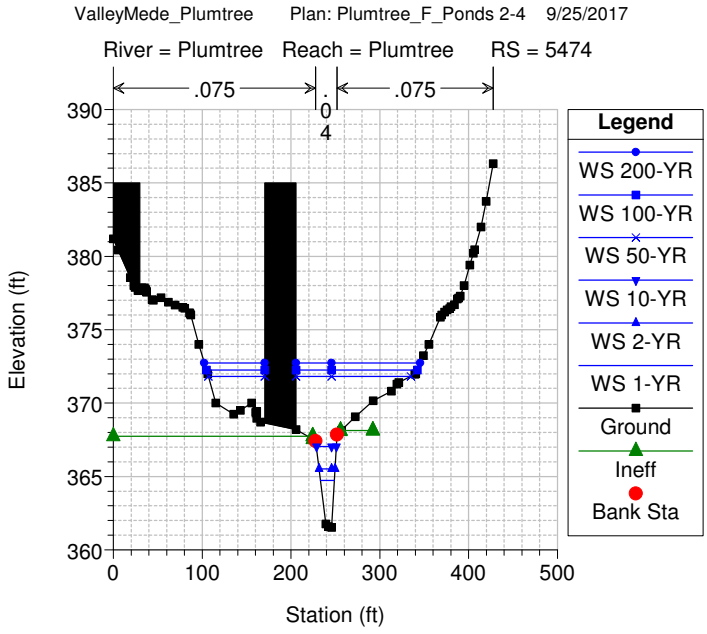

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5614
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

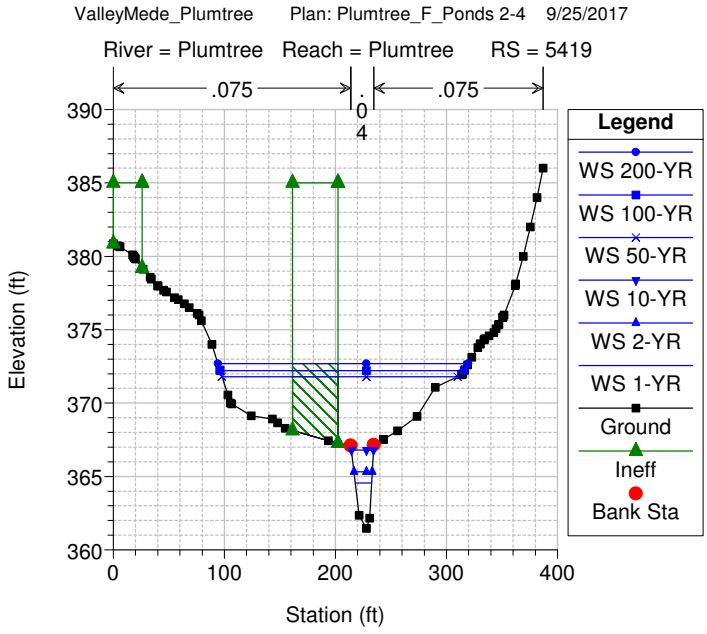

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5560
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

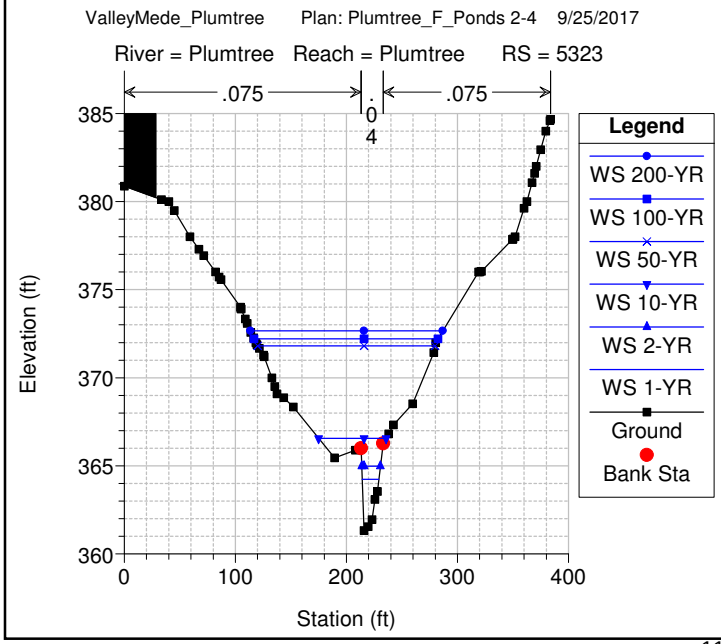

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5510
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

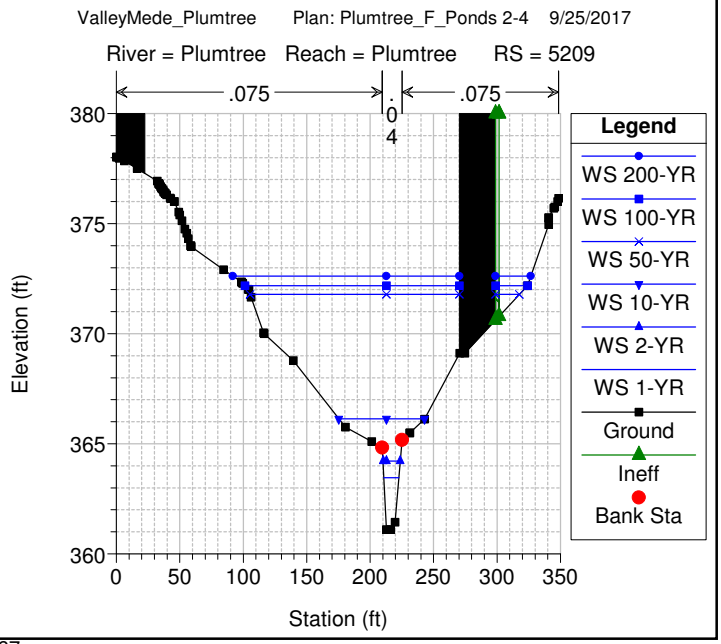

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

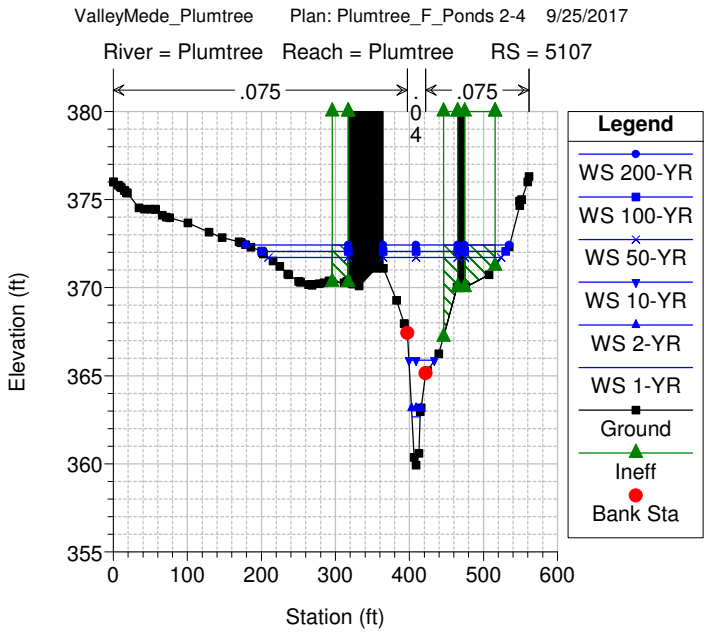

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

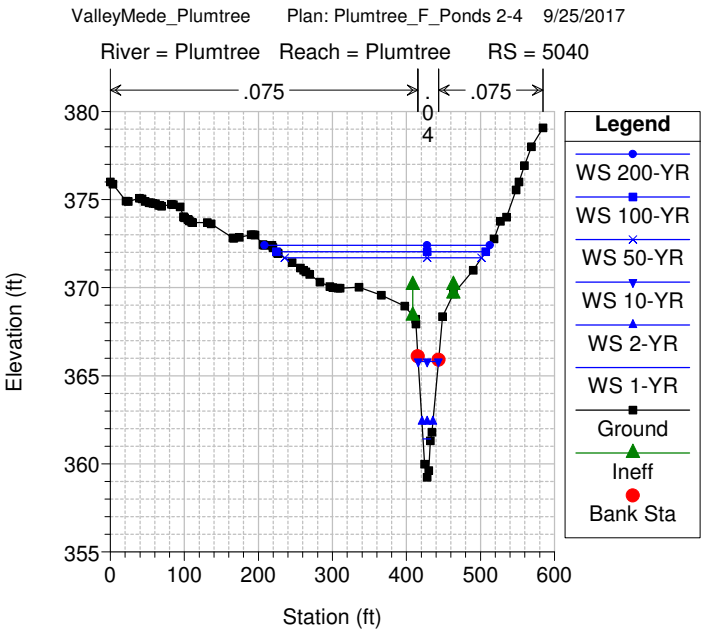

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5474
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

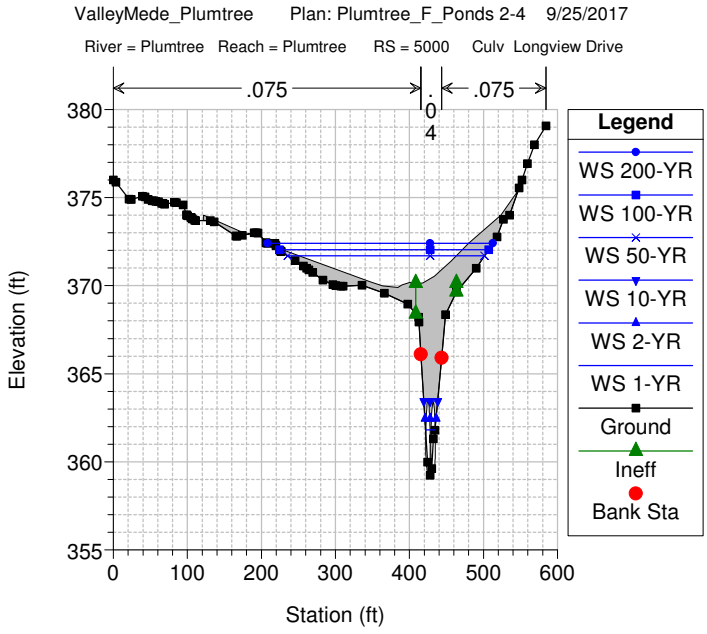

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5419
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

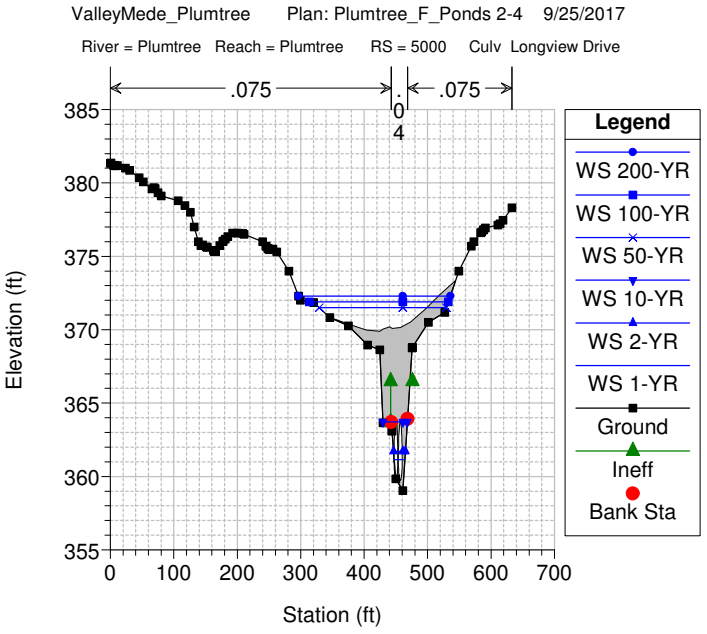

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5323
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

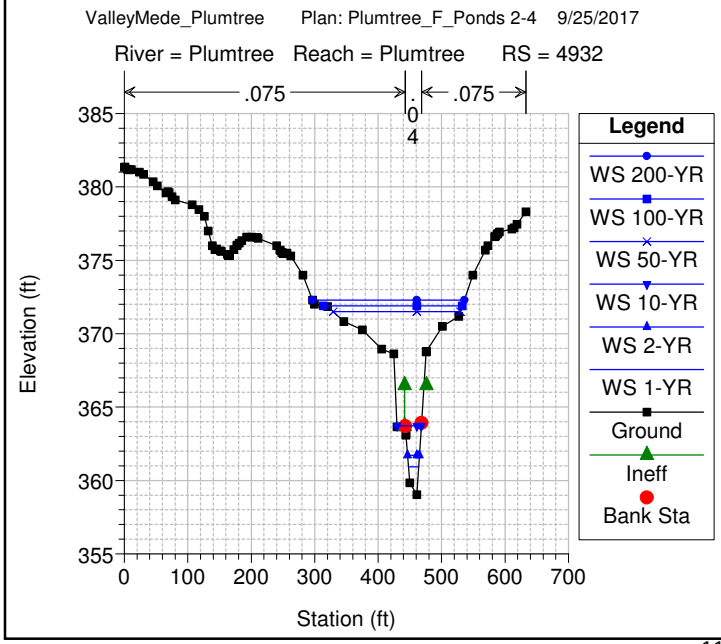

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5209
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

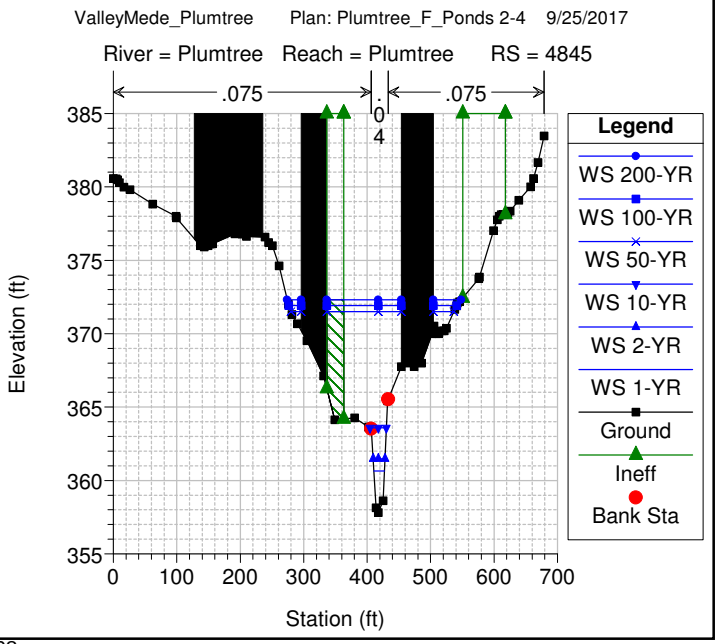

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5107
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

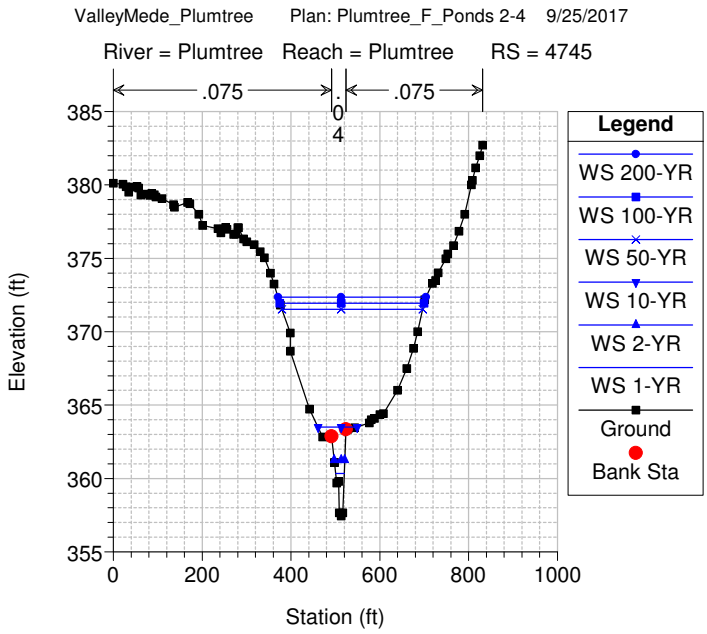

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5040
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

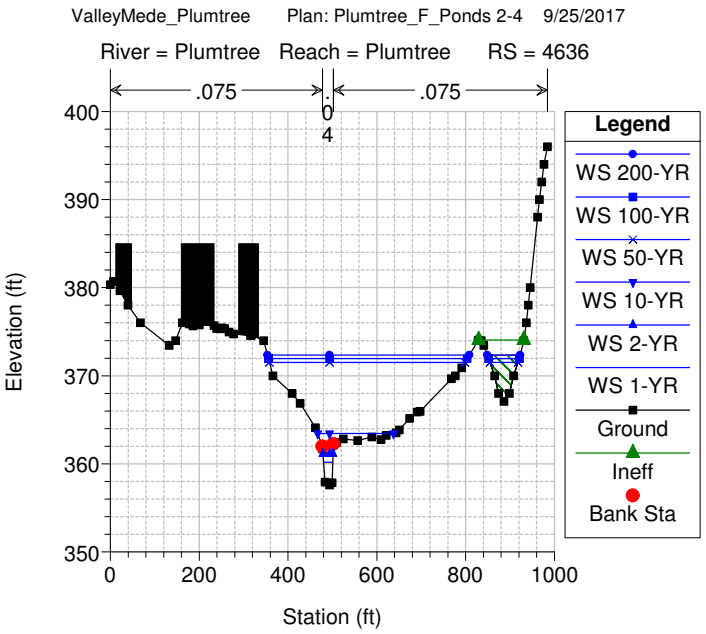

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

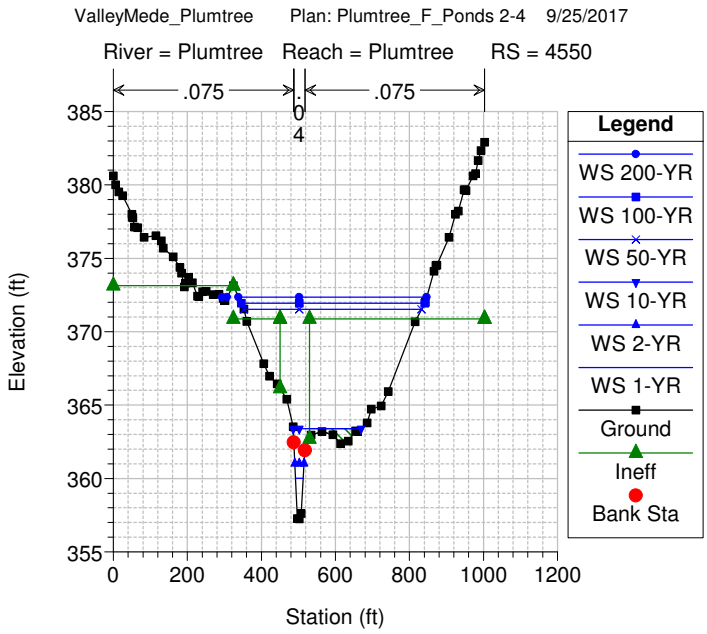

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

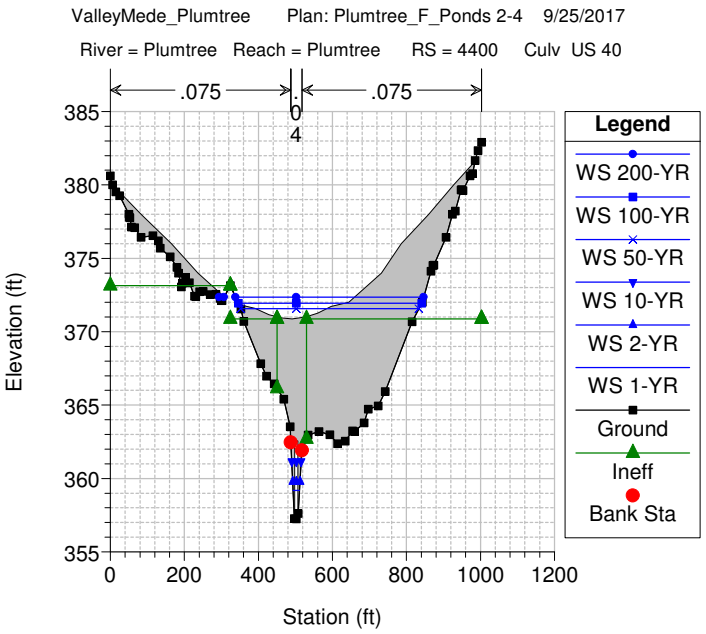

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4932
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

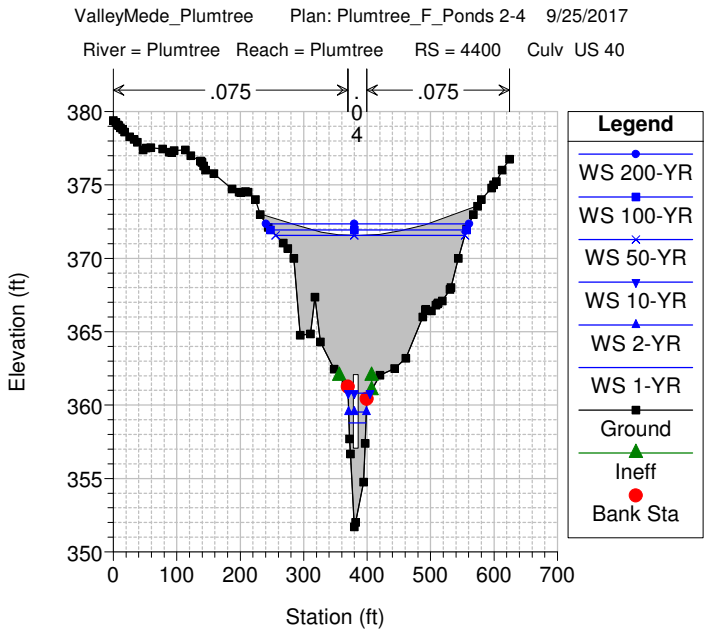

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4845
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

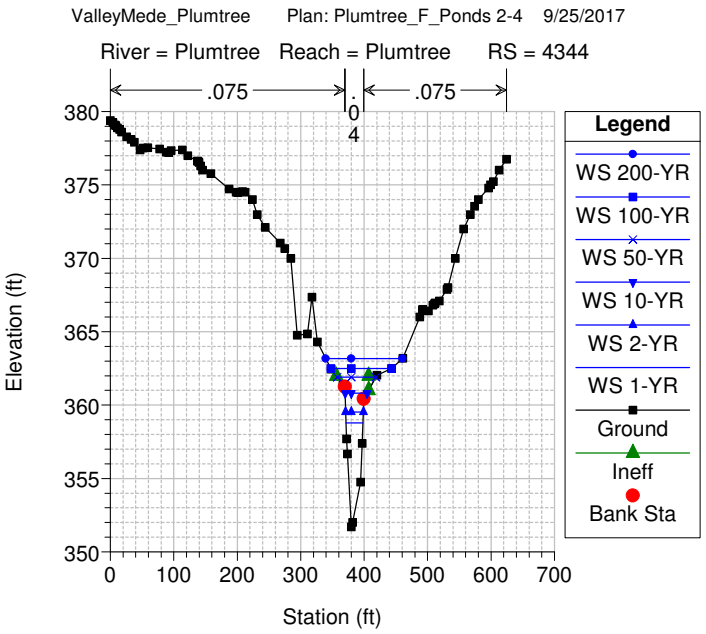

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4745
.075
.075
0
4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

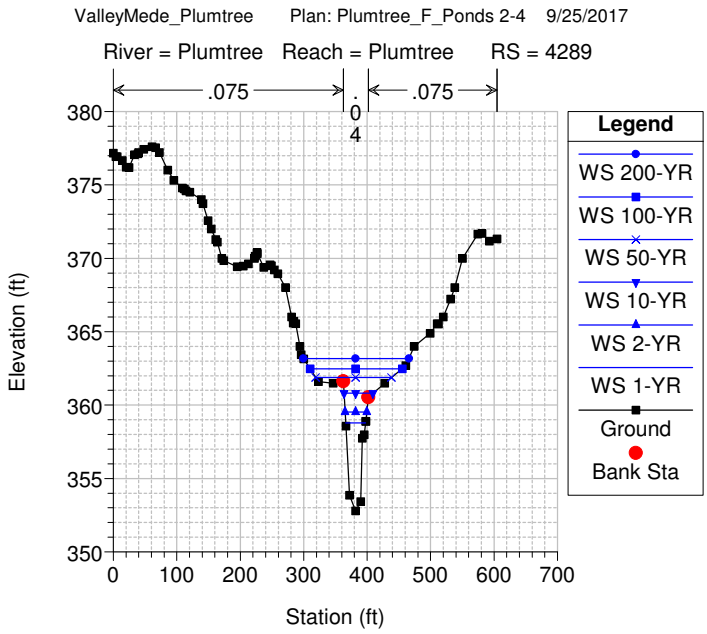

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4636
.075
.075
0
4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

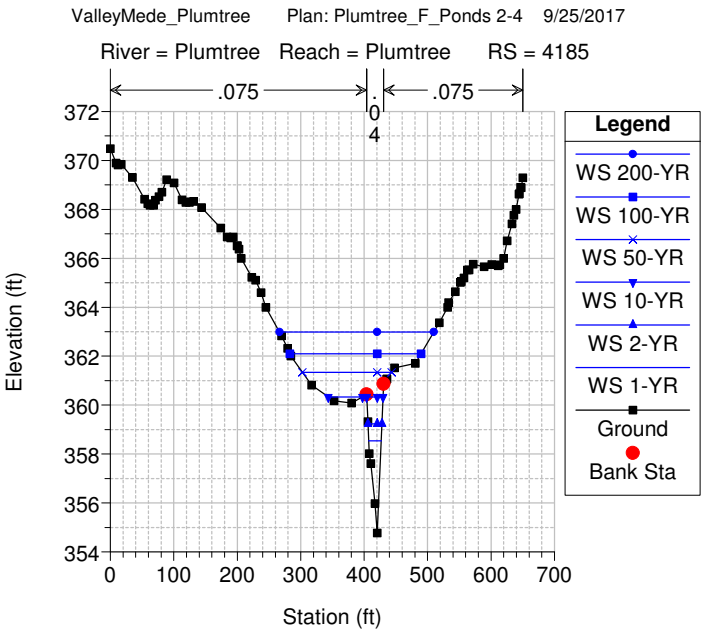

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4550
.075
.075
0
4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

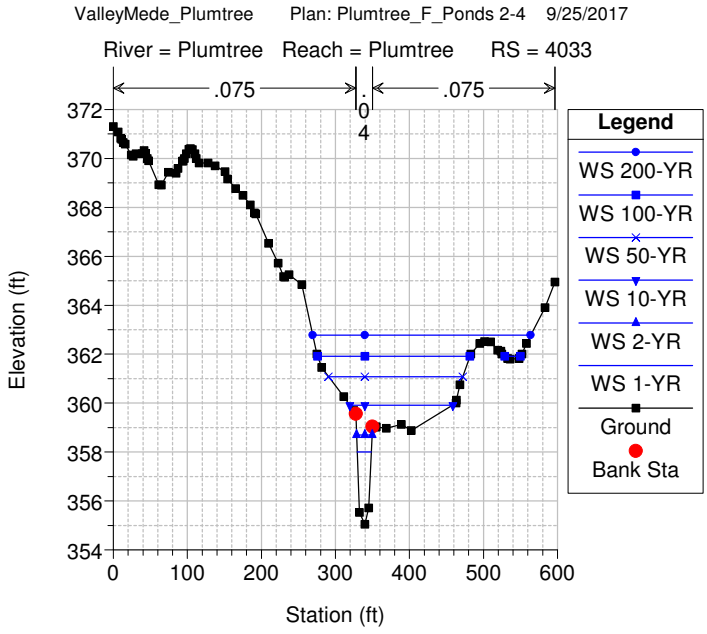

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0
4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

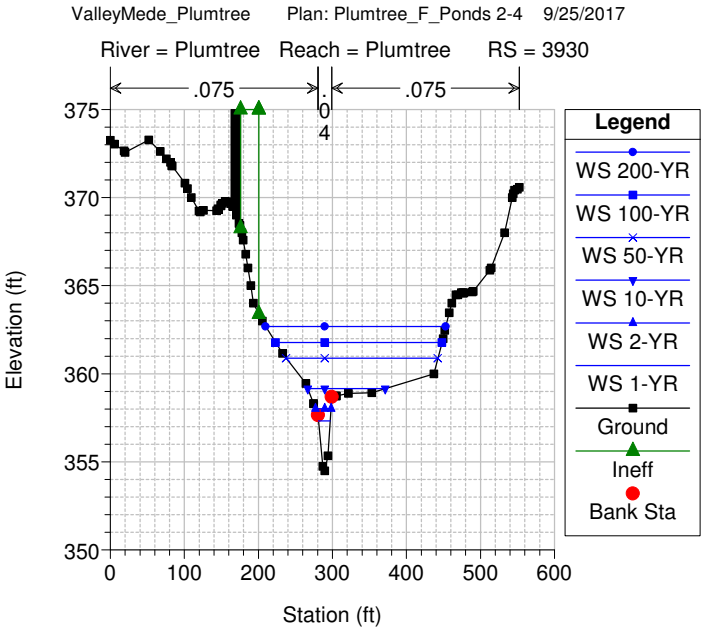

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0
4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

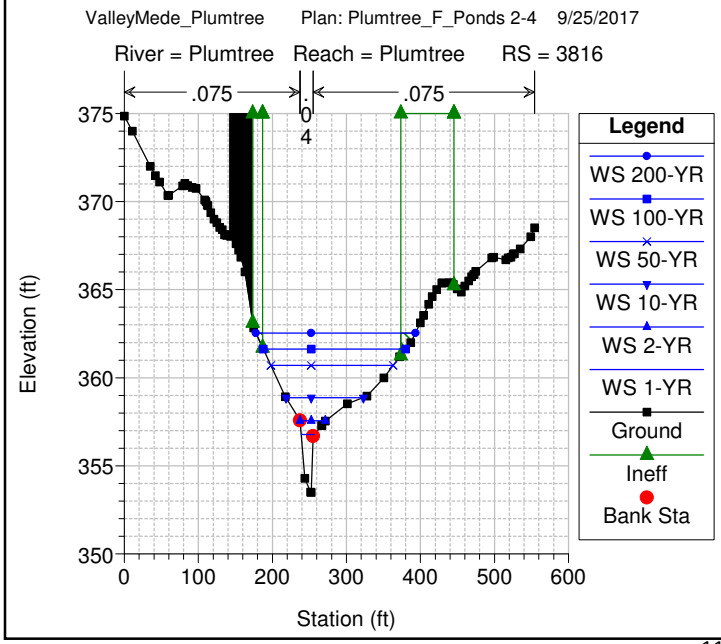

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4344
.075
.075
0
4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

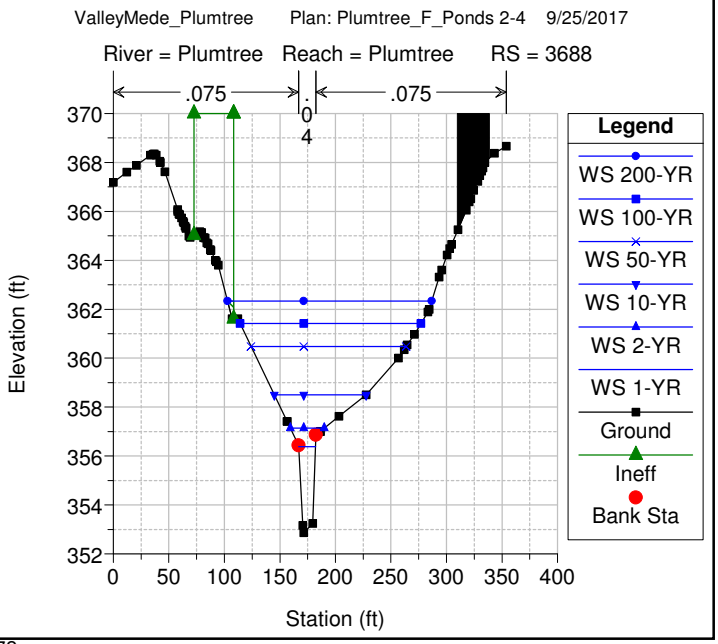

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4289
.075
.075
0.4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

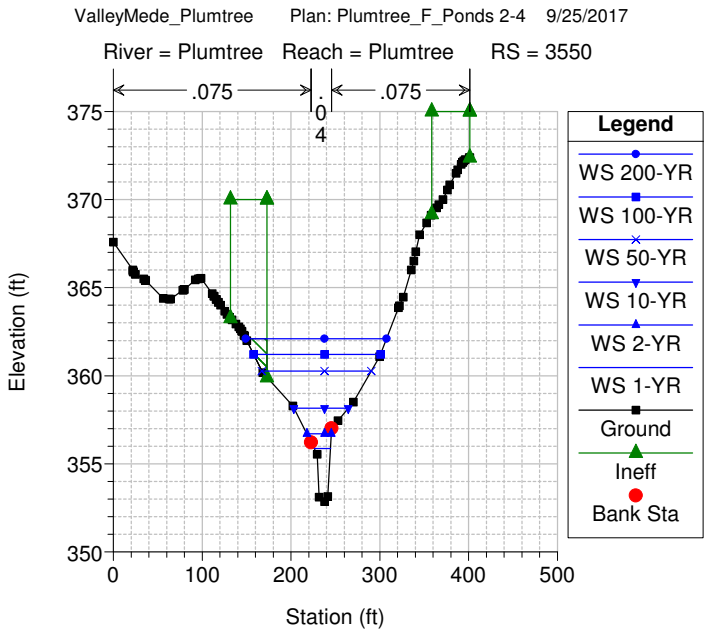

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4185
.075
.075
0.4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

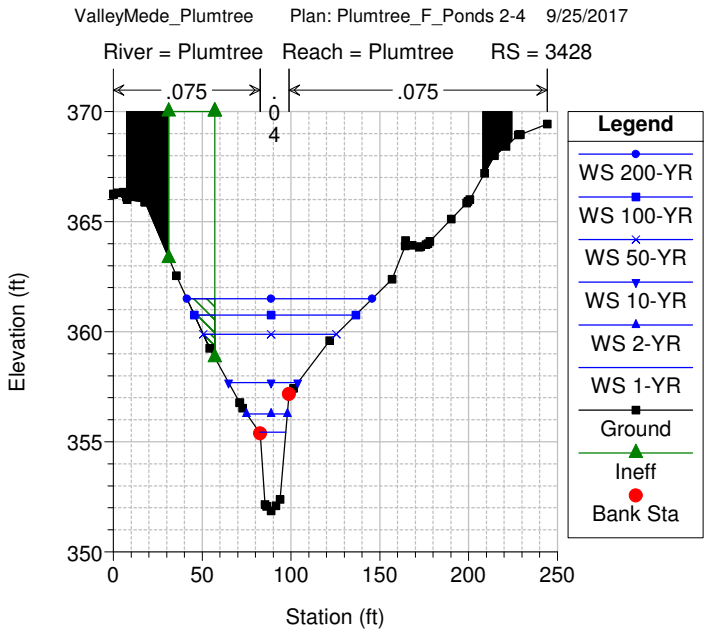

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 4033
.075
.075
0.4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

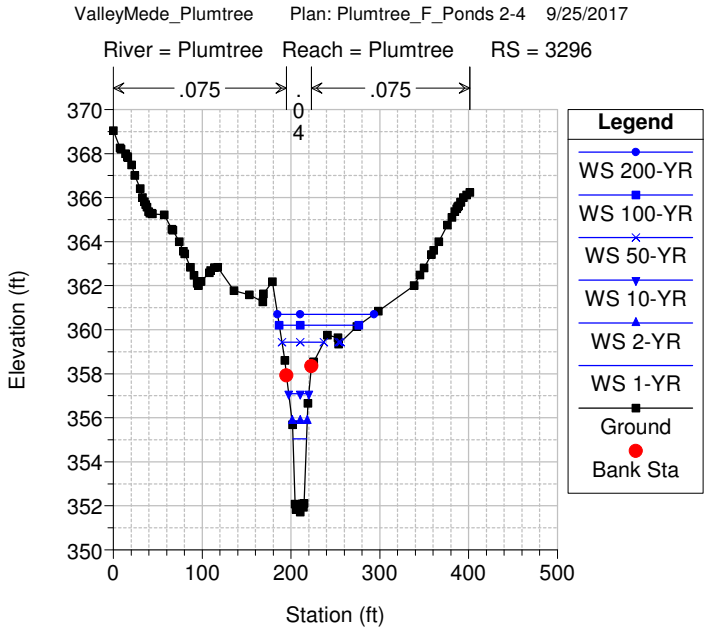

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 3930
.075
.075
0.4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

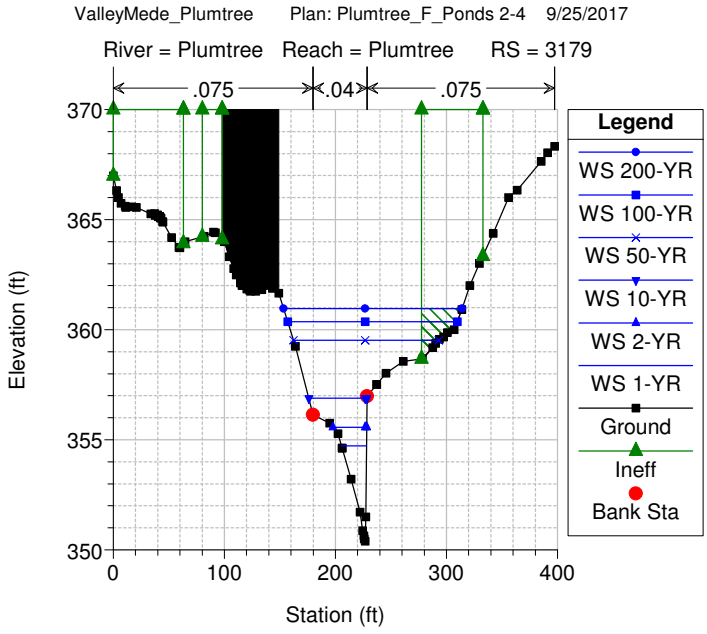

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 3816
.075
.075
0.4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

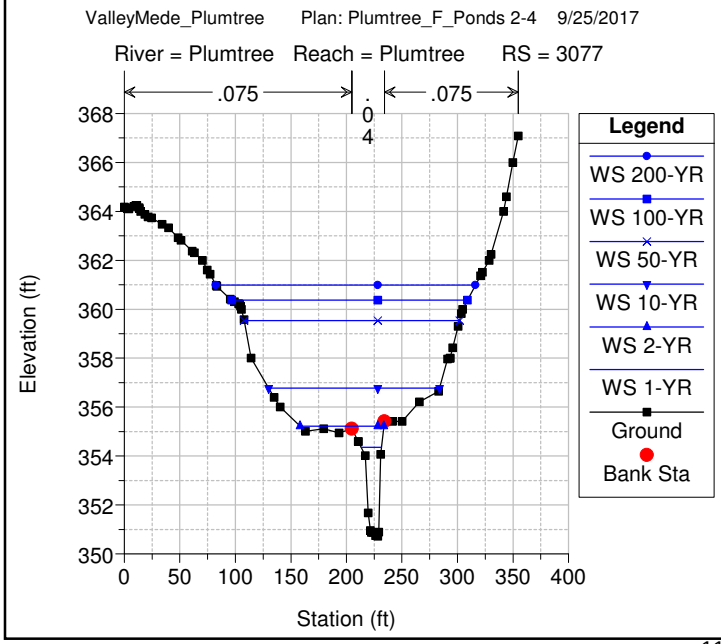

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 3688
.075
.075
0.4
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

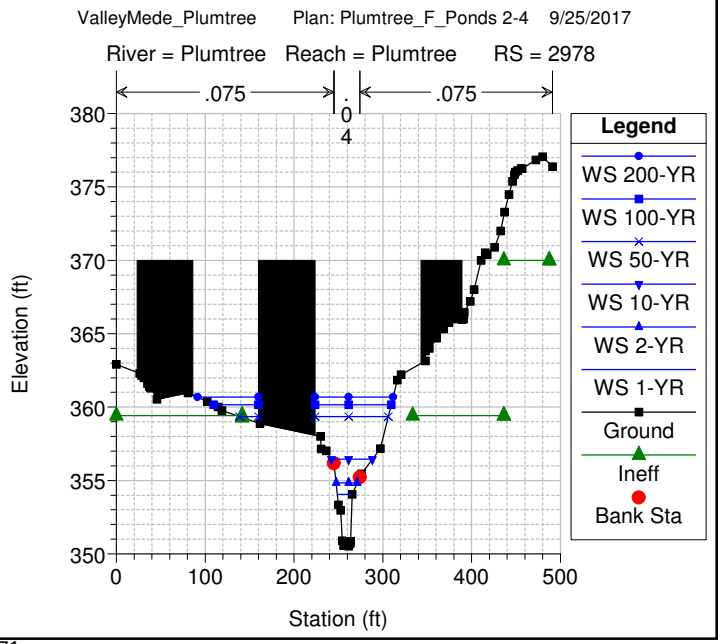

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 3550
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 3428
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 3296
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

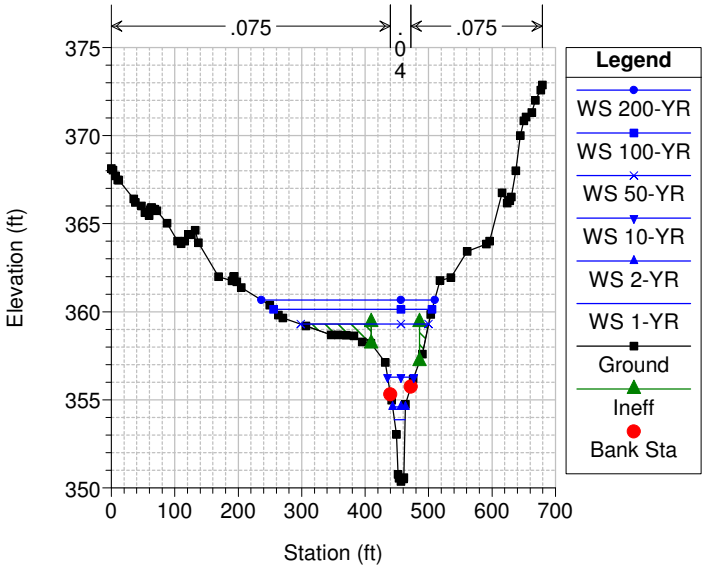

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 3179
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 3077
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 2978
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

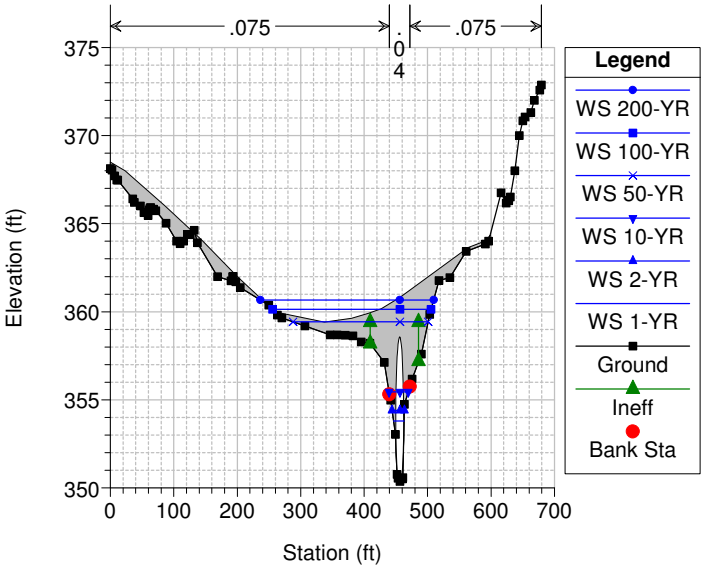
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 2917



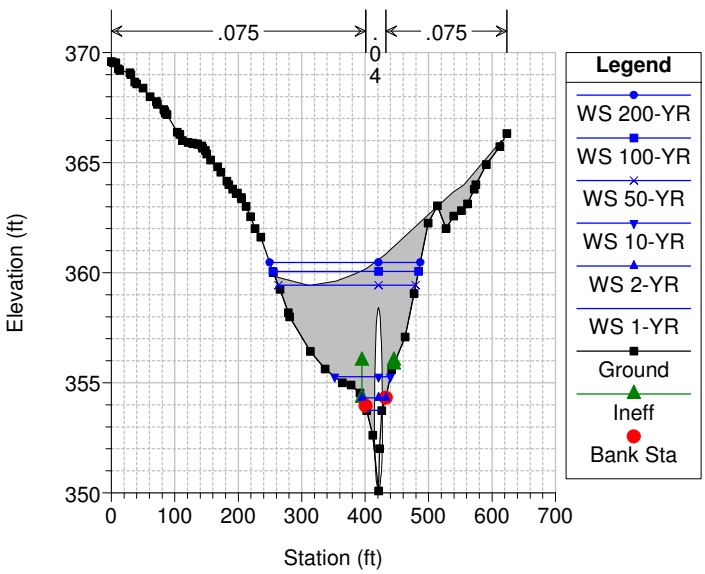
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road



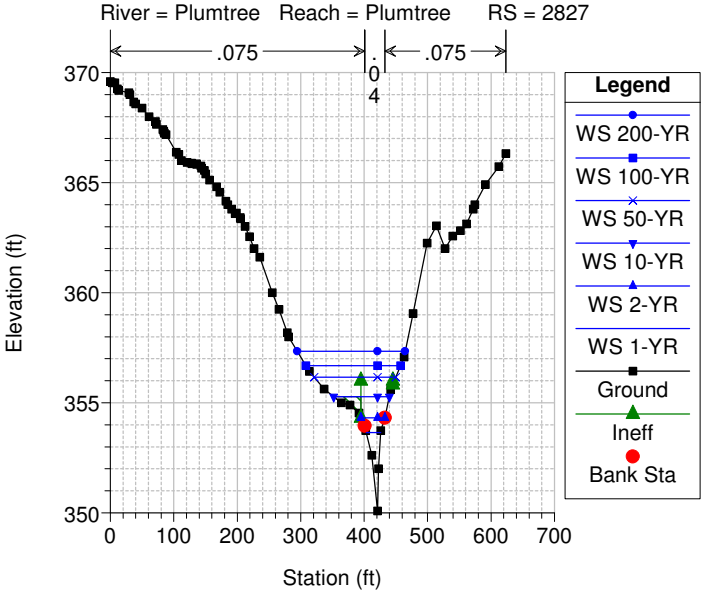
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road



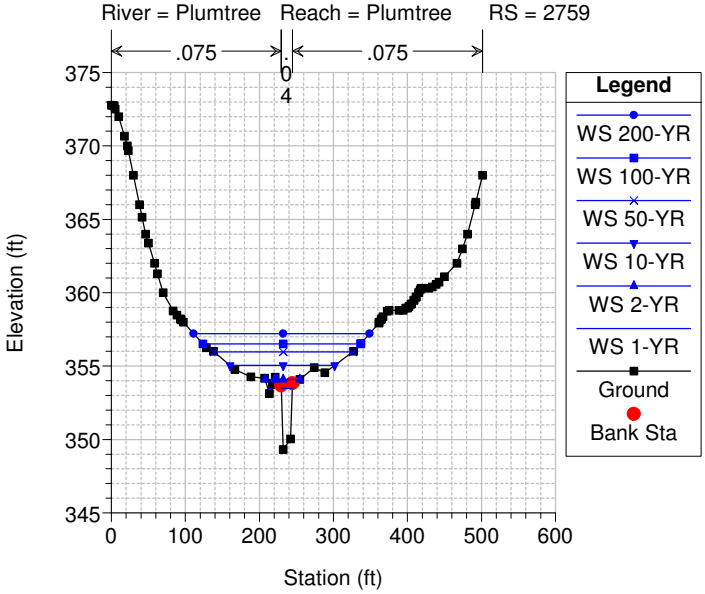
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 2827



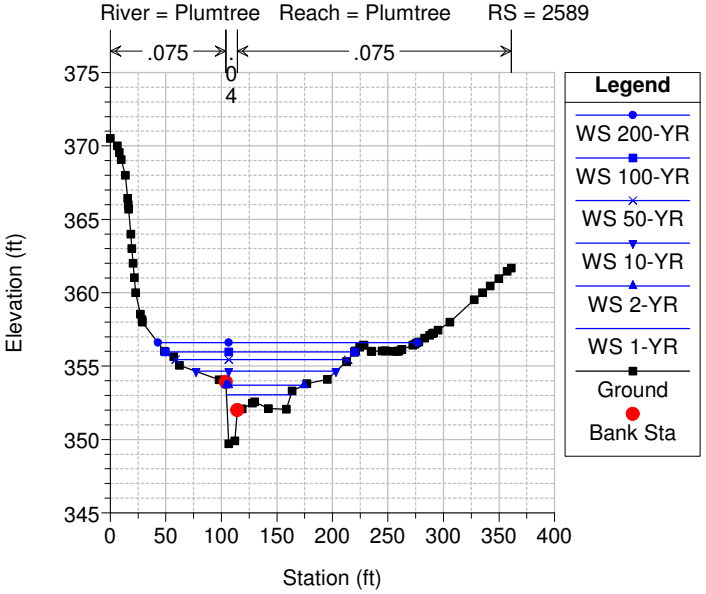
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

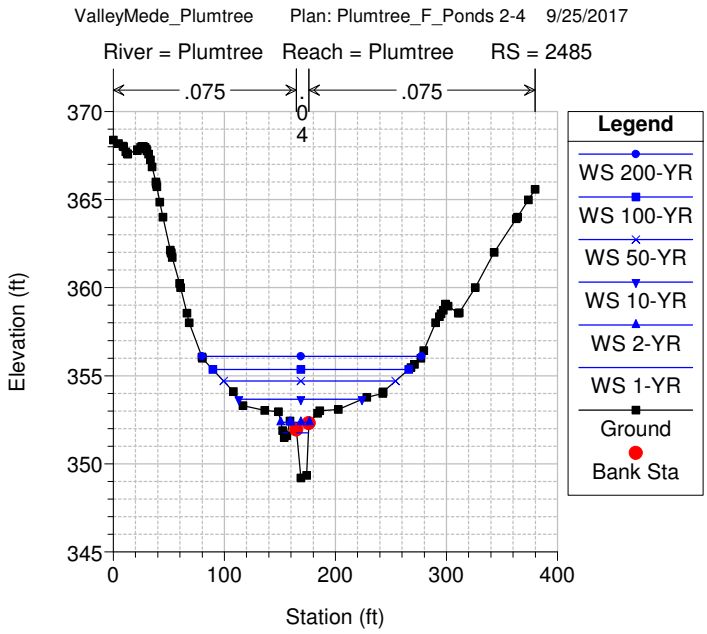
River = Plumtree Reach = Plumtree RS = 2759

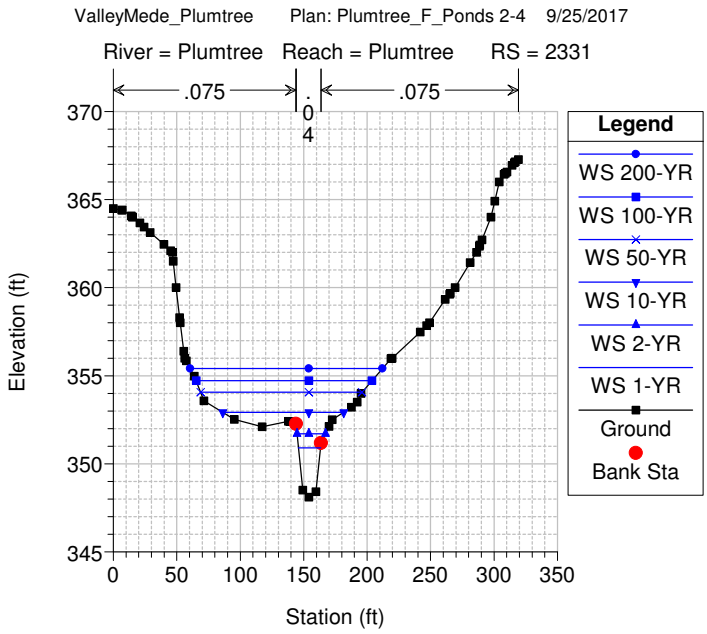


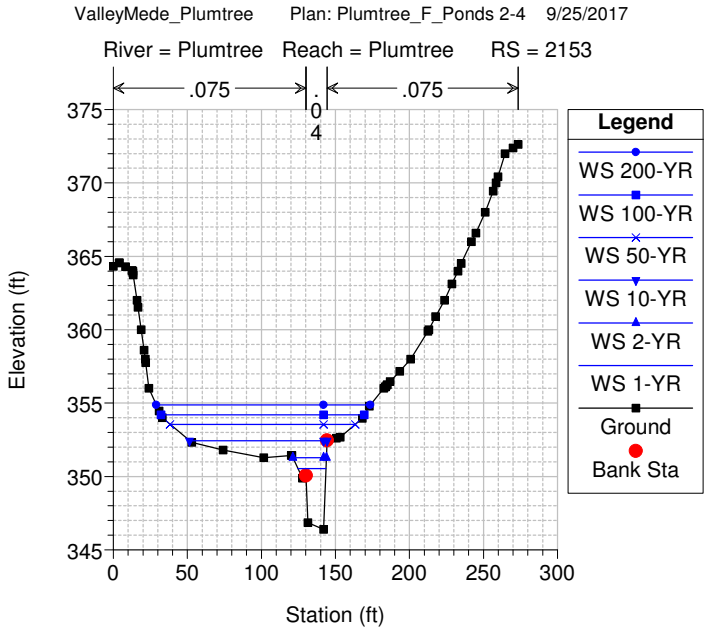
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

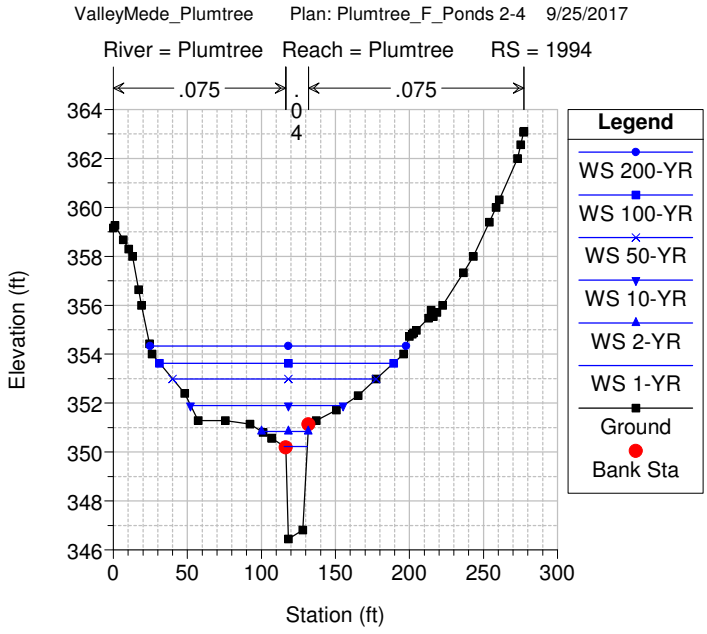
River = Plumtree Reach = Plumtree RS = 2589

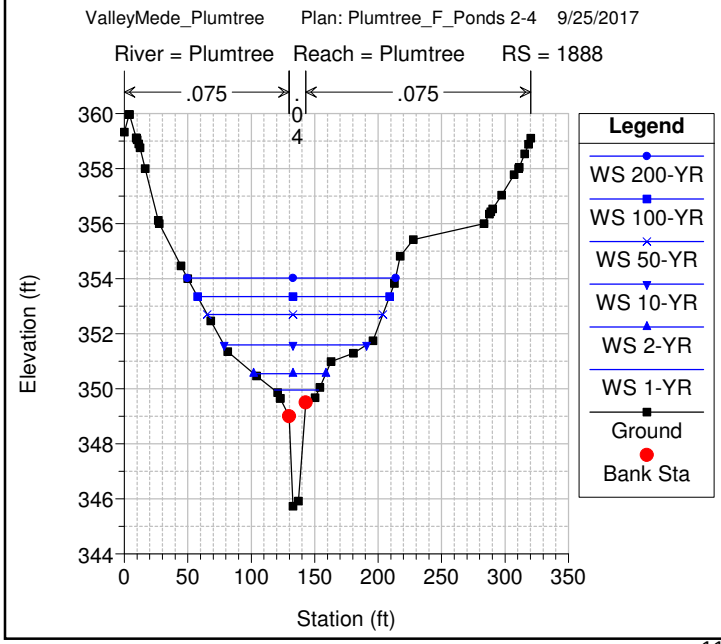


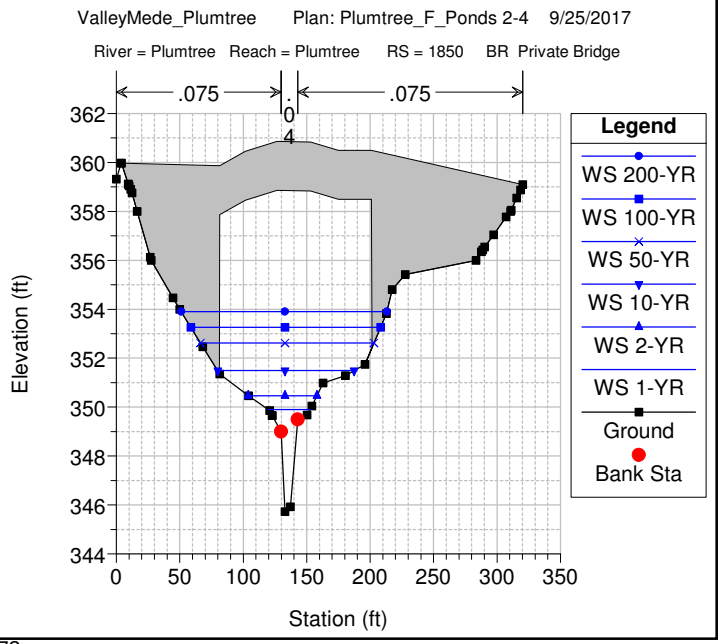

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 2485
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 2331
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 2153
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

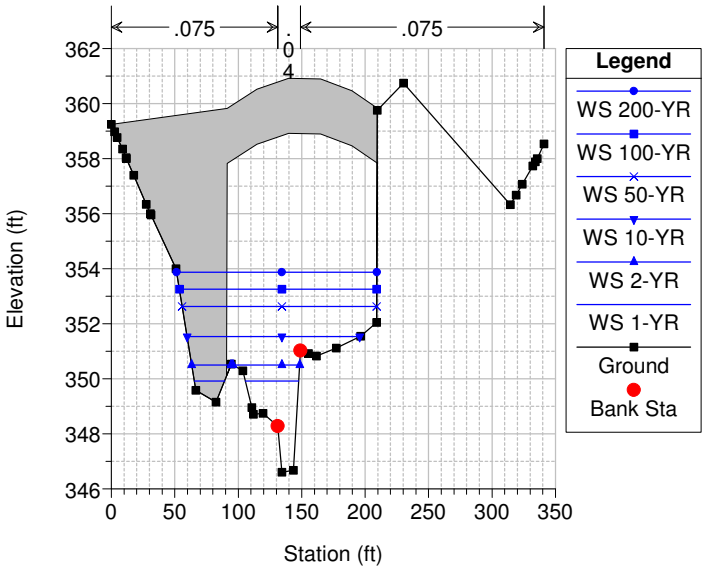

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 1994
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 1888
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

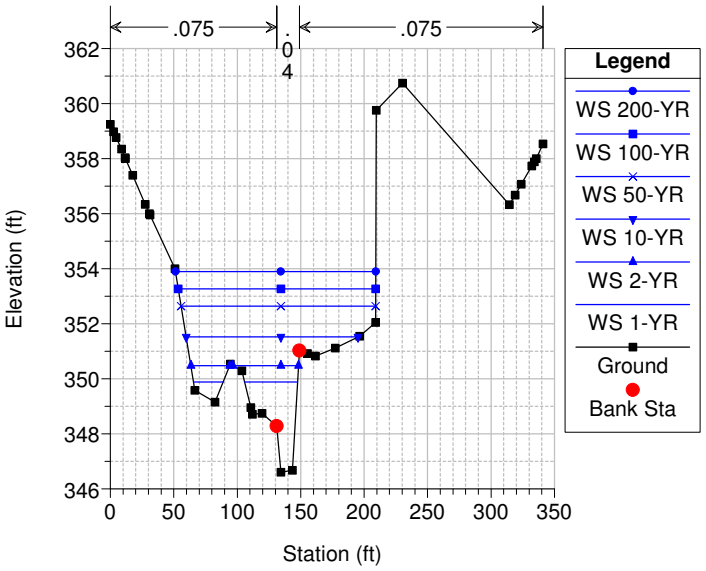
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge



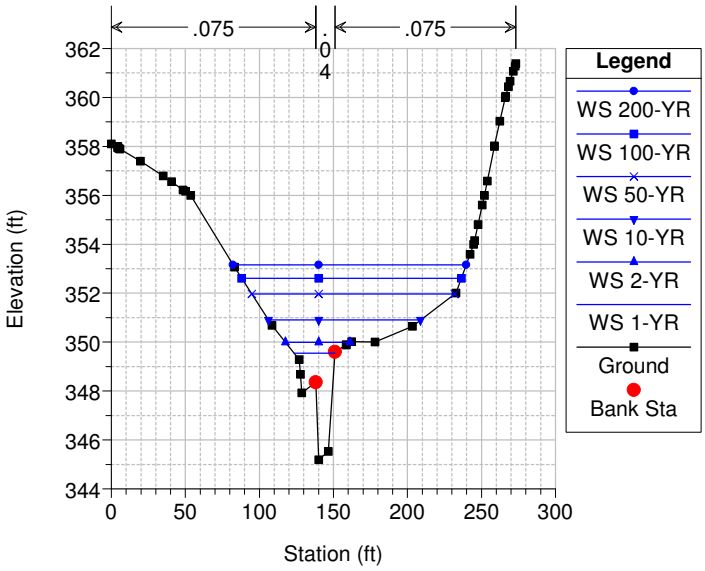
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 1830



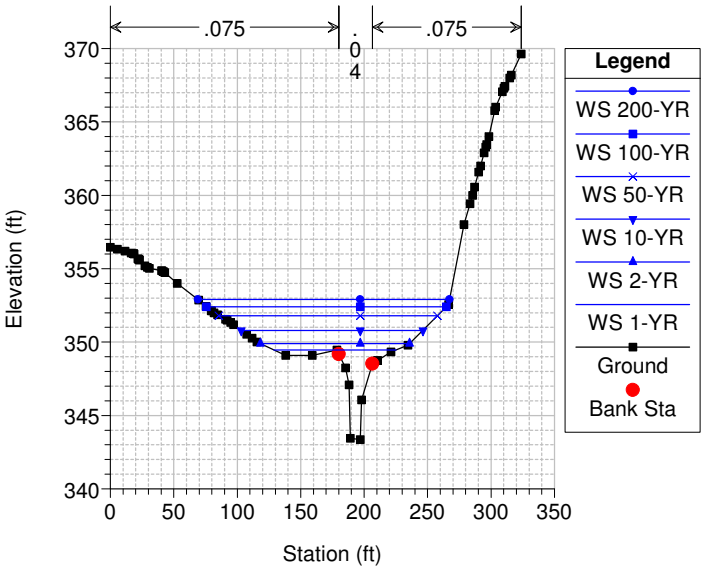
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 1641



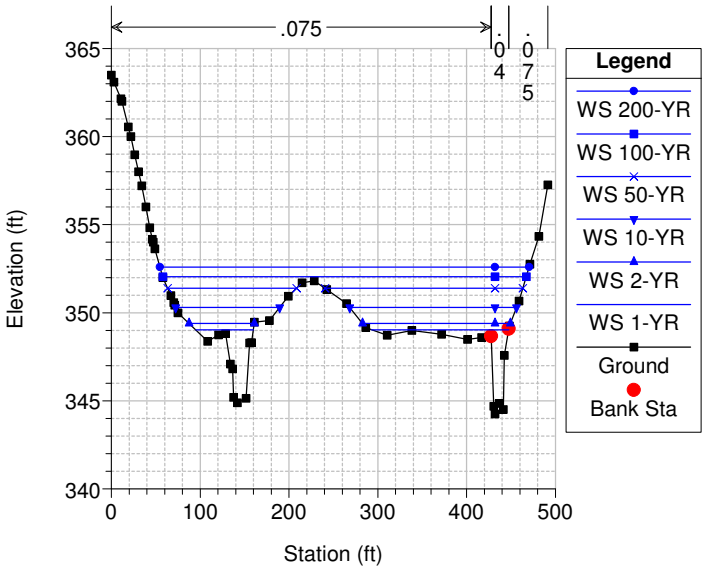
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

River = Plumtree Reach = Plumtree RS = 1463



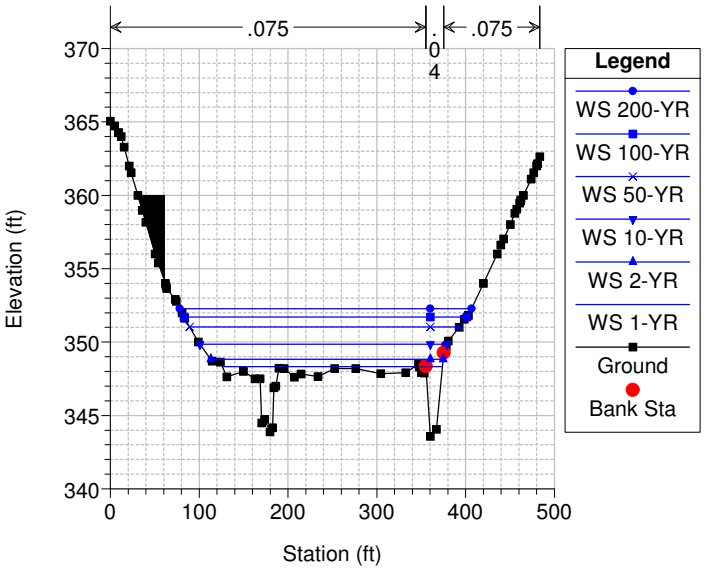
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

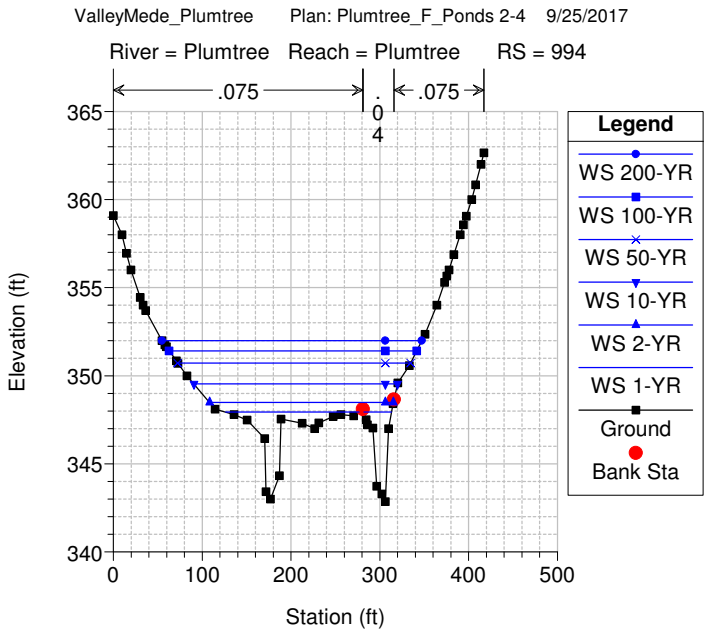
River = Plumtree Reach = Plumtree RS = 1291

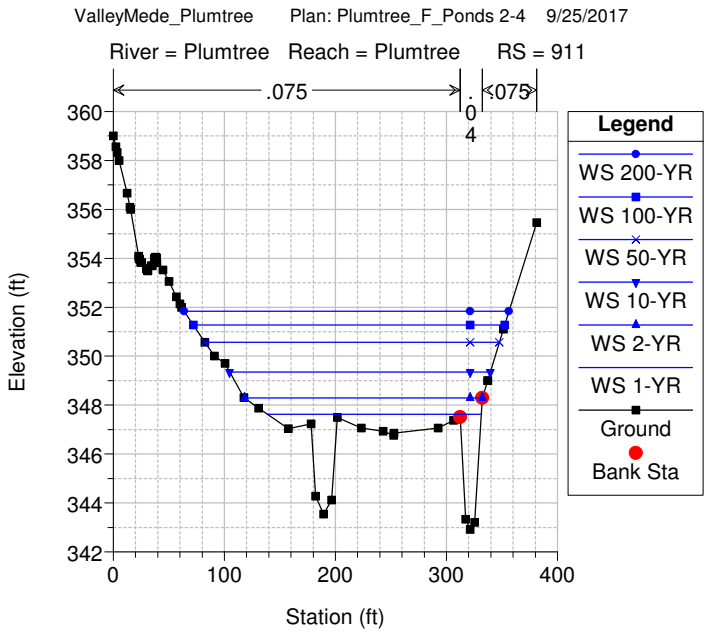


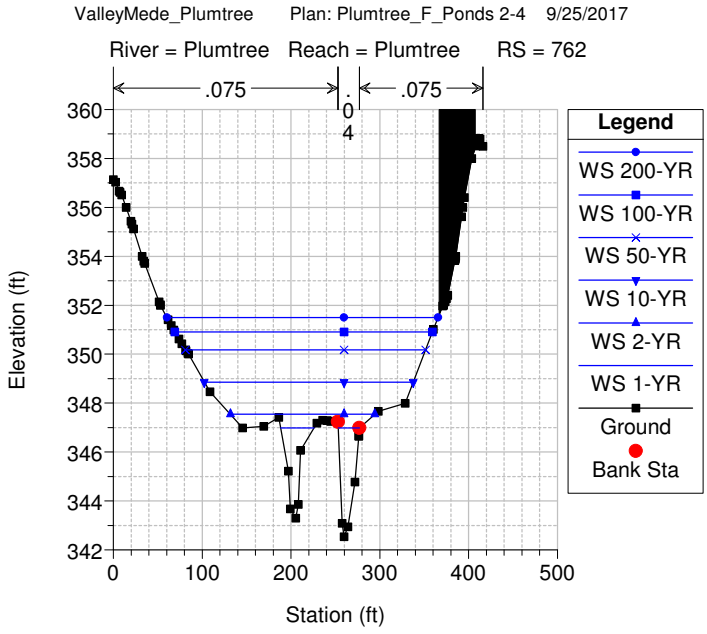
ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017

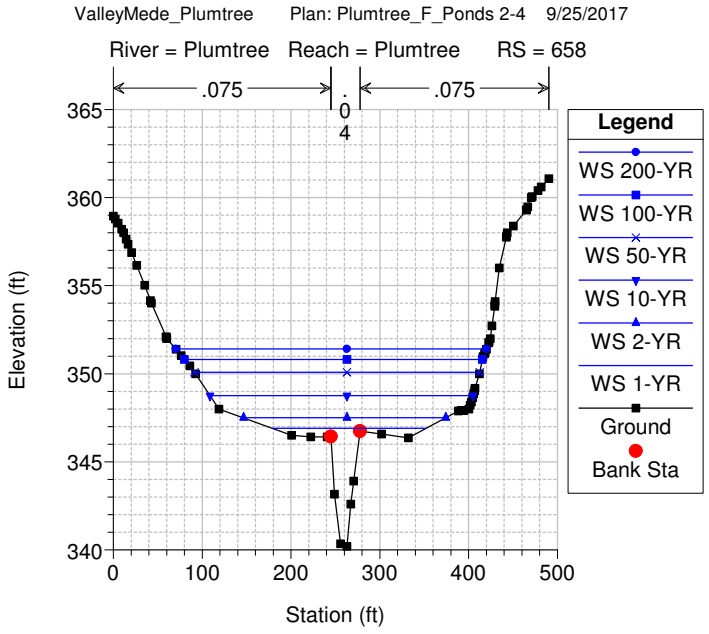
River = Plumtree Reach = Plumtree RS = 1124

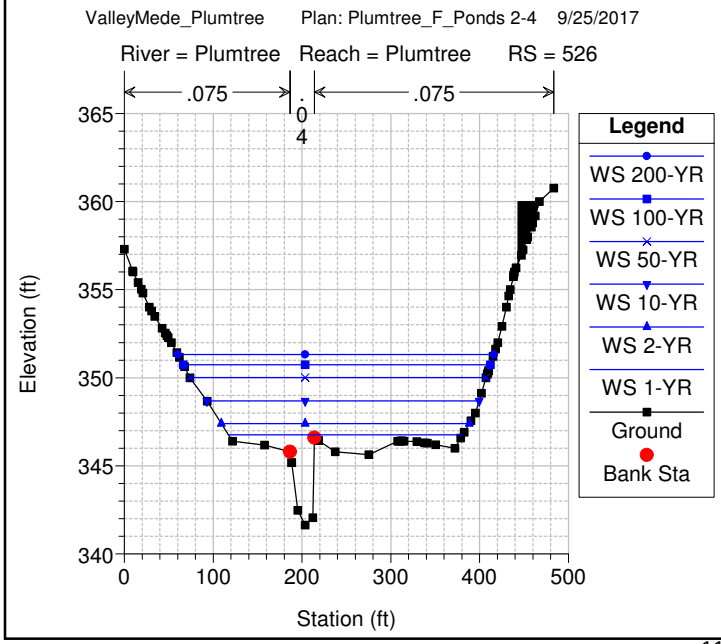


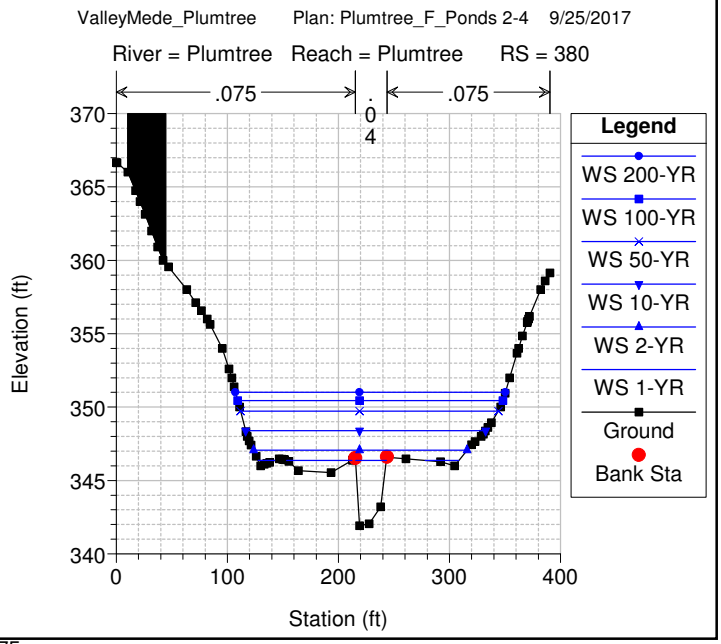

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 994
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

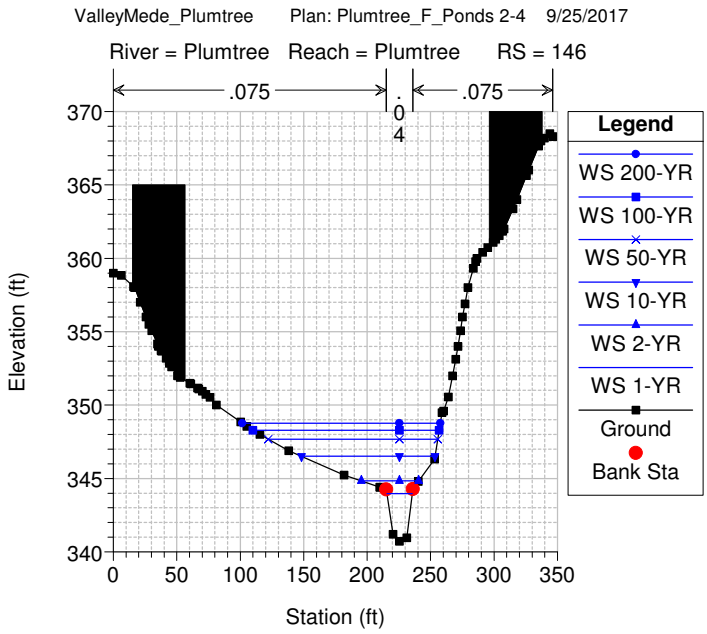

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 911
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

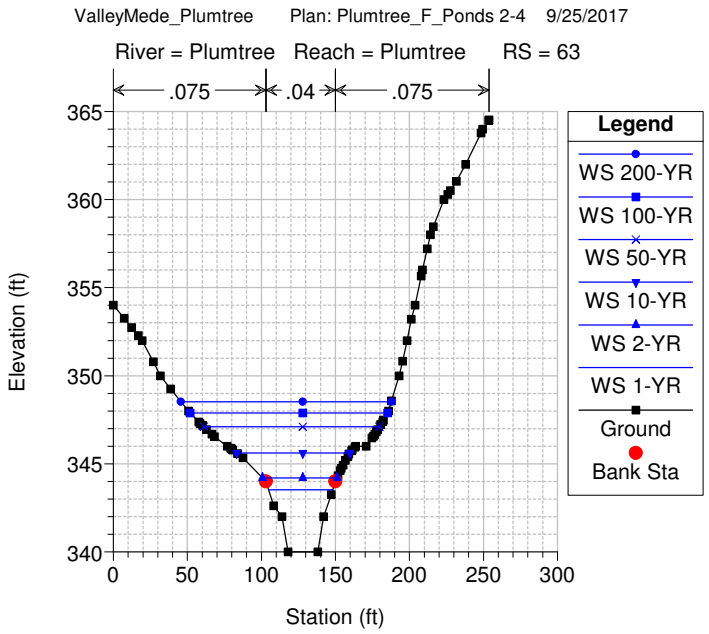

ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 762
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 658
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 526
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 380
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 146
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_F_Ponds 2-4 9/25/2017
River = Plumtree Reach = Plumtree RS = 63
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
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PROJECT DATA
Project Title: ValleyMede_Plumtree
Project File : ValleyMede_Plumtree.prj
Run Date and Time: 9/25/2017 6:40:26 AM

Project in English units

PLAN DATA

Plan Title: Plumtree_F_Ponds 2-4
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.p07

Geometry Title: Plumtree_F_Ponds 2-4
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g12

Flow Title : Plumtree_F_Ponds 2-4
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f05

Plan Description:
Proposed condition which includes grading for online storage in Plumtree Branch between Hearthstone Rd and Michael's Way. (Ponds 2-4)

Plan Summary Information:

Number of:	Cross Sections	= 85	Multiple Openings	=	0
	Culverts	= 6	Inline Structures	=	3
	Bridges	= 2	Lateral Structures	=	0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Plumtree_F_Ponds 2-4
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f05

Flow Data (cfs)

River	Reach	RS	1-YR	2-YR	10-YR	50-YR	100-YR	200-YR

Plumtree	Plumtree	10286	223	307	596	995
1200	1441					
Plumtree	Plumtree	9499	187	289	633	1118
1437	1803					
Plumtree	Plumtree	7954	105	164	347	862
1287	1699					
Plumtree	Plumtree	7030	88	144	289	778
1203	1645					
Plumtree	Plumtree	6568	92	149	307	798
1134	1562					
Plumtree	Plumtree	4185	133	206	404	774
1066	1465					
Plumtree	Plumtree	1291	403	589	1171	2027
2624	3174					

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Plumtree	Plumtree	1-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	2-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	10-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	50-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	100-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	200-YR	Critical	Normal S = 0.0035

GEOMETRY DATA

Geometry Title: Plumtree_F_Ponds 2-4
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g12

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10286

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	421.06	4.46	420.89	12.57	420.32	16.13	420	21.94	419.29
34.88	418	40.42	417.33	49.09	416.56	55.82	416.21	59.64	416.08
64.03	416.14	69.28	416.31	71.51	416.31	77.01	416.75	78.81	416.76
87.6	416	91.89	415.92	104.16	414	107.04	413.94	110.15	414
119.18	415.05	122.23	414.9	125.21	414.83	141.42	414.84	151.61	414.58
159.6	414.54	167.19	414.69	175.25	414.38	179.96	413.77	184.56	413.83
198.65	413.63	213.29	412.97	221.19	413.06	244.79	412.19	252.86	412
260.69	411.14	268.55	410	275.66	409.1	281.64	408	295.07	406.35
301.98	405.73	324.56	404	331.77	402.81	335.97	402	342.56	400
348.24	398	350.27	397.89	380.47	396.22	384.18	396	392.32	395.09
392.68	395.09	397.28	395.62	402.89	396.12	413.25	396.41	418.97	396.59
431.99	396.41	448.58	396.55	450.96	396.5	456.66	396	465.37	395.79
485.62	395.34	494.65	395.35	513.52	395.9	514.52	396	527.48	398
535.86	400	542.87	402	555.37	406	562.67	408	571.1	410
582.03	412	599.19	414	605.88	414.94	612.34	415.57	635.29	417.19

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	380.47	.04	413.25	.085

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
380.47 413.25 240.46 241.25 237.2 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
418.97	635.29	396.59	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10044

INPUT

Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	412.61	5.59	412.52	12.02	412	24.56	410	43.68	408
63.32	407.31	82.83	408	95.82	408.67	112.17	408.9	135.95	408
150.67	407.02	155.38	406.93	170.58	407.72	184.39	408.12	187.95	408
198.17	406	207.41	404.64	213.72	403.97	220.01	403.47	230.16	403.33
237.26	402.98	240.08	402.75	253.05	401.3	261.48	400	269.64	398
276.05	396	280.89	394.8	280.91	394.79	283.98	394	296.18	392.49
306.31	393.62	315.4	393.68	315.41	393.68	321.2	393.72	340.79	393.4
357.04	393.75	384.23	394.62	389.34	394.61	409.5	394	417.56	393.18
419.37	393.18	428.98	394	438.91	394.31	451.85	394.26	461.9	394.35
480.45	394.77	489.6	395.18	496.68	395.1	547.82	396	555.48	396.43
564.03	396.66	570.08	396.96	600.19	397.8	605.55	398.35	610.97	398.79
622.38	399.08	632.53	400	658.42	401.23	661.34	401.26	665.82	401.48
679.52	401.73	692.52	401.54	695.05	401.76	701.43	401.68	704.45	401.5
715.06	401.24	723.65	401.19	738.24	400.62	741.08	400.41	748.78	400.57
754.02	400.82	766.27	400.65	779.16	401.67	781.77	402	794.47	404
812.23	408	815.19	408.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	280.91	.04	321.2	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff	Contr.	Expan.
280.91	321.2	233.9	230.57	222.97	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9814

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	408.67	12.64	408	20.9	407.3	27.53	406.98	42.5	406.44
45.07	406.25	49.58	405.72	78.23	403.56	83.62	402.79	92.79	403.11
109.61	402.4	113.8	402	123.62	401.65	158.68	400.12	170.91	398.99
182.64	398	195.08	396	198.75	395.24	205.66	394	253.13	392
256.5	391.77	269.73	390.59	269.76	390.59	276.29	390	281.78	388.76
287.27	390	300	391.49	302.59	391.81	308.77	392.3	315.09	392.31
322.12	392.41	326.48	392.65	332.87	392.67	336.92	392.57	358.02	392.79
362.67	392.97	366.57	392.83	382.15	392.69	386.15	392.76	408.35	392.69
415.33	392.55	427.21	392.45	466.82	393.37	473.56	393.78	479.56	394
490.09	394.88	500.42	395.03	503.77	395.29	508.66	395.37	510.05	395.29
514.08	395.75	518.53	395.7	538.06	395.23	547.13	395.22	564.37	396
575.99	396.66	593.58	397.53	602.7	396.78	604.57	396.76	609.13	397.48
610.69	398	617.78	398.3	636.1	398.77	690.36	399.64	696.36	399.66
731.55	398.7	739.3	398.59	745.07	398.39	755.19	398.48	767.5	398.81
779.98	399.52	790.91	399.95	806.05	402	818.51	403.5	823.74	404
826.23	404.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	253.13	.04	308.77	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff	Contr.	Expan.
253.13	308.77	52.19	51.52	50.85	.1	.3

Right Levee Station= 514.08 Elevation= 395.75

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9762

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406.21	1.37	406	14.09	404.95	24.55	404.21	38.68	402.62
47.25	402	67.31	400	71.18	399.81	79.7	399.62	84.43	399.37
117.61	398.32	130.2	398.16	134.88	398	147.37	397.38	157.13	397.03
162.41	397.34	174.01	396.74	180.45	396	203.34	393.86	225.77	392.62
235.15	392	236.85	391.76	246.11	391.05	253.44	390.35	253.48	390.34
256.39	390	260.62	388.92	263.74	388	265.59	389.21	267.49	388
276.02	390	282.13	392	284.2	392.49	284.22	392.49	290.57	394

```
  292.66  393.58  294.75     394   307.3  392.92  329.54  391.59  336.98  391.01
  346.17  391.13  351.58  391.28  355.99  391.22  362.72  391.29  365.01  391.44
  375.54  391.54  383.33  391.42  390.57  391.67  406.22     392  413.09  392.62
  427.35  393.41  431.42   393.8  432.21     394  447.82  395.11  449.31  395.15
  470.35  394.72   473.7  395.12  482.31  395.53  496.51  395.21  507.72  395.47
  543.73  396.64  554.26  396.66  559.24  396.89  562.97  396.96  568.76  397.23
  584.75  397.94  589.53  398.31  594.28     398  601.77  397.68  611.77     398
   662.6   399.2  729.79  397.67  753.67  397.86  761.91     398   785.2  399.61
  794.52  400.41  805.84  402.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  235.15     .04  284.22    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.15  284.22            32.64   30.09   27.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9732

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  121.15           145.71  143.47  141.55             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 9650

INPUT
Description: Michaels Way
Distance from Upstream XS =      51
Deck/Roadway Width        =      50
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  396.38            26.1 395.934            49.6 395.582
    91.4 394.914           117.4 394.746           144.9 394.497
   186.3 394.402          211.94 394.376          238.63 394.594
  353.45     396

Upstream Bridge Cross Section Data
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
```

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  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
          82.5  121.15            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  397.96             8.6   397.3            45.6 396.969
    68.8 396.671            92.4  396.38           123.2 395.934
   146.8 395.582           191.3 394.914           209.6 394.746
   232.9 394.497           262.2 394.402           288.2 394.376
  314.98 394.594          417.56     396

Downstream Bridge Cross Section Data
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.96   15.99  396.01   17.57     396   20.76  395.29   25.99  395.01
   29.32  394.71   29.33  394.38   39.55  392.85   60.92  392.22   95.59   390.4
  100.13  389.82  106.73  388.97  116.38  387.66  117.95  386.81  124.68  386.27
  130.57  386.46  134.27   387.9   134.7     388  137.88  388.68  144.79  390.87
  157.88  392.09  174.45  391.81  191.33  392.09  218.95   392.7   229.4  392.07
  229.72  392.09  239.13  392.16  239.87  392.21  251.99  392.37  252.81  392.33
  253.84  392.05  264.78  392.06  265.66  392.35  265.82  392.37  274.13  392.48
  275.38  392.39   275.8  392.37  280.37  392.38  285.74  392.34  288.04  392.35
  289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
  294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
  302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
  336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
  353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
  363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        106.73  137.88            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8     391       F
   140.7  417.56     391       F

Upstream Embankment side slope             =       3 horiz. to 1.0 vertical
Downstream Embankment side slope           =       3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.5     .024     .016        0                  .5                1
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Upstream   Elevation =  387.74
           Centerline Station =  102
Downstream Elevation =  386.61
           Centerline Station =  120

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.6     .024     .016        0                  .5               1
Upstream   Elevation =  387.77
           Centerline Station =  112
Downstream Elevation =  386.6
           Centerline Station =  130
```

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	112.44	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.44
Q Barrel (cfs)	112.44	Culv Vel DS (ft/s)	5.87
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.37	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	389.11	Culv Exit Loss (ft)	0.27
Delta EG (ft)	1.67	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.78	Q Weir (cfs)	
E.G. IC (ft)	390.64	Weir Sta Lft (ft)	
E.G. OC (ft)	391.04	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.11	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.01	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	146.32	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.10
Q Barrel (cfs)	146.32	Culv Vel DS (ft/s)	6.26
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.89	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	389.59	Culv Exit Loss (ft)	0.31
Delta EG (ft)	1.66	Culv Entr Loss (ft)	0.51
Delta WS (ft)	1.76	Q Weir (cfs)	
E.G. IC (ft)	391.21	Weir Sta Lft (ft)	
E.G. OC (ft)	391.64	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.11	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.59	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.37	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.37	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	298.48	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.73
Q Barrel (cfs)	298.48	Culv Vel DS (ft/s)	9.52
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	391.19	Culv Frctn Ls (ft)	0.71
W.S. DS (ft)	390.71	Culv Exit Loss (ft)	0.93
Delta EG (ft)	2.77	Culv Entr Loss (ft)	0.74
Delta WS (ft)	3.08	Q Weir (cfs)	
E.G. IC (ft)	393.54	Weir Sta Lft (ft)	
E.G. OC (ft)	393.95	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.74	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.71	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.98	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	378.21	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.39
Q Barrel (cfs)	378.21	Culv Vel DS (ft/s)	10.93
E.G. US. (ft)	395.22	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.07	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.13	Culv Frctn Ls (ft)	1.15
W.S. DS (ft)	391.24	Culv Exit Loss (ft)	0.97
Delta EG (ft)	3.08	Culv Entr Loss (ft)	0.84
Delta WS (ft)	3.83	Q Weir (cfs)	238.71
E.G. IC (ft)	395.10	Weir Sta Lft (ft)	72.73
E.G. OC (ft)	395.21	Weir Sta Rgt (ft)	275.11
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.69	Weir Max Depth (ft)	0.84
Culv WS Outlet (ft)	391.24	Weir Avg Depth (ft)	0.57
Culv Nml Depth (ft)	5.92	Weir Flow Area (sq ft)	114.77
Culv Crt Depth (ft)	4.07	Min El Weir Flow (ft)	394.39

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	392.52	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.30
Q Barrel (cfs)	392.52	Culv Vel DS (ft/s)	10.75
E.G. US. (ft)	395.49	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.31	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.62	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	391.58	Culv Exit Loss (ft)	0.76
Delta EG (ft)	2.87	Culv Entr Loss (ft)	0.82
Delta WS (ft)	3.73	Q Weir (cfs)	414.66
E.G. IC (ft)	395.44	Weir Sta Lft (ft)	55.91
E.G. OC (ft)	395.48	Weir Sta Rgt (ft)	283.32
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.01	Weir Max Depth (ft)	1.11
Culv WS Outlet (ft)	391.58	Weir Avg Depth (ft)	0.76
Culv Nml Depth (ft)	5.92	Weir Flow Area (sq ft)	172.55
Culv Crt Depth (ft)	4.14	Min El Weir Flow (ft)	394.39

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	401.27	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.28
Q Barrel (cfs)	401.27	Culv Vel DS (ft/s)	10.47
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.56	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	391.92	Culv Exit Loss (ft)	0.50
Delta EG (ft)	2.64	Culv Entr Loss (ft)	0.82
Delta WS (ft)	3.64	Q Weir (cfs)	638.08
E.G. IC (ft)	395.61	Weir Sta Lft (ft)	43.80
E.G. OC (ft)	395.76	Weir Sta Rgt (ft)	291.56
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.30	Weir Max Depth (ft)	1.38
Culv WS Outlet (ft)	391.92	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)	5.92	Weir Flow Area (sq ft)	237.18
Culv Crt Depth (ft)	4.14	Min El Weir Flow (ft)	394.39

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.56	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.48
Q Barrel (cfs)	110.56	Culv Vel DS (ft/s)	5.74
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.37	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	389.11	Culv Exit Loss (ft)	0.25

Delta EG (ft)	1.67	Culv Entr Loss (ft)	0.44
Delta WS (ft)	1.78	Q Weir (cfs)	
E.G. IC (ft)	390.64	Weir Sta Lft (ft)	
E.G. OC (ft)	391.04	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.74	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.11	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.97	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.94	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	160.68	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.38
Q Barrel (cfs)	160.68	Culv Vel DS (ft/s)	6.85
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.89	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	389.59	Culv Exit Loss (ft)	0.43
Delta EG (ft)	1.66	Culv Entr Loss (ft)	0.10
Delta WS (ft)	1.76	Q Weir (cfs)	
E.G. IC (ft)	391.46	Weir Sta Lft (ft)	
E.G. OC (ft)	391.91	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	390.27	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.59	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.49	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.50	Min El Weir Flow (ft)	394.39

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	297.52	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.83
Q Barrel (cfs)	297.52	Culv Vel DS (ft/s)	9.47
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	391.19	Culv Frctn Ls (ft)	0.71
W.S. DS (ft)	390.71	Culv Exit Loss (ft)	0.92
Delta EG (ft)	2.77	Culv Entr Loss (ft)	0.75
Delta WS (ft)	3.08	Q Weir (cfs)	
E.G. IC (ft)	393.55	Weir Sta Lft (ft)	
E.G. OC (ft)	393.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.71	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.71	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	378.08	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.48
Q Barrel (cfs)	378.08	Culv Vel DS (ft/s)	10.91
E.G. US. (ft)	395.22	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.07	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.13	Culv Frctn Ls (ft)	1.12
W.S. DS (ft)	391.24	Culv Exit Loss (ft)	0.96
Delta EG (ft)	3.08	Culv Entr Loss (ft)	0.85
Delta WS (ft)	3.83	Q Weir (cfs)	238.71
E.G. IC (ft)	395.12	Weir Sta Lft (ft)	72.73
E.G. OC (ft)	395.22	Weir Sta Rgt (ft)	275.11
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.66	Weir Max Depth (ft)	0.84
Culv WS Outlet (ft)	391.24	Weir Avg Depth (ft)	0.57
Culv Nml Depth (ft)	5.22	Weir Flow Area (sq ft)	114.77
Culv Crt Depth (ft)	4.06	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	392.82	Culv Full Len (ft)	

# Barrels	1	Culv Vel US (ft/s)	10.38
Q Barrel (cfs)	392.82	Culv Vel DS (ft/s)	10.75
E.G. US. (ft)	395.49	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.31	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.62	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	391.58	Culv Exit Loss (ft)	0.76
Delta EG (ft)	2.87	Culv Entr Loss (ft)	0.84
Delta WS (ft)	3.73	Q Weir (cfs)	414.66
E.G. IC (ft)	395.48	Weir Sta Lft (ft)	55.91
E.G. OC (ft)	395.50	Weir Sta Rgt (ft)	283.32
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.99	Weir Max Depth (ft)	1.11
Culv WS Outlet (ft)	391.58	Weir Avg Depth (ft)	0.76
Culv Nml Depth (ft)	5.92	Weir Flow Area (sq ft)	172.55
Culv Crt Depth (ft)	4.14	Min El Weir Flow (ft)	394.39

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	401.65	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.32
Q Barrel (cfs)	401.65	Culv Vel DS (ft/s)	10.47
E.G. US. (ft)	395.76	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.56	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	391.92	Culv Exit Loss (ft)	0.50
Delta EG (ft)	2.64	Culv Entr Loss (ft)	0.83
Delta WS (ft)	3.64	Q Weir (cfs)	638.08
E.G. IC (ft)	395.64	Weir Sta Lft (ft)	43.80
E.G. OC (ft)	395.77	Weir Sta Rgt (ft)	291.56
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.28	Weir Max Depth (ft)	1.38
Culv WS Outlet (ft)	391.92	Weir Avg Depth (ft)	0.96
Culv Nml Depth (ft)	5.92	Weir Flow Area (sq ft)	237.18
Culv Crt Depth (ft)	4.14	Min El Weir Flow (ft)	394.39

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01
29.32	394.71	29.33	394.38	39.55	392.85	60.92	392.22	95.59	390.4
100.13	389.82	106.73	388.97	116.38	387.66	117.95	386.81	124.68	386.27
130.57	386.46	134.27	387.9	134.7	388	137.88	388.68	144.79	390.87
157.88	392.09	174.45	391.81	191.33	392.09	218.95	392.7	229.4	392.07
229.72	392.09	239.13	392.16	239.87	392.21	251.99	392.37	252.81	392.33
253.84	392.05	264.78	392.06	265.66	392.35	265.82	392.37	274.13	392.48
275.38	392.39	275.8	392.37	280.37	392.38	285.74	392.34	288.04	392.35
289.04	392.37	289.76	392.35	291.67	392.43	292.2	392.41	293.73	392.52
294.34	392.49	295.48	392.61	297.43	392.5	299.89	392.58	301.52	392.7
302.57	392.72	317.67	393.33	321.58	393.35	323.43	393.4	328.45	393.52
336.04	393.41	337.54	393.43	342.18	393.53	347.45	393.83	351.46	393.93
353.19	394	353.68	394.06	355.32	394.12	356.64	394.21	359.84	394.23
363.57	394.38	408.86	396	412.96	396.28	417.56	396.44		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.73	.04	137.88	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
106.73	137.88	74.95	89.37	103.36	.3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	104.8	391	F

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   140.7  417.56     391       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9499

INPUT
Description:
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.42    1.16  397.39   10.04     396   12.41   395.1    15.2     394
   19.89   392.3   20.69     392   30.94  390.03   58.35  389.54   78.64   389.7
   91.71  389.72   91.72  389.72   95.66  389.73  106.35   385.4  108.48  385.35
  121.85  388.31  126.28  389.29   134.6  389.39  148.99  387.24  154.41  388.47
  172.52  389.82  180.01     390  192.12     392  192.21  392.01   204.6     394
  211.88  395.17  217.46     396  219.87  396.49  223.11  397.11  227.54     398
  230.91  398.56  233.71     399  240.41     400  246.88  400.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   95.66     .04  126.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         95.66  126.28            98.65   101.8  104.92             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9398

INPUT
Description:
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.18    6.45     398   10.27  396.93   13.95     396   17.15   395.1
   21.18     394   22.21  393.72   23.21  393.45   25.97  392.71   28.56     392
   35.43  391.01   43.03     390   56.35     388    82.5  387.65  114.44  387.23
  124.96  386.93  128.65  386.64  134.08  386.21  135.79  386.08   136.8     386
  141.88  385.75  145.59  385.57  148.38  385.43  150.17     386     152  386.59
  158.91  387.03  167.65  387.59  174.14     388  186.81  388.92  200.79  389.39
   202.6     390  212.88  391.15  214.18     392  222.75   392.3  224.12  392.62
  227.87  392.98  232.15  393.19  232.46  393.21  235.68  393.41  238.89  393.56
  241.36  393.69  244.69  393.87  245.13  393.89  247.11     394   255.3  394.93
  262.09  395.66  265.18     396  268.55  396.34  272.92  396.76  279.66  397.44
  280.66  397.53  281.55  397.61  285.79     398   291.8  399.12  296.37     400
   301.1  400.86

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085   35.43    .055    82.5     .04  167.65    .055  186.81    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  167.65            97.49   96.47   93.03             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9301

INPUT
Description:
Station Elevation Data    num=      83
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.19    3.07     400    4.08  399.94     4.2  399.94   13.57  399.39
    15.2  399.29   20.44  399.07   21.01  399.05   21.75  399.02   22.33     399
   33.53  398.93   34.16  398.91   34.62  398.89   50.07  398.18   51.97  398.04
   52.52     398   56.81  396.58   58.64     396   59.61  395.91   64.07  395.25
   72.56     394   73.12  393.94    74.3  393.83    84.4  392.97   90.89  392.65
   97.02  392.35  101.28  392.17  101.59  392.16  101.86  392.14  101.98  392.14
  104.04     392   106.2  392.22  109.76  392.28  110.09  392.26   110.2  392.25
  111.04  392.21   113.1  392.09  146.72     388  151.47  386.42  152.72     386
  154.95  385.26  157.77  384.32  158.73     384  160.52  383.41   161.7  383.02
  163.52  382.41  164.75     382  166.94   381.9  171.14   381.7  174.56  381.53
  176.06     382  195.49     382  197.25  382.58  198.76  383.08  201.58     384
  203.59  384.66  211.72  387.33  212.37  387.54  213.77     388  215.21  388.62
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222.39	389.2	234.24	392.69	252.67	392.11	269.21	391.61	287.95	393.96
291.68	394	304.65	395.18	314.29	395.71	317.24	395.93	317.28	395.93
318.14	396	320.84	396.21	321.8	396.3	324.25	396.51	326.08	396.68
329.75	397.01	336.95	397.7	338.16	397.81	340.03	398	341.44	398.43
347.8	400	351.27	400.78	352.31	401.05				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.085	113.1	.055	161.7	.04	198.76	.055	215.21	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
161.7	198.76	115.5	105	84.84	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
42.5	98.1	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9196

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.06	3.11	399.1	7.66	399.14	8.21	399.14	11.14	399.2
14.16	399.24	15.16	399.23	16.06	399.21	16.45	399.2	16.79	399.18
17.07	399.17	44.77	399	46.3	398.96	57.79	398.17	58.05	398.12
58.52	398.07	59.24	398.01	59.47	398	59.81	397.95	60.63	397.83
60.69	397.82	61.36	397.83	62.34	397.8	62.8	397.77	63.34	397.77
63.74	397.73	73.15	396.86	74.17	396.76	74.98	396.67	80.24	396
91.29	394.71	96.77	394	103.28	393.2	108.02	392.64	109.29	392.48
110.44	392.34	113.4	392	129.6	390	133.01	389.51	134.1	389.41
135.16	389.31	138.39	388.96	141.78	388.59	143.61	388.38	145.61	388.15
146.23	388.08	170.06	388	177.42	388	192.18	384.22	204	381.19
208.74	379.98	209.41	379.98	209.85	380	252.75	380	256.5	381.25
258.34	381.86	265.16	384.14	273.3	386.85	276.75	388	282.41	388.4
293.08	392.68	309.62	391.47	323.53	392.22	323.58	392.18	354.2	394
361.45	395.27	365.79	396	370.25	397.12	373.9	398	375.39	398.33
383.13	400	386.3	400.73	391.87	402	395.39	402.9		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.085	145.61	.055	204	.04	256.5	.055	276.75	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204	256.5	142.73	208.89	146.19	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
11	50.8	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8987

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.15	2.15	402.17	3.39	402.13	6.04	402.17	12.51	402.07
13.01	402.08	14.07	402.07	15.03	402.07	16.62	402.1	16.88	402.09
17.7	402.05	18.67	402	24.82	401.62	50.49	400	71.91	398.02
72.1	398	72.14	397.99	82.9	396	83.83	395.8	92.09	394
100.48	392.04	100.64	392	100.82	391.96	101.02	391.92	110.17	390
121.03	388.29	122.34	388	142.19	381.4	152.75	377.91	156.49	376.67
156.5	376.66	161.94	374.86	170.22	372.11	172.51	371.35	178.25	369.44
179.59	369	200.15	369	202.96	369.94	217.4	374.75	222.78	376.54
239.83	382.23	245.14	383.48	245.15	383.49	249.39	384.49	263.78	387.91
264.18	388	301.3	390	301.69	390.04	302.4	390.1	313.7	391.1
324.37	392	326.83	392.6	329.22	393.19	332.48	394	335.16	394.95
338.19	396	340.18	396.58	342.55	397.27	344.45	397.82	345.03	398
346.35	398.38	351.77	400	352.66	400.28	356.31	401.47	357.07	401.72
357.94	402	358.9	402.3	364.45	404	365.62	404.4	369.07	405.49

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .085  121.03    .055  161.94     .04   217.4    .055   301.3    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        161.94   217.4           177.07  233.77   177.4             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8753

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  392.84    3.57  392.36    4.48  392.24    6.24     392   14.25  391.04
   22.57     390   39.19  388.36   42.66     388   43.14  387.95   44.71  387.76
   45.13   387.7   53.93     387   55.07  386.91   55.91  386.89   59.98  386.86
   67.22  387.07   71.26  386.74   71.58  386.73   74.94  386.49   75.24  386.48
   79.99  386.13   80.09  386.12   81.64     386   93.34     386  122.87  376.76
  128.49     375  140.52  371.23  147.66     369  223.35     369  226.78  370.14
  229.61  371.09  231.97  371.87  232.78  372.14  236.12  373.26  237.03  373.56
  237.82  373.82  241.36     375   246.4  376.68  249.47  377.71   254.4  379.35
   262.5  382.05  269.36  384.33  280.36     388  284.57  388.25   284.6  388.25
  284.74  388.27  302.51     390  304.49  390.31  314.62     392  318.02  392.86
  322.27     394  323.63  394.41  327.41  395.54  328.32  395.82   328.9     396
  329.96  396.36  334.49     398  337.27  399.01  339.54     400  340.77  400.45
  344.57     402  346.47   402.7     350     404   351.3  404.47  352.94  405.01
  353.27  405.12

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  128.49     .04  241.36    .065  284.57    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        128.49  241.36           179.62  174.76  144.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8579

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.17    3.31     400   17.74  399.07   34.62     398   35.22  397.93
   46.41  397.26   51.75  396.96   59.26   396.5   60.57  396.41   63.23  396.27
   68.83     396   75.46  394.89   76.44  394.72   79.84  394.17   80.17  394.11
   80.95     394   93.61     392  104.26  388.45  105.61     388  110.29  386.44
   111.5     386  116.16  384.44  117.38     384  124.72  381.55  135.38     378
     140  376.46  144.25  375.04  154.76  371.54  159.39     370  162.39     369
  231.94     369  233.37  369.47  235.71  370.24  242.87   372.6  248.28  374.39
  250.03  374.96  251.19  375.34  264.68  379.79  265.33     380  265.34     380
   271.4     382  279.14  384.55  284.82  386.42  289.61     388  315.88     390
  320.59  391.65   321.5     392  322.64  392.54  325.53     394   328.7  395.54
  329.55     396  332.04  397.23  333.33     398  334.37  398.44  338.88     400
  339.68  400.16  340.45  400.35  347.58     402  352.32   402.8

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   79.84    .055  144.25     .04  251.19    .055  315.88    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        144.25  251.19           157.46  204.23  180.47             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8374

INPUT
Description:
Station Elevation Data    num=      83
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  401.05     .39  401.02   14.71     400   17.51  399.78   17.87  399.76
   18.37  399.72   19.63  399.64   20.25   399.6      22  399.47   31.49  398.77
```

42.12	398	43.17	397.92	43.74	397.88	48.54	397.52	49.54	397.46
51.19	397.35	54.98	397.06	67.52	396.4	67.98	396.37	72.6	396.03
73	396	77.65	395.72	79.49	395.6	80.67	395.52	82.29	395.41
83.66	395.31	85.08	395.2	104.07	394	108.69	393.72	110.21	393.61
111.59	393.51	116.39	393.15	122.53	392.72	129.15	392.19	131.43	392
140.54	390.76	146.03	390	147.63	389.84	149.67	389.65	153.21	387.96
158.74	386	158.89	385.95	164.4	384	185.62	377.15	186.12	377
186.48	376.89	186.92	376.76	187.49	376.58	188.25	376.34	189.22	376.03
189.3	376	189.97	375.78	191.13	375.39	195.3	374	199.73	372.52
208.44	369.62	210.3	369	260.45	369	272.5	372.98	274.84	373.75
276.51	374.3	280.15	375.48	286.75	377.63	292.45	379.53	299.95	382
305.64	383.88	318.14	388	321.38	388	325.59	388.89	331.68	390
334.17	390.71	336.02	391.3	338.3	392	343.97	393.91	344.22	394
345.13	394.36	349.46	396	350.95	396.6	354.45	398	356.99	399.37
358.18	400	359.59	400.71	360.34	401.09				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	149.67	.055	191.13	.04	280.15	.055	318.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
191.13	280.15	136.5	145.45	139.79	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8229

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.36	5.81	394.06	6.29	394	7.37	393.95	45.41	392
69.28	390.22	72.15	390	72.18	390	72.26	389.98	72.54	389.95
73	389.89	74.69	389.72	75.45	389.65	75.92	389.61	75.99	389.6
79.77	389.37	82.3	389.25	100.97	388.39	106.97	388	109.76	387.08
113.01	386	115.77	385.09	119.05	384	121.79	383.09	125.09	382
127.8	381.1	131.12	380	133.82	379.11	137.16	378	139.68	377.17
139.84	377.11	143.2	376	145.85	375.12	149.24	374	151.86	373.13
155.27	372	157.88	371.14	161.31	370	162.6	369.57	164.33	369
240.08	369	242.87	369.93	243.08	370	243.37	370.1	248.68	371.87
249.08	372	254.7	373.87	255.09	374	257.95	374.95	260.72	375.88
261.09	376	265.96	377.62	266.74	377.88	267.1	378	268	378.3
270.59	379.16	270.6	379.17	272.75	379.88	273.1	380	278.76	381.89
279.1	382	284.77	383.89	285.1	384	290.78	385.89	291.1	386
296.78	387.9	297.1	388	308.33	389.98	308.55	389.98	309.46	389.99
310.08	390	315.47	391.1	319.76	391.98	319.9	392	320.02	392.04
321.07	392.37	326	393.9	326.33	394	328.6	394.86		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.97	.055	145.85	.04	261.09	.055	308.33	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
145.85	257.95	133.08	135.16	130.38	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8094

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.62	2.48	394.2	3.72	394	3.8	393.98	4.1	393.92
4.62	393.84	5.04	393.78	5.44	393.73	5.7	393.7	24.53	392.35
27.13	392.1	27.41	392.08	28.22	392	37.38	391.13	48.65	390
55.52	389.55	79.43	388.11	79.45	388.11	79.5	388.1	79.73	388.02
79.79	388	96.53	386.44	99.06	386.2	101.25	386	102.59	386
106.13	384.82	108.6	384	124.81	378.6	126.63	378	131.11	376.51
132.64	376	134.05	375.53	137.46	374.39	143.88	372.26	144.66	372
144.72	371.98	150.67	370	153.67	369	249.25	369	252.25	370
257.97	371.91	258.25	372	268.66	375.47	270.25	376	273.41	377.05
274.41	377.38	281.97	379.91	288.26	382	294.03	383.92	294.26	384
300.26	386	306.08	387.94	306.26	388	311.73	389.81	329.62	392
337.85	393.59	339.81	394	342.65	394.79	346.84	396	349.21	396.76

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  352.92     398  358.41  399.96  358.53     400  358.64  400.03  368.44     402
  368.97  402.04  369.04  402.04  369.13  402.05  375.87  402.56  376.87  402.63
  378.22  402.73  382.48  403.06  386.91  403.38  388.95  403.53  390.87  403.66

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  102.59    .055  134.05     .04  268.66    .055  311.73    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        134.05  268.66           130.77  139.81  134.21             .3       .5

INLINE STRUCTURE


RIVER: Plumtree
REACH: Plumtree           RS: 8000

INPUT
Description:
Distance from Upstream XS =      56
Deck/Roadway Width        =     1.5
Weir Coefficient          =     2.6
 Weir Embankment Coordinates    num =       10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
      95     387     185     387     185     381     195     381     195   369.5
     205   369.5     205     381     215     381     215     387     305     387

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Weir crest shape                            = Broad Crested


INLINE STRUCTURE OUTPUT  Profile #1-YR  Inline Structure

  E.G. Elev (ft)               373.23    Weir Sta Lft (ft)            195.00
  W.S. Elev (ft)               373.22    Weir Sta Rgt (ft)            205.00
  Q Total (cfs)                187.00    Min El Weir Flow (ft)        369.51
  Q Weir (cfs)                 187.00    Wr Top Wdth (ft)              10.00
  Q Gates (cfs)                          Weir Max Depth (ft)            3.73
  Q Culv (cfs)                           Weir Avg Depth (ft)            3.73
  Q Inline RC (cfs)                      Weir Flow Area (sq ft)        37.25
  Q Outlet TS (cfs)                      Weir Coef (ft^1/2)            2.600
  Q Breach (cfs)                         Weir Submerg                   0.42
  Breach Avg Velocity (ft/s)             Q Gate Group (cfs)
  Breach Flow Area (sq ft)               Gate Open Ht (ft)
  Breach WD (ft)                         Gate #Open
  Breach Top El (ft)                     Gate Area (sq ft)
  Breach Bottom El (ft)                  Gate Submerg
  Breach SSL (ft)                        Gate Invert (ft)
  Breach SSR (ft)                        Gate Weir Coef


INLINE STRUCTURE OUTPUT  Profile #2-YR  Inline Structure

  E.G. Elev (ft)               374.48    Weir Sta Lft (ft)            195.00
  W.S. Elev (ft)               374.48    Weir Sta Rgt (ft)            205.00
  Q Total (cfs)                289.00    Min El Weir Flow (ft)        369.51
  Q Weir (cfs)                 289.00    Wr Top Wdth (ft)              10.00
  Q Gates (cfs)                          Weir Max Depth (ft)            4.98
  Q Culv (cfs)                           Weir Avg Depth (ft)            4.98
  Q Inline RC (cfs)                      Weir Flow Area (sq ft)        49.81
  Q Outlet TS (cfs)                      Weir Coef (ft^1/2)            2.600
  Q Breach (cfs)                         Weir Submerg                   0.53
  Breach Avg Velocity (ft/s)             Q Gate Group (cfs)           349.17
  Breach Flow Area (sq ft)               Gate Open Ht (ft)
  Breach WD (ft)                         Gate #Open
  Breach Top El (ft)                     Gate Area (sq ft)
  Breach Bottom El (ft)                  Gate Submerg
  Breach SSL (ft)                        Gate Invert (ft)              -0.30
  Breach SSR (ft)                        Gate Weir Coef               -0.937


INLINE STRUCTURE OUTPUT  Profile #10-YR  Inline Structure

  E.G. Elev (ft)               377.92    Weir Sta Lft (ft)            195.00
  W.S. Elev (ft)               377.91    Weir Sta Rgt (ft)            205.00
  Q Total (cfs)                633.00    Min El Weir Flow (ft)        369.51
```

Q Weir (cfs)	633.00	Wr Top Wdth (ft)	10.00
Q Gates (cfs)		Weir Max Depth (ft)	8.42
Q Culv (cfs)		Weir Avg Depth (ft)	8.42
Q Inline RC (cfs)		Weir Flow Area (sq ft)	84.18
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.78
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-0.72
Breach SSR (ft)		Gate Weir Coef	-1.359

INLINE STRUCTURE OUTPUT Profile #50-YR Inline Structure

E.G. Elev (ft)	381.60	Weir Sta Lft (ft)	185.00
W.S. Elev (ft)	381.59	Weir Sta Rgt (ft)	215.00
Q Total (cfs)	1118.00	Min El Weir Flow (ft)	369.51
Q Weir (cfs)	1118.00	Wr Top Wdth (ft)	30.00
Q Gates (cfs)		Weir Max Depth (ft)	12.10
Q Culv (cfs)		Weir Avg Depth (ft)	4.43
Q Inline RC (cfs)		Weir Flow Area (sq ft)	132.93
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.75
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-1.63
Breach SSR (ft)		Gate Weir Coef	-2.271

INLINE STRUCTURE OUTPUT Profile #100-YR Inline Structure

E.G. Elev (ft)	383.00	Weir Sta Lft (ft)	185.00
W.S. Elev (ft)	382.99	Weir Sta Rgt (ft)	215.00
Q Total (cfs)	1437.00	Min El Weir Flow (ft)	369.51
Q Weir (cfs)	1437.00	Wr Top Wdth (ft)	30.00
Q Gates (cfs)		Weir Max Depth (ft)	13.50
Q Culv (cfs)		Weir Avg Depth (ft)	5.84
Q Inline RC (cfs)		Weir Flow Area (sq ft)	175.10
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.64
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-2.63
Breach SSR (ft)		Gate Weir Coef	-3.274

INLINE STRUCTURE OUTPUT Profile #200-YR Inline Structure

E.G. Elev (ft)	384.34	Weir Sta Lft (ft)	185.00
W.S. Elev (ft)	384.33	Weir Sta Rgt (ft)	215.00
Q Total (cfs)	1803.00	Min El Weir Flow (ft)	369.51
Q Weir (cfs)	1803.00	Wr Top Wdth (ft)	30.00
Q Gates (cfs)		Weir Max Depth (ft)	14.84
Q Culv (cfs)		Weir Avg Depth (ft)	7.17
Q Inline RC (cfs)		Weir Flow Area (sq ft)	215.24
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.57
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-3.24
Breach SSR (ft)		Gate Weir Coef	-3.879

CROSS SECTION

RIVER: Plumtree

REACH: Plumtree RS: 7954

INPUT
Description:
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	390.87	1.06	390.76	5.56	390.36	8.09	390.17	9.7	390.06
12.95	389.88	15.86	389.75	20.41	389.55	21.37	389.49	22.17	389.45
26.06	389.27	27.8	389.18	29.65	389.1	31.21	389.02	32.58	388.93
33.19	388.89	40.18	388.65	41.65	388.54	44.29	388.45	47.14	388.32
47.67	388.28	49.22	388.2	50.93	388.11	52.62	388	54.06	387.89
58.14	387.52	60.02	387.34	70.48	386.32	73.92	386	75.83	385.87
81.99	385.49	86.05	385.25	88.16	385.06	94.21	384.69	95.33	384.57
98.59	384.23	99.42	384.17	100.41	384	100.78	383.88	106.5	382
106.97	381.85	112.59	380	113.17	379.81	118.68	378	119.42	377.76
124.76	376	125.7	375.69	130.85	374	132.06	373.6	136.94	372
138.53	371.48	143.03	370	145.56	369.17	149.12	368	260.43	368
266.01	369.82	266.57	370	271.6	371.64	272.65	372	272.68	372.01
273.46	372.27	273.48	372.27	278.67	374	278.76	374.03	281.8	375.04
284.68	376	284.84	376.05	290.69	378	290.92	378.08	296.71	380
297	380.1	302.72	382	303.08	382.12	308.73	384	310.71	384.55
316.22	386	323.56	387.01	330.85	388	342.34	389.5	345.84	390
347.98	390.9	350.48	392	352.14	392.75	355.01	394	357.39	394.99
359.91	396	362.57	396.94	365.15	397.64	366.49	398	375.99	398.82

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	100.78	.055	136.94	.04	272.65	.055	308.73	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
136.94	272.65	154.67	153.64	151.55	.3	.5

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7800

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.23	6.4	388.77	18.95	388	32.05	387.12	34.38	386.96
40.95	386.52	41.74	386.47	42.88	386.38	48.62	386	49.93	385.92
50.74	385.86	62.21	385.1	65.97	384.84	73.9	384.32	75.81	384.2
77.92	384.08	78.06	384.07	79.37	384	79.61	383.95	79.79	383.92
79.9	383.91	81.2	383.76	81.59	383.72	81.85	383.71	82.72	383.74
88.11	383.68	89.08	383.64	89.68	383.58	90.64	383.53	91.54	383.48
92.48	383.38	93.55	383.29	96.76	383	98.06	382.88	99.04	382.78
102.88	382.37	106.07	382	112.51	380	115.15	379.12	118.51	378
121.16	377.12	124.51	376	127.17	375.11	129.44	374.36	130.51	374
133.18	373.11	136.51	372	139.19	371.11	142.51	370	148.51	368
276.07	368	278.05	368.66	280.26	369.39	282.09	370	286.43	371.44
288.11	372	292.49	373.45	294.13	374	298.56	375.47	300.15	376
304.62	377.48	306.17	378	310.69	379.5	312.19	380	316.75	381.52
318.21	382	322.82	383.53	324.23	384	331.19	385.58	333.53	386
340.6	386.91	350.42	388	352.19	388.23	353.07	388.36	356.29	388.87
360.39	389.49	361.84	389.72	363.36	390	364.77	390.43	366.25	390.85
370.11	392	372.25	392.58						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.07	.055	136.51	.04	288.11	.055	322.82	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
136.51	288.11	245.72	252.82	248.16	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7548

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.07	.78	384	5.11	383.66	7.63	383.5	11.97	383.17
14.64	382.99	17.76	382.76	24.91	382.21	27.52	382	28.85	381.83

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   29.51  381.79   32.65  381.46   35.07  381.21   46.63     380   59.52  379.12
   61.36     379   65.17  378.74   75.34  378.13   77.34  378.05   77.62     378
   83.55  378.07   85.43  378.08   88.35  378.07   95.64  378.09   99.22     378
     100  377.77  106.04     376  112.14  374.21  112.86     374  113.56  373.79
  119.68     372  120.35   371.8   126.5     370  127.14  369.81  133.32     368
  318.05     368  323.01  369.62  323.87   369.9  324.17     370  329.08   371.6
   330.3     372  335.14  373.58  336.42     374  341.21  375.57  342.54     376
  347.28  377.55  348.66     378  353.35  379.53  354.78     380  356.18  380.46
  360.91     382  362.43   382.5  367.03     384  377.97  385.33  382.29     386
  383.74  386.27  393.23     388  398.11     389  402.86     390  406.24  390.27
  406.63  390.26  409.53     390  411.75  389.85   413.2  389.77   418.1  389.46
  420.07  389.37  423.04  389.17  425.75  388.96   431.8   389.4  440.42     390
   442.9  390.41  445.97  390.94

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   99.22    .055  119.68     .04   330.3    .055  360.91    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        119.68   330.3           166.35  180.41  207.73             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7367

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.88   17.18  384.04   17.79     384   19.31  383.69   27.57     382
   33.56  381.11   40.22     380   65.41     378   74.01  375.14   77.45     374
   80.87  372.86   83.46     372   86.95  370.84   89.48     370   93.04  368.82
    95.5     368  338.44     368  350.43  371.49  352.19     372  357.36  373.51
  364.28  375.52  372.79     378  386.56  377.48  387.24  377.47  389.22  377.48
  389.83  377.49  393.84  377.67  396.67  377.79     398  377.85   399.4  377.89
  400.73  377.95  403.02     378  405.65   378.1  407.78  378.19  409.29  378.26
  410.92  378.34  413.44  378.46  417.48  378.69  420.02  378.83  428.31  379.29
   429.6  379.36  436.31  379.72  436.88  379.75  441.68     380  449.79  380.68
  452.35   380.9  458.41  381.46  460.97  381.69  464.19     382  470.57  382.96
  477.61     384  480.68  384.57  488.87     386  495.27  386.99  498.55  387.34

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   40.22    .055   83.46     .04  352.19    .055  386.56    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         83.46  352.19           131.12  150.84   173.6             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7216

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  385.75    1.08  385.65    5.95  385.32   10.54  384.89   18.99  384.19
   19.48  384.13   19.51  384.13   19.72  384.03   19.77  384.03   19.83     384
   21.34   383.6   24.22  382.82   25.18  382.55   27.46     382   33.57  381.07
   41.34  379.98   60.13     379   65.81  378.72   74.41     378   79.97   376.3
   80.96     376   81.93  375.71   87.51     374   93.22  372.26   94.06     372
   99.93  370.21  100.61     370  106.65  368.15  107.16     368  245.44     368
  252.89  368.37  261.49   368.8  261.51   368.8  267.12  369.08  285.09     370
  286.17  370.06  292.34  370.37  297.32  372.03  298.57  372.44  303.23     374
  303.43  374.06  309.23     376  309.53   376.1  315.23     378  324.96     378
  344.89  379.72  346.99   379.9  348.24     380  355.59  380.52  358.24  380.72
  369.12  381.55  372.54   381.8  375.03     382  377.33  382.49  384.79     384
  385.68   384.2  393.83     386  394.81  386.17  399.71  387.05  405.49     388
  406.42  388.18   407.5  388.41  413.63   389.1  417.54   389.6  418.61  389.74
  420.77     390   421.3  390.07  421.95  390.14  429.79  391.08  433.06  391.43
  434.12  391.56  434.45  391.61  438.52     392  445.08  392.32  449.48  392.54
  451.09  392.66

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
```

```
       0    .075   65.81    .055   94.06     .04  297.32    .055  324.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         94.06  297.32           182.85  186.42  163.53             .3       .5
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
   377.1   439.5     390       F

INLINE STRUCTURE


RIVER: Plumtree
REACH: Plumtree           RS: 7100

INPUT
Description:
Distance from Upstream XS =      44
Deck/Roadway Width        =     1.5
Weir Coefficient          =     2.6
 Weir Embankment Coordinates    num =       14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
      70     378     150     378     150     378     180     378     180     373
     210     373     210   368.5     222   368.5     222     373     252     373
     252     378     282     378     282     378     316     378

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Weir crest shape                           = Broad Crested


INLINE STRUCTURE OUTPUT  Profile #1-YR  Inline Structure

  E.G. Elev (ft)               371.06    Weir Sta Lft (ft)            210.00
  W.S. Elev (ft)               371.06    Weir Sta Rgt (ft)            222.00
  Q Total (cfs)                105.00    Min El Weir Flow (ft)        368.51
  Q Weir (cfs)                 105.00    Wr Top Wdth (ft)              12.00
  Q Gates (cfs)                          Weir Max Depth (ft)            2.56
  Q Culv (cfs)                           Weir Avg Depth (ft)            2.56
  Q Inline RC (cfs)                      Weir Flow Area (sq ft)        30.69
  Q Outlet TS (cfs)                      Weir Coef (ft^1/2)            2.600
  Q Breach (cfs)                         Weir Submerg                   0.94
  Breach Avg Velocity (ft/s)             Q Gate Group (cfs)
  Breach Flow Area (sq ft)               Gate Open Ht (ft)
  Breach WD (ft)                         Gate #Open
  Breach Top El (ft)                     Gate Area (sq ft)
  Breach Bottom El (ft)                  Gate Submerg
  Breach SSL (ft)                        Gate Invert (ft)
  Breach SSR (ft)                        Gate Weir Coef


Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, energy was used.

INLINE STRUCTURE OUTPUT  Profile #2-YR  Inline Structure

  E.G. Elev (ft)               372.14    Weir Sta Lft (ft)            210.00
  W.S. Elev (ft)               372.14    Weir Sta Rgt (ft)            222.00
  Q Total (cfs)                164.00    Min El Weir Flow (ft)        368.51
  Q Weir (cfs)                 164.00    Wr Top Wdth (ft)              12.00
  Q Gates (cfs)                          Weir Max Depth (ft)            3.64
  Q Culv (cfs)                           Weir Avg Depth (ft)            3.64
  Q Inline RC (cfs)                      Weir Flow Area (sq ft)        43.74
  Q Outlet TS (cfs)                      Weir Coef (ft^1/2)            2.600
  Q Breach (cfs)                         Weir Submerg                   0.95
  Breach Avg Velocity (ft/s)             Q Gate Group (cfs)           349.17
  Breach Flow Area (sq ft)               Gate Open Ht (ft)
  Breach WD (ft)                         Gate #Open
  Breach Top El (ft)                     Gate Area (sq ft)
  Breach Bottom El (ft)                  Gate Submerg
  Breach SSL (ft)                        Gate Invert (ft)              -0.30
  Breach SSR (ft)                        Gate Weir Coef               -0.937


Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, energy was used.

INLINE STRUCTURE OUTPUT  Profile #10-YR  Inline Structure
```

E.G. Elev (ft)	376.02	Weir Sta Lft (ft)	180.00
W.S. Elev (ft)	376.02	Weir Sta Rgt (ft)	252.00
Q Total (cfs)	347.00	Min El Weir Flow (ft)	368.51
Q Weir (cfs)	347.00	Wr Top Wdth (ft)	72.00
Q Gates (cfs)		Weir Max Depth (ft)	7.52
Q Culv (cfs)		Weir Avg Depth (ft)	3.77
Q Inline RC (cfs)		Weir Flow Area (sq ft)	271.77
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	1.00
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-0.72
Breach SSR (ft)		Gate Weir Coef	-1.359

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

INLINE STRUCTURE OUTPUT Profile #50-YR Inline Structure

E.G. Elev (ft)	378.74	Weir Sta Lft (ft)	65.42
W.S. Elev (ft)	378.74	Weir Sta Rgt (ft)	333.52
Q Total (cfs)	862.00	Min El Weir Flow (ft)	368.51
Q Weir (cfs)	862.00	Wr Top Wdth (ft)	268.10
Q Gates (cfs)		Weir Max Depth (ft)	10.24
Q Culv (cfs)		Weir Avg Depth (ft)	2.26
Q Inline RC (cfs)		Weir Flow Area (sq ft)	605.58
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.99
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-1.63
Breach SSR (ft)		Gate Weir Coef	-2.271

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

INLINE STRUCTURE OUTPUT Profile #100-YR Inline Structure

E.G. Elev (ft)	379.20	Weir Sta Lft (ft)	56.36
W.S. Elev (ft)	379.19	Weir Sta Rgt (ft)	338.82
Q Total (cfs)	1287.00	Min El Weir Flow (ft)	368.51
Q Weir (cfs)	1287.00	Wr Top Wdth (ft)	282.46
Q Gates (cfs)		Weir Max Depth (ft)	10.70
Q Culv (cfs)		Weir Avg Depth (ft)	2.59
Q Inline RC (cfs)		Weir Flow Area (sq ft)	731.52
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.99
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-2.63
Breach SSR (ft)		Gate Weir Coef	-3.274

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

INLINE STRUCTURE OUTPUT Profile #200-YR Inline Structure

E.G. Elev (ft)	379.72	Weir Sta Lft (ft)	46.26
W.S. Elev (ft)	379.72	Weir Sta Rgt (ft)	344.93
Q Total (cfs)	1699.00	Min El Weir Flow (ft)	368.51
Q Weir (cfs)	1699.00	Wr Top Wdth (ft)	298.67
Q Gates (cfs)		Weir Max Depth (ft)	11.22
Q Culv (cfs)		Weir Avg Depth (ft)	2.96
Q Inline RC (cfs)		Weir Flow Area (sq ft)	884.61
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.99

Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-3.24
Breach SSR (ft)		Gate Weir Coef	-3.879

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7030

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.29	2.41	387	10.05	386	29.45	384.45	32.78	384.15
33.33	384	36.52	383.46	40.31	382.87	43.31	382.38	46.06	382
46.12	381.98	48.59	381.84	49.64	381.82	49.97	381.8	50.4	381.79
50.62	381.77	71.01	380.53	81.91	380	92.52	379.05	103.93	378
123.79	376.72	134.74	376.11	135.07	376.05	135.57	376	135.6	375.99
136.76	376	147.1	372.58	164.01	367	255.05	367	259.75	368.48
261.56	369.06	262.29	369.29	263.48	369.67	268.09	371.12	272.1	372.39
279.83	374.83	283.53	376	309.7	376.93	312.89	376.93	319.01	378
322.75	379.67	328.88	379.92	332.16	380	333.98	380.26	345.53	382
358.26	384	368.51	385.52	371.9	386	379.53	387.21	385.4	388
395.57	389.56	398	389.92	398.64	390	402.14	390.27	406.61	390.59
410.26	390.83	412.74	390.96	415.65	391.11	416.49	391.16	419.22	391.29
423.04	391.64	423.34	391.66	427.09	392	428.37	392.13	432.56	392.47
446.6	393.09								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	135.6	.055	147.1	.04	272.1	.055	312.89	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
147.1	272.1	146.71	137.19	128.81	.3	.5

Blocked Obstructions num= 1

Sta L	Sta R	Elev
372.8	404.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6893

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.2	2.38	382.99	8.39	382.4	12.65	382	20.07	381.43
21.04	381.32	23.89	381.07	32.28	380	33.24	379.94	36.89	379.63
54.28	378.25	56.67	378	75.57	376.96	78.59	376.8	93.69	376
94.91	375.96	96.44	375.86	107.86	376	117.4	372.83	119.9	372
134.92	367	226.66	367	229.64	368	240.97	371.78	241.65	372.01
246.03	373.47	246.05	373.48	253.6	376	279.8	378.38	290.19	380
292.23	380.3	302.91	382	311	382.83	315.48	383.17	321.02	383.61
322.67	383.75	325.93	384	327.14	384.17	327.77	384.24	330.51	384.6
331.06	384.66	331.73	384.74	332.6	384.85	333.79	385.01	335.83	385.3
339.56	385.84	340.65	386	353.87	389.13	355.81	389.6	357.43	390
357.61	390.01	361.03	390.33	362.39	390.43	362.61	390.44	365.01	390.49
366.06	390.54	368.05	390.54	368.79	390.56	380.19	390.59	388.25	390.86

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	96.44	.055	119.9	.04	241.65	.055	279.8	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
119.9	241.65	120.01	126.53	128.56	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
333.6	364.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6766

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.56	7.75	380.34	9.62	380.18	11.59	380.1	27.69	379.6
34.11	379.36	42.51	378.88	44.96	378.81	50.68	378.9	55.82	378.75
59.91	378.59	69.06	378.34	72.96	378.1	76.53	377.98	77.17	377.98
78.44	377.94	85.15	377.54	107.79	376	107.82	376	118.26	372.52
134.84	367	267.4	367	272.38	368.67	272.4	368.68	278.85	370.84
284.23	372.64	293.57	375.77	294.27	376	310.54	376.12	337.65	378
341.5	378.38	344.84	378.75	345.88	378.88	348.32	378.95	351.5	379.16
353.85	379.26	354.2	379.31	358.69	379.46	365.18	379.62	366.28	379.73
367.47	380	369.55	380.4	370.86	380.58	373.19	381.02	375.37	381.31
379.99	382	390.01	384	392.8	384.16	404.5	384.66	418.06	384.49
421.86	384.5	423.36	384.56	430.23	384.62	434.86	384.68	447.58	385.29
449.06	385.3	453.71	385.19	463.39	384.68	463.96	384.68	468.82	384.87
472.42	384.83								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	85.15	.055	118.26	.04	284.23	.055	310.54	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
118.26	284.23	99.27	103.53	103.11	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
367.4	402.8	390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6663

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.81	5.71	387.58	42.61	386.42	45.32	386.36	48.81	386.32
50.39	386.29	52.99	386.11	54.86	386	63.52	384	72.4	382
77.53	381.09	78.45	381.02	81.39	381.16	82.73	381.16	83.84	381.06
85.14	381.03	90.04	380.7	91.84	380.48	94.76	380	107.44	379.41
109.18	379.29	112.44	379.13	115.99	378.92	130.42	378	130.89	377.95
160.38	376.65	180.56	376.17	184.97	375.98	189.81	375.85	195.23	375.67
199.49	375.58	204.56	375.43	221.81	372.49	254.15	367	356.77	367
359.71	368	373.17	372.51	383.57	376	391.75	376	435.14	377.35
436.73	377.48	438.03	377.5	441.59	377.71	445.02	378	461.23	380
462.22	380.21	465.24	380.76	470.16	381.69	472.06	382	479.53	383.54
481.93	384	486.28	384.27	488.32	384.35	505.54	384.31	515.18	384.49
518.45	384.46	533.6	385.11	535.47	385.12	546.46	384.34	548.83	384.3

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	204.56	.055	221.81	.04	373.17	.055	391.75	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
221.81	373.17	90.58	94.53	97.72	.3	.5

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
49.7	87.5	390	451.6	492.3	390

INLINE STRUCTURE

RIVER: Plumtree
REACH: Plumtree RS: 6600

INPUT
Description:
Distance from Upstream XS = 30
Deck/Roadway Width = 1.5
Weir Coefficient = 2.6

Weir Embankment Coordinates num = 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
180	376	245	376	245	372	285	372	285	367.5
297	367.5	297	372	337	372	337	376	395	376

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Weir crest shape = Broad Crested

INLINE STRUCTURE OUTPUT Profile #1-YR Inline Structure

E.G. Elev (ft)	370.91	Weir Sta Lft (ft)	285.00
W.S. Elev (ft)	370.91	Weir Sta Rgt (ft)	297.00
Q Total (cfs)	88.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	88.00	Wr Top Wdth (ft)	12.00
Q Gates (cfs)		Weir Max Depth (ft)	3.41
Q Culv (cfs)		Weir Avg Depth (ft)	3.41
Q Inline RC (cfs)		Weir Flow Area (sq ft)	40.91
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.99
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #2-YR Inline Structure

E.G. Elev (ft)	371.97	Weir Sta Lft (ft)	285.00
W.S. Elev (ft)	371.97	Weir Sta Rgt (ft)	297.00
Q Total (cfs)	144.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	144.00	Wr Top Wdth (ft)	12.00
Q Gates (cfs)		Weir Max Depth (ft)	4.47
Q Culv (cfs)		Weir Avg Depth (ft)	4.47
Q Inline RC (cfs)		Weir Flow Area (sq ft)	53.70
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.99
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-0.30
Breach SSR (ft)		Gate Weir Coef	-0.937

INLINE STRUCTURE OUTPUT Profile #10-YR Inline Structure

E.G. Elev (ft)	376.02	Weir Sta Lft (ft)	184.14
W.S. Elev (ft)	376.02	Weir Sta Rgt (ft)	392.26
Q Total (cfs)	289.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	289.00	Wr Top Wdth (ft)	208.12
Q Gates (cfs)		Weir Max Depth (ft)	8.52
Q Culv (cfs)		Weir Avg Depth (ft)	2.04
Q Inline RC (cfs)		Weir Flow Area (sq ft)	425.28
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	1.00
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-0.72
Breach SSR (ft)		Gate Weir Coef	-1.359

INLINE STRUCTURE OUTPUT Profile #50-YR Inline Structure

E.G. Elev (ft)	378.72	Weir Sta Lft (ft)	119.17
W.S. Elev (ft)	378.71	Weir Sta Rgt (ft)	450.83
Q Total (cfs)	778.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	778.00	Wr Top Wdth (ft)	331.66
Q Gates (cfs)		Weir Max Depth (ft)	11.22

Q Culv (cfs)		Weir Avg Depth (ft)	3.59
Q Inline RC (cfs)		Weir Flow Area (sq ft)	1189.52
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	1.00
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-1.63
Breach SSR (ft)		Gate Weir Coef	-2.271

INLINE STRUCTURE OUTPUT Profile #100-YR Inline Structure

E.G. Elev (ft)	379.16	Weir Sta Lft (ft)	111.81
W.S. Elev (ft)	379.15	Weir Sta Rgt (ft)	451.60
Q Total (cfs)	1203.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	1203.00	Wr Top Wdth (ft)	339.79
Q Gates (cfs)		Weir Max Depth (ft)	11.66
Q Culv (cfs)		Weir Avg Depth (ft)	3.94
Q Inline RC (cfs)		Weir Flow Area (sq ft)	1338.63
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	1.00
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-2.63
Breach SSR (ft)		Gate Weir Coef	-3.274

INLINE STRUCTURE OUTPUT Profile #200-YR Inline Structure

E.G. Elev (ft)	379.69	Weir Sta Lft (ft)	101.45
W.S. Elev (ft)	379.68	Weir Sta Rgt (ft)	451.60
Q Total (cfs)	1645.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	1645.00	Wr Top Wdth (ft)	350.15
Q Gates (cfs)		Weir Max Depth (ft)	12.19
Q Culv (cfs)		Weir Avg Depth (ft)	4.34
Q Inline RC (cfs)		Weir Flow Area (sq ft)	1520.56
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	1.00
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	349.17
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	-3.24
Breach SSR (ft)		Gate Weir Coef	-3.879

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6568

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.88	11.84	387.56	41.49	386.42	44.7	386.32	47.75	386.21
48.2	386.2	51.49	386.19	52.85	386.15	53.93	386.14	56.03	386.06
57.13	386	62.1	385.38	72.23	384.41	73.61	384.08	74	384
78.37	383.37	81.15	382.86	83.41	382.52	85.95	382	87.39	381.89
89.26	381.77	106.91	380.23	109.52	380.12	112.81	380	123.86	379.46
127.28	379.12	128.69	379.02	131.4	378.74	133.26	378.6	138.52	378
144.95	377.67	154.93	377.2	167.84	376.57	179.91	376	190.81	375.63
206.03	375.07	215.11	374.75	231.43	374.02	231.55	374	290	372
305	367	315	367	330	372	333.89	373.01	335.3	373.05
354.94	374.07	388	376.19	406.97	378	432.51	380	436.02	380.51
440.79	381.03	449.38	382	453.12	382.55	464.72	383.92	465.61	384
472.99	385.68	474.22	386	482.07	387.25	486.94	388	503.32	390
506.03	390.12	516.08	390.61	558.49	391.41	562.74	391.48	574.89	391.54

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .075     290     .04     330    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          290     330           112.95  114.27  115.74             .3       .5
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    56.9      70     395     480   528.4     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6454

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.74    7.58  382.41   11.61  382.36   18.35  382.85   20.37  382.77
   21.37  382.79   29.92  382.63   32.76   382.6   39.52  382.39   47.69     382
   53.79  381.37   55.59  381.15   62.67     380   71.51  378.91   77.75     378
   80.09  377.84   81.89  377.87   84.21     378   85.66  378.04   91.88  378.33
   93.96  378.47  103.28  378.95  112.28  379.59  117.21  379.85  119.53     380
  122.79  380.14  126.31  380.18  133.22     380  134.81  379.84  137.81  379.45
  141.48  378.79  145.53     378  155.89     376  166.96  373.47  173.88  373.47
  191.09  372.71     198     372     213     367     218     367     233     372
  245.49   373.6  269.36  373.99  286.75  373.99  309.85     374  325.09  374.82
  342.86  375.85  347.28  376.79   353.2     378   358.5  378.88  365.42  379.84
  366.88     380   374.5  381.38  377.36     382  383.44  382.65  394.15     384
  397.08  384.34   402.2  384.86  404.24  385.01  407.53   385.3  408.74  385.37
  414.73   385.6  419.68  385.94   428.4  386.28   432.3  386.26  436.12  386.41
  452.71  387.66  457.68     388   470.4  388.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075     198     .04     233    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          198     233           102.69  103.78  104.74             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   120.4   125.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6350

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.25    2.84  383.98    4.85  383.88   29.21  382.05   29.42     382
   31.52  381.83   32.17   381.8   32.46  381.78   34.04  381.73   35.06  381.64
   53.47   380.4   61.23     380   61.52  379.95    62.6  379.83   66.18  379.72
   67.82  379.63   68.74  379.59  124.99     378  139.11  377.29  159.11  376.32
  161.58  376.22  169.81     376  175.65  375.83  176.25  375.83     201  374.61
  220.13  373.39  226.47  371.43  230.05  370.32  235.85   369.8  238.08  367.36
  241.57  366.97   246.9  368.37  249.25  372.63  256.57  374.75  266.03   377.5
  266.59     378  329.45     378  332.13  377.82  334.24  377.69  335.82  377.59
  339.75  377.35  347.23  377.86  349.56     378  359.53  377.16  360.29  377.08
  378.66     378  382.15  378.35  383.71  378.55  386.87  378.91  388.05  379.05
   394.9     380  395.88  380.18   400.2  380.85  405.44  381.69  407.44     382
  409.21  382.33  411.05   382.5  417.68  383.44  420.21  383.65  423.51  383.96
     426  384.23  427.13   384.2  428.56   384.3  433.67  384.73  437.93  385.11
  441.27  385.38  449.14  386.13  468.97     388

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  220.13     .04  249.25    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        220.13  249.25            52.33   53.78   55.24             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   264.6   271.9     390       F
   325.6   345.5     390       F
Blocked Obstructions     num=       1
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   Sta L   Sta R    Elev
   271.9   325.6     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6296

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  386.85    5.73  386.49   14.33     386   18.53  385.51   23.71  384.86
   25.79  384.56   29.31     384   30.39   383.8   37.57  382.43   39.51  382.02
   41.76  381.69   54.85     380   70.55   379.5   94.75  378.51   95.08  378.49
   95.41  378.49   98.12  378.36   99.34  378.31  103.26   378.2  106.66  378.14
  108.29  378.08  109.53  378.06  141.16  376.68  172.07   375.5  191.67  374.94
  202.55  371.87  209.11  370.03  214.77  369.87  215.93  367.68  217.55  367.41
  219.25  367.49  221.17     369   223.1  368.24  224.71   368.4  227.95  371.85
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.77  227.95            98.47   99.02   99.58             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 6250

INPUT
Description: Hearthstone Road
Distance from Upstream XS =      41
Deck/Roadway Width        =      30
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  109.53  378.06           126.2 378.165           148.4 377.583
   171.8 377.249           194.8 377.026           219.5 377.097
   242.2 377.664           267.9 378.981           291.3 380.656
   311.7 383.135           336.6 385.512          479.75     398

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  386.85    5.73  386.49   14.33     386   18.53  385.51   23.71  384.86
   25.79  384.56   29.31     384   30.39   383.8   37.57  382.43   39.51  382.02
   41.76  381.69   54.85     380   70.55   379.5   94.75  378.51   95.08  378.49
   95.41  378.49   98.12  378.36   99.34  378.31  103.26   378.2  106.66  378.14
  108.29  378.08  109.53  378.06  141.16  376.68  172.07   375.5  191.67  374.94
  202.55  371.87  209.11  370.03  214.77  369.87  215.93  367.68  217.55  367.41
  219.25  367.49  221.17     369   223.1  368.24  224.71   368.4  227.95  371.85
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
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```
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        214.77  227.95             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

Downstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    93.6     378             109 378.165           131.9 377.583
   155.7 377.249           179.1 377.026           204.2 377.097
   227.3 377.664           253.6 378.981           277.3 380.656
   306.1 383.135           331.6 385.512          338.94     386

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.5    2.88  381.26     8.6  380.81   10.21   380.8   18.26  381.42
   23.64  381.72   28.86     382   31.26  382.04   31.91  382.04   38.99     382
   43.19   381.9    43.7  381.88   47.28  381.77   47.53  381.75   49.17   381.7
   49.49  381.68    51.7  381.59   53.73  381.49   76.26  380.56   76.87  380.53
   77.82  380.46   79.53  380.32   83.18     380   86.26  379.56   88.68  379.19
   90.12  378.97   98.61     378  127.05   376.5  131.06   376.5  161.92   376.1
  189.14  374.65  197.54  369.94  197.55  369.93  203.42  366.64  221.43  366.39
  225.24  370.02  227.55  372.22  227.56  372.23  229.54   374.1  255.33   377.5
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        197.54  225.24             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5   372.5       F
   229.3  443.14   372.5       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               24.8   62.23     .013     .013        0                   .5                1
Upstream   Elevation =  367.33
           Centerline Station =  217
Downstream Elevation =  367.76
           Centerline Station =  210
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Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              24.8   62.41     .013     .013        0                  .5                1
Upstream   Elevation =  367.28
           Centerline Station =  223
Downstream Elevation =  366.19
           Centerline Station =  215
```

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	38.16	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.02
Q Barrel (cfs)	38.16	Culv Vel DS (ft/s)	6.61
E.G. US. (ft)	370.53	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	370.29	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	369.66	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	369.63	Culv Exit Loss (ft)	0.65
Delta EG (ft)	0.87	Culv Entr Loss (ft)	0.13
Delta WS (ft)	0.66	Q Weir (cfs)	
E.G. IC (ft)	369.98	Weir Sta Lft (ft)	
E.G. OC (ft)	370.53	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	370.16	Weir Max Depth (ft)	
Culv WS Outlet (ft)	369.63	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.84	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	66.68	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.58
Q Barrel (cfs)	66.68	Culv Vel DS (ft/s)	7.71
E.G. US. (ft)	371.66	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	371.48	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	370.40	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	370.36	Culv Exit Loss (ft)	0.88
Delta EG (ft)	1.26	Culv Entr Loss (ft)	0.24
Delta WS (ft)	1.12	Q Weir (cfs)	
E.G. IC (ft)	371.13	Weir Sta Lft (ft)	
E.G. OC (ft)	371.67	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	370.95	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.36	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.47	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	153.49	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.21
Q Barrel (cfs)	153.49	Culv Vel DS (ft/s)	12.21
E.G. US. (ft)	375.97	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	375.91	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	371.87	Culv Frctn Ls (ft)	0.71
W.S. DS (ft)	371.78	Culv Exit Loss (ft)	2.23
Delta EG (ft)	4.10	Culv Entr Loss (ft)	1.16
Delta WS (ft)	4.13	Q Weir (cfs)	
E.G. IC (ft)	375.96	Weir Sta Lft (ft)	
E.G. OC (ft)	375.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.62	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	162.58	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.94
Q Barrel (cfs)	162.58	Culv Vel DS (ft/s)	12.94
E.G. US. (ft)	378.67	Culv Inv El Up (ft)	367.33

W.S. US. (ft)	378.57	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	374.22	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	373.96	Culv Exit Loss (ft)	2.35
Delta EG (ft)	4.45	Culv Entr Loss (ft)	1.30
Delta WS (ft)	4.60	Q Weir (cfs)	472.71
E.G. IC (ft)	376.69	Weir Sta Lft (ft)	92.09
E.G. OC (ft)	378.66	Weir Sta Rgt (ft)	257.35
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	1.59
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.01
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	167.65
Culv Crt Depth (ft)	3.68	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	155.33	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.36
Q Barrel (cfs)	155.33	Culv Vel DS (ft/s)	12.36
E.G. US. (ft)	379.08	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	378.91	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	375.19	Culv Frctn Ls (ft)	0.73
W.S. DS (ft)	374.78	Culv Exit Loss (ft)	1.97
Delta EG (ft)	3.89	Culv Entr Loss (ft)	1.19
Delta WS (ft)	4.13	Q Weir (cfs)	823.16
E.G. IC (ft)	376.10	Weir Sta Lft (ft)	80.20
E.G. OC (ft)	379.07	Weir Sta Rgt (ft)	269.63
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.08
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.34
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	253.37
Culv Crt Depth (ft)	3.64	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	148.65	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.83
Q Barrel (cfs)	148.65	Culv Vel DS (ft/s)	11.83
E.G. US. (ft)	379.55	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.28	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.22	Culv Frctn Ls (ft)	0.67
W.S. DS (ft)	375.62	Culv Exit Loss (ft)	1.57
Delta EG (ft)	3.33	Culv Entr Loss (ft)	1.09
Delta WS (ft)	3.67	Q Weir (cfs)	1264.52
E.G. IC (ft)	375.59	Weir Sta Lft (ft)	67.79
E.G. OC (ft)	379.55	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.56
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.67
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	349.37
Culv Crt Depth (ft)	3.59	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	53.84	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.58
Q Barrel (cfs)	53.84	Culv Vel DS (ft/s)	4.68
E.G. US. (ft)	370.53	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	370.29	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	369.66	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	369.63	Culv Exit Loss (ft)	0.31
Delta EG (ft)	0.87	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.66	Q Weir (cfs)	
E.G. IC (ft)	370.52	Weir Sta Lft (ft)	
E.G. OC (ft)	370.82	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	369.49	Weir Max Depth (ft)	
Culv WS Outlet (ft)	369.63	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.45	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.21	Min El Weir Flow (ft)	377.04

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	82.32	Culv Full Len (ft)	11.94

# Barrels	1	Culv Vel US (ft/s)	8.94
Q Barrel (cfs)	82.32	Culv Vel DS (ft/s)	6.55
E.G. US. (ft)	371.66	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	371.48	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	370.40	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	370.36	Culv Exit Loss (ft)	0.62
Delta EG (ft)	1.26	Culv Entr Loss (ft)	0.39
Delta WS (ft)	1.12	Q Weir (cfs)	
E.G. IC (ft)	371.66	Weir Sta Lft (ft)	
E.G. OC (ft)	371.89	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	370.03	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.84	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.75	Min El Weir Flow (ft)	377.04

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	153.51	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.22
Q Barrel (cfs)	153.51	Culv Vel DS (ft/s)	12.22
E.G. US. (ft)	375.97	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	375.91	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	371.87	Culv Frctn Ls (ft)	0.71
W.S. DS (ft)	371.78	Culv Exit Loss (ft)	2.23
Delta EG (ft)	4.10	Culv Entr Loss (ft)	1.16
Delta WS (ft)	4.13	Q Weir (cfs)	
E.G. IC (ft)	375.86	Weir Sta Lft (ft)	
E.G. OC (ft)	375.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.62	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	162.71	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.95
Q Barrel (cfs)	162.71	Culv Vel DS (ft/s)	12.95
E.G. US. (ft)	378.67	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.57	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	374.22	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	373.96	Culv Exit Loss (ft)	2.35
Delta EG (ft)	4.45	Culv Entr Loss (ft)	1.30
Delta WS (ft)	4.60	Q Weir (cfs)	472.71
E.G. IC (ft)	376.60	Weir Sta Lft (ft)	92.09
E.G. OC (ft)	378.67	Weir Sta Rgt (ft)	257.35
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	1.59
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.01
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	167.65
Culv Crt Depth (ft)	3.68	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	155.50	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.37
Q Barrel (cfs)	155.50	Culv Vel DS (ft/s)	12.37
E.G. US. (ft)	379.08	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.91	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	375.19	Culv Frctn Ls (ft)	0.73
W.S. DS (ft)	374.78	Culv Exit Loss (ft)	1.97
Delta EG (ft)	3.89	Culv Entr Loss (ft)	1.19
Delta WS (ft)	4.13	Q Weir (cfs)	823.16
E.G. IC (ft)	376.02	Weir Sta Lft (ft)	80.20
E.G. OC (ft)	379.08	Weir Sta Rgt (ft)	269.63
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.08
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.34
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	253.37
Culv Crt Depth (ft)	3.64	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	148.84	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.84
Q Barrel (cfs)	148.84	Culv Vel DS (ft/s)	11.84
E.G. US. (ft)	379.55	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.28	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.22	Culv Frctn Ls (ft)	0.67
W.S. DS (ft)	375.62	Culv Exit Loss (ft)	1.57
Delta EG (ft)	3.33	Culv Entr Loss (ft)	1.09
Delta WS (ft)	3.67	Q Weir (cfs)	1264.52
E.G. IC (ft)	375.51	Weir Sta Lft (ft)	67.79
E.G. OC (ft)	379.56	Weir Sta Rgt (ft)	276.38
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.56
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.67
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	349.37
Culv Crt Depth (ft)	3.59	Min El Weir Flow (ft)	377.04

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6197

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39
225.24	370.02	227.55	372.22	227.56	372.23	229.54	374.1	255.33	377.5
286.19	380.21	290.61	381.26	291.85	381.66	302.93	382	306.38	382.34
307.8	382.5	315.82	383.3	321.82	384	332.19	385.15	338.94	386
354.08	387.58	358.3	388	361.22	388.32	364.98	388.73	371.17	389.42
376.5	390	377.44	390.09	382.23	390.53	383.73	390.65	389.09	391.12
395.34	391.57	396	391.63	401.1	392	405.04	392.54	406.26	392.72
413.74	394	418.95	394.57	420.55	394.73	421.65	394.84	427.34	395.45
432.93	395.77	433.17	395.8	434.1	395.89	438.66	396.46	441.16	396.79
443.14	397.11								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	197.54	.04	225.24	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.54	225.24	75.78	74.81	73.83	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	180.5	372.5	F
229.3	443.14	372.5	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
23.7	63.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6122

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.69	8.11	379.53	9.53	379.45	17.27	379.23	20.32	379.02
22.13	378.95	24.3	378.81	31.57	378.41	34.72	378.26	38.27	378.14
47.27	377.96	49.2	377.94	52.81	377.79	56.11	377.88	60.11	377.91
62.59	377.87	64.37	377.81	65.09	377.76	66.54	377.7	67.14	377.65
68.62	377.58	71.62	377.27	75.62	376.99	79.3	376.57	81.7	376.35
84.46	376	105.56	374.69	108.26	374.67	121.47	375.38	123.91	375.3
125.19	375.41	127.48	375.55	129.74	375.66	131.98	375.57	134.89	375.74
137.16	375.81	137.87	375.78	140.09	375.81	142.39	375.77	145.17	375.64

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     148  375.41   151.1  375.05  154.75  374.52  159.06  373.88  159.11  374.24
   175.4  373.46  185.87  373.46  213.06  372.27  225.58  370.42  231.74  369.51
  232.66  367.04  234.89  366.62  240.64  367.46   244.1  370.65  253.02  370.54
  255.64  371.33  278.66  378.25  302.77  378.97  352.21     380   359.2  381.14
  364.26     382  367.65   382.7  370.16  383.19  373.86     384  378.45  385.21
  381.62     386  383.59  386.52  388.85     388  390.89  388.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  225.58     .04   244.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        225.58   244.1            98.18   94.21   91.92             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
   119.8   162.9     385       F
   185.6   201.5     385       F
   272.4   384.9     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   162.9   185.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6028

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   382.8   19.58  382.41   21.78  382.31   25.29     382   28.82  381.21
   33.73     380   38.53  378.96   47.92  377.02   53.08     376   53.61  375.96
   54.06  375.94    63.8  375.32   75.35  374.08   75.77     374   75.87     374
   79.55   373.5   79.83  373.47   80.44  373.45   80.74   373.5   108.3  372.93
  132.26  372.05  132.53     372  152.08     371  183.23  368.87  204.31   368.6
  204.32   368.6   205.1  368.59  214.72  368.32  216.43  366.61  219.36  365.53
  223.23  366.03  225.53  367.69  234.47  368.82  242.06  369.78  266.05  372.16
  283.38  373.66  295.75  374.49  302.61  375.35  306.21  375.74  307.44   375.9
  308.45     376  309.16  376.16  309.43  376.21  312.19  376.42  326.29  377.09
  336.37  377.85  338.16     378  343.77  379.27  346.84     380  352.57  381.65
  353.72     382  360.42     384  366.91     386  373.75     388  374.25  388.15
  375.39  388.44  376.82  388.77   382.2     390  385.62  390.91   387.5  391.38
  390.05     392  391.18  392.24  393.51   392.7  394.79  392.94   395.7  393.09
  396.68  393.28  398.05   393.5  400.71     394  401.05  394.02  401.31  394.02
  401.89  394.05  402.27  394.05  404.67  394.17

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.72     .04  234.47    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.72  234.47           100.93  101.91  101.19             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
      61   113.9     390       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    19.7      61     390   393.1  404.67     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5926

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.59     5.1     382     9.3  381.27   15.23  380.26   16.79     380
    17.4  379.93   17.99  379.89   25.61  379.19   28.72  378.92   41.87  378.06
   42.14  378.04   42.69  378.01    42.8     378   47.15  377.66   50.35  377.44
   52.95  377.29   54.78  377.18   55.85  377.13   57.24  377.07   58.56  376.99
   61.22   376.9    62.6   376.8   64.49  376.66    65.4  376.61   68.93  376.32
   69.43  376.28   72.62     376   79.17  375.23   79.85  375.13   81.75  374.86
   86.54  374.13    86.9  374.08   87.35     374   97.43   372.6  101.22     372
  101.71  371.98  102.49  371.97  103.31  371.98  103.65     372   103.7  371.95
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  108.23  371.29  120.13  371.02  124.98  371.02  148.13   370.3   170.6  369.08
  174.12  367.61  175.06  367.22  180.45  367.62  186.44  367.24   187.3  365.38
  189.41  365.46  192.74  365.89  197.28  368.62  204.41  369.15  222.38  370.47
  248.76  371.19     255     372  274.29   373.9  275.14     374  287.23     376
  292.49  377.34  295.11     378  299.87  379.19  303.25     380  311.49     382
  318.69  383.66  320.08     384  327.45  385.84  328.11     386  335.19  387.48
  337.59     388  343.86  388.94  350.88     390  354.59  390.61   356.8  390.96

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.44     .04  197.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.44  197.28           102.11  102.54  102.93             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    60.6    75.4     385       F
   103.4   163.4     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    75.4   103.4     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5824

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.17    1.53  379.09    3.56  378.96    5.73   378.8    8.65  378.57
   10.86   378.4   11.67  378.34   15.69     378   20.08  377.29   27.83     376
   29.81  375.82   31.38  375.67   39.63  374.92   42.87  374.63   44.59   374.5
   49.91     374   62.23  371.55   92.34  370.63  109.26   369.2  110.94  369.06
  120.72  365.29  124.37  365.08  126.51  365.24  130.92  367.14  139.51  368.75
  157.36   372.1  180.06  370.47  190.05  370.47  216.33     372  219.38  372.57
  223.55  373.34  225.27  373.66  227.19     374  231.58  375.26  234.22     376
  234.79  376.18  240.58     378  243.82  379.15  246.06     380  248.42  380.86
  251.63     382  257.95  383.86   258.4     384  260.44   384.5  266.77     386
  268.22  386.33  275.61     388  278.96   388.7   285.3     390  291.48  391.05
  292.67  391.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  109.26     .04  139.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        109.26  139.51            75.62   79.21   82.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5745

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     380    15.5  378.48   20.71     378    30.8  377.15   37.79  376.64
    40.3  376.44   46.11  376.04   46.38     376    47.1  375.96   69.11     374
    77.1  373.47  103.89  370.86  131.17   369.6  133.12  368.74  140.37  365.55
  143.61     365  144.73  363.71  148.48  363.03  150.47  363.33   159.4  368.15
  163.52  368.56  176.34  369.82  186.31   370.3  194.64  373.03  209.12  373.26
  225.27  372.55   225.6  372.55  225.92  372.54  226.18  372.55   226.7  372.55
   233.5  372.96   233.9  372.98  234.19     373  234.39     373  234.53  373.01
  234.67  373.01  234.83  373.02  242.93  373.56  243.64  373.58  246.98  373.68
  250.97   373.8  257.66     374  263.52  375.65  264.76     376  265.45  376.19
  271.67     378     272  378.09  278.61     380  283.25  381.15  286.54     382
  296.07  383.94  296.19  383.96  296.34     384  296.53  384.04  296.57  384.04
  296.61  384.05  296.75  384.07  297.08  384.12   302.2  384.91  306.31  385.41
  307.97  385.64  308.53  385.72  311.26     386  312.97  386.11  313.27  386.13
   317.7  386.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  131.17     .04   159.4    .075
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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        131.17   159.4            34.07   34.02   34.04             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   170.3   207.9     385       F
   225.8   247.8     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   207.9   225.8     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5711

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.06  162.62            96.24   96.18   98.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5650

INPUT
Description: Brookemede Road
Distance from Upstream XS =      37
Deck/Roadway Width        =      37
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     101 372.301             151 370.157             188 369.953
   218.7 370.181

Upstream Bridge Cross Section Data
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
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  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        136.06  162.62             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  128.33  372.41           152.3 372.301           202.9 370.157
   238.6 369.953           268.9 370.181

Downstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  375.09    1.07  375.04    1.94  375.04    2.62  375.01    3.78  375.02
       5  374.95    6.16  374.97   13.83   374.5   15.25  374.52   31.31  375.33
   32.18  375.35   39.66   374.3   45.41  373.86   50.93  373.59   53.48  373.55
   59.91  373.31    62.6  373.32   81.57  373.51   85.54  373.44   92.18  373.21
   98.33  373.03  102.35  373.09  105.39  372.98  113.27  372.64  128.33  372.41
  164.68   369.2  190.47  367.33  202.12  366.92  205.34  366.81  210.08   364.6
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        205.34   238.7             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8  369.95       F
     239   440.9  369.95       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  361.93
           Centerline Station =  148
Downstream Elevation =  362.09
           Centerline Station =  215

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
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Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	15	62.66	.013	.013	0	.5	1

Upstream Elevation = 362.32
Centerline Station = 153
Downstream Elevation = 362.32
Centerline Station = 220

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	48.73	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.24
Q Barrel (cfs)	48.73	Culv Vel DS (ft/s)	4.58
E.G. US. (ft)	365.77	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	365.64	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	365.29	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	365.25	Culv Exit Loss (ft)	0.28
Delta EG (ft)	0.48	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.39	Q Weir (cfs)	
E.G. IC (ft)	365.01	Weir Sta Lft (ft)	
E.G. OC (ft)	365.79	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	365.37	Weir Max Depth (ft)	
Culv WS Outlet (ft)	365.25	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.09	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	74.89	Culv Full Len (ft)	58.97
# Barrels	1	Culv Vel US (ft/s)	5.96
Q Barrel (cfs)	74.89	Culv Vel DS (ft/s)	5.97
E.G. US. (ft)	367.06	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	366.95	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	366.11	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	366.05	Culv Exit Loss (ft)	0.49
Delta EG (ft)	0.95	Culv Entr Loss (ft)	0.28
Delta WS (ft)	0.90	Q Weir (cfs)	
E.G. IC (ft)	366.05	Weir Sta Lft (ft)	
E.G. OC (ft)	367.07	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.05	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.62	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	130.15	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	10.36
Q Barrel (cfs)	130.15	Culv Vel DS (ft/s)	10.36
E.G. US. (ft)	370.64	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	370.59	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	367.74	Culv Frctn Ls (ft)	0.51
W.S. DS (ft)	367.64	Culv Exit Loss (ft)	1.57
Delta EG (ft)	2.91	Culv Entr Loss (ft)	0.83
Delta WS (ft)	2.95	Q Weir (cfs)	47.33
E.G. IC (ft)	368.88	Weir Sta Lft (ft)	139.64
E.G. OC (ft)	370.66	Weir Sta Rgt (ft)	190.37
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	0.69
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	0.49
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	25.03
Culv Crt Depth (ft)	3.41	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	59.85	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.76
Q Barrel (cfs)	59.85	Culv Vel DS (ft/s)	4.76
E.G. US. (ft)	372.59	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.43	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	372.02	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	371.96	Culv Exit Loss (ft)	0.30
Delta EG (ft)	0.57	Culv Entr Loss (ft)	0.18
Delta WS (ft)	0.47	Q Weir (cfs)	679.71
E.G. IC (ft)	365.45	Weir Sta Lft (ft)	87.78

E.G. OC (ft)	372.60	Weir Sta Rgt (ft)	254.06
Culvert Control	Outlet	Weir Submerg	0.63
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	2.63
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.29
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	198.56
Culv Crt Depth (ft)	2.33	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	58.52	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.66
Q Barrel (cfs)	58.52	Culv Vel DS (ft/s)	4.66
E.G. US. (ft)	373.05	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.80	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	372.55	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.46	Culv Exit Loss (ft)	0.25
Delta EG (ft)	0.51	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.35	Q Weir (cfs)	1018.25
E.G. IC (ft)	365.40	Weir Sta Lft (ft)	79.25
E.G. OC (ft)	373.07	Weir Sta Rgt (ft)	256.34
Culvert Control	Outlet	Weir Submerg	0.69
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.11
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.57
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	277.07
Culv Crt Depth (ft)	2.30	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	56.59	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.50
Q Barrel (cfs)	56.59	Culv Vel DS (ft/s)	4.50
E.G. US. (ft)	373.57	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.17	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.14	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	373.01	Culv Exit Loss (ft)	0.18
Delta EG (ft)	0.43	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.17	Q Weir (cfs)	1450.13
E.G. IC (ft)	365.32	Weir Sta Lft (ft)	71.22
E.G. OC (ft)	373.58	Weir Sta Rgt (ft)	258.70
Culvert Control	Outlet	Weir Submerg	0.76
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.60
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.95
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	366.37
Culv Crt Depth (ft)	2.26	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	43.27	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.26
Q Barrel (cfs)	43.27	Culv Vel DS (ft/s)	4.39
E.G. US. (ft)	365.77	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	365.64	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	365.29	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	365.25	Culv Exit Loss (ft)	0.26
Delta EG (ft)	0.48	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.39	Q Weir (cfs)	
E.G. IC (ft)	365.17	Weir Sta Lft (ft)	
E.G. OC (ft)	365.76	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	365.34	Weir Max Depth (ft)	
Culv WS Outlet (ft)	365.25	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.97	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	74.11	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.94
Q Barrel (cfs)	74.11	Culv Vel DS (ft/s)	6.07
E.G. US. (ft)	367.06	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	366.95	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	366.11	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	366.05	Culv Exit Loss (ft)	0.51
Delta EG (ft)	0.95	Culv Entr Loss (ft)	0.27
Delta WS (ft)	0.90	Q Weir (cfs)	

E.G. IC (ft)	366.40	Weir Sta Lft (ft)	
E.G. OC (ft)	367.04	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.22	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.05	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.61	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	129.53	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	10.31
Q Barrel (cfs)	129.53	Culv Vel DS (ft/s)	10.31
E.G. US. (ft)	370.64	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	370.59	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	367.74	Culv Frctn Ls (ft)	0.51
W.S. DS (ft)	367.64	Culv Exit Loss (ft)	1.56
Delta EG (ft)	2.91	Culv Entr Loss (ft)	0.83
Delta WS (ft)	2.95	Q Weir (cfs)	47.33
E.G. IC (ft)	369.23	Weir Sta Lft (ft)	139.64
E.G. OC (ft)	370.63	Weir Sta Rgt (ft)	190.37
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	0.69
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	0.49
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	25.03
Culv Crt Depth (ft)	3.41	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	58.44	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.65
Q Barrel (cfs)	58.44	Culv Vel DS (ft/s)	4.65
E.G. US. (ft)	372.59	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.43	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	372.02	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	371.96	Culv Exit Loss (ft)	0.28
Delta EG (ft)	0.57	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.47	Q Weir (cfs)	679.71
E.G. IC (ft)	365.78	Weir Sta Lft (ft)	87.78
E.G. OC (ft)	372.57	Weir Sta Rgt (ft)	254.06
Culvert Control	Outlet	Weir Submerg	0.63
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	2.63
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.29
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	198.56
Culv Crt Depth (ft)	2.30	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	57.23	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.55
Q Barrel (cfs)	57.23	Culv Vel DS (ft/s)	4.55
E.G. US. (ft)	373.05	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.80	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	372.55	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.46	Culv Exit Loss (ft)	0.23
Delta EG (ft)	0.51	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.35	Q Weir (cfs)	1018.25
E.G. IC (ft)	365.73	Weir Sta Lft (ft)	79.25
E.G. OC (ft)	373.04	Weir Sta Rgt (ft)	256.34
Culvert Control	Outlet	Weir Submerg	0.69
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.11
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.57
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	277.07
Culv Crt Depth (ft)	2.28	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	55.28	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.40
Q Barrel (cfs)	55.28	Culv Vel DS (ft/s)	4.40
E.G. US. (ft)	373.57	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.17	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.14	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.01	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.43	Culv Entr Loss (ft)	0.15

Delta WS (ft)	0.17	Q Weir (cfs)	1450.13
E.G. IC (ft)	365.66	Weir Sta Lft (ft)	71.22
E.G. OC (ft)	373.55	Weir Sta Rgt (ft)	258.70
Culvert Control	Outlet	Weir Submerg	0.76
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.60
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.95
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	366.37
Culv Crt Depth (ft)	2.24	Min El Weir Flow (ft)	369.97

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5614

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	375.09	1.07	375.04	1.94	375.04	2.62	375.01	3.78	375.02
5	374.95	6.16	374.97	13.83	374.5	15.25	374.52	31.31	375.33
32.18	375.35	39.66	374.3	45.41	373.86	50.93	373.59	53.48	373.55
59.91	373.31	62.6	373.32	81.57	373.51	85.54	373.44	92.18	373.21
98.33	373.03	102.35	373.09	105.39	372.98	113.27	372.64	128.33	372.41
164.68	369.2	190.47	367.33	202.12	366.92	205.34	366.81	210.08	364.6
211.22	364.43	215.09	361.81	217.13	362.04	229.59	362.98	238.7	368.44
238.98	368.61	251.44	369.69	268.94	370.18	285.07	369.62	290.27	370.06
298.37	370.04	306.37	370.28	324.69	371.75	335.39	372	342.38	373.55
344.58	374	353.22	376	364.13	378	366.42	378.31	380.54	380.03
386.38	380.25	391.69	380.39	399.18	380.94	403.65	381.15	406.06	381.34
407.91	381.42	410.66	381.64	411.73	381.67	415.82	382	420.24	382.3
421.1	382.39	423.89	382.58	424.39	382.64	428.52	382.91	431.83	383.32
435.07	383.79	435.47	383.82	436.48	384	438.12	384.43	440.9	385.22

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	205.34	.04	238.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
205.34	238.7	60.47	54.67	45.26	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	193.8	369.95	F
239	440.9	369.95	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
72.7	102.2	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5560

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.71	12.44	380.66	20.28	380.48	30.01	380.06	32.55	380
35.14	379.9	40.44	379.76	66.9	378.85	77.73	378.19	86.8	377.53
106.28	376	135.5	374	137.27	373.83	145.55	373.21	146.86	373.14
152.29	373.03	158.19	372.73	169.54	372.53	171.14	372.42	174.7	372
177.92	371.83	200.19	370.97	216.51	371.11	224.54	370.88	233.81	370.74
237.26	370.65	249.92	370	272.36	369.5	305.11	368.25	330.75	367.7
351.63	367.26	351.64	367.26	352.8	367.24	361.62	364.64	365.14	363.68
366.63	362.08	370.12	362.09	377.69	362.11	381.2	366.86	381.86	366.92
381.88	366.92	400.75	368.4	415.84	369.84	428.22	370.13	441.48	370.08
454.62	370.47	468.56	371.58	474.03	371.79	478.41	372	486.49	373.21
492.4	374	496.8	374.72	506.14	376	510.13	376.65	519.35	378
525.84	378.52	527.4	378.56	530.32	378.74	538.47	379.03	541.22	379.02
541.91	379.05	543.2	379.02	545.47	379.17	545.81	379.17	552.05	379.68
557.2	380.19	563.37	380.95	569.96	382	577.27	384	584.9	386

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	352.8	.04	381.2	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.

```
         352.8   381.2            56.62   49.74    41.3             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5510

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        251.67  273.96            36.56   36.42   38.18             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 5500

INPUT
Description: Driveway
Distance from Upstream XS =    8.75
Deck/Roadway Width        =    11.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     245     368           246.3 368.296           251.7 369.922 368.922
   261.7 369.925 368.925   272.1 369.867 368.867   278.5 368.291
     281   367.8

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        251.67  273.96            .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  218.37  367.75           222.9 368.709           228.8 369.891 368.891
   238.9 369.925 368.925     248 369.959 368.959   254.6 368.591
  256.61  368.13

Downstream Bridge Cross Section Data
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.2    5.49  380.43   19.15  378.55   22.99     378   24.44  377.87
    27.6  377.66   28.15  377.66   32.08  377.85   34.11  377.81   34.84  377.86
   36.16  377.76    36.5  377.71   36.95   377.6   37.24  377.63   37.53  377.55
   43.71  377.04   44.96  377.01   53.85  377.19   61.96  376.88   69.36  376.67
    78.2  376.53   80.32  376.46   85.59  376.16   86.54  376.08   87.13     376
   96.16     374  106.12     372  115.26     370  135.49  369.25  142.97   369.5
  155.72     370  160.13  369.38  160.65  369.34  161.19  369.38  161.22  369.44
  161.24  368.96  165.72  368.71  205.57  368.19  226.91  367.45  227.84  367.41
  239.06  361.76  241.96   361.6  245.76  361.52  251.97  367.85  256.98  368.15
  272.47  369.07  292.37  370.16  313.15  370.81  318.99   371.3  321.33   371.4
  339.22  371.96  340.43     372  349.15  373.24   355.3     374  368.27  375.86
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        227.84  251.97            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line
```

BRIDGE OUTPUT Profile #1-YR

E.G. US. (ft)	365.09	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	364.83	E.G. Elev (ft)	365.01	364.87
Q Total (cfs)	92.00	W.S. Elev (ft)	364.71	364.76
Q Bridge (cfs)	92.00	Crit W.S. (ft)	364.18	363.23
Q Weir (cfs)		Max Chl Dpth (ft)	2.55	3.24
Weir Sta Lft (ft)		Vel Total (ft/s)	4.42	2.64
Weir Sta Rgt (ft)		Flow Area (sq ft)	20.80	34.80
Weir Submerg		Froude # Chl	0.61	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	32.93	55.25
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	1.61	2.33
Min El Prs (ft)	368.93	W.P. Total (ft)	14.40	17.55
Delta EG (ft)	0.26	Conv. Total (cfs)	987.0	2039.9
Delta WS (ft)	0.10	Top Width (ft)	12.89	14.92
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.03
BR Open Vel (ft/s)	4.42	C & E Loss (ft)	0.10	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.78	0.25
BR Sel Method	Energy only	Power Total (lb/ft s)	3.46	0.67

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	365.90	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	365.59	E.G. Elev (ft)	365.83	365.70
Q Total (cfs)	149.00	W.S. Elev (ft)	365.49	365.54
Q Bridge (cfs)	149.00	Crit W.S. (ft)	364.70	363.75
Q Weir (cfs)		Max Chl Dpth (ft)	3.33	4.02
Weir Sta Lft (ft)		Vel Total (ft/s)	4.68	3.17
Weir Sta Rgt (ft)		Flow Area (sq ft)	31.86	47.01
Weir Submerg		Froude # Chl	0.57	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	62.47	94.11
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.08	2.85
Min El Prs (ft)	368.93	W.P. Total (ft)	17.33	20.06
Delta EG (ft)	0.24	Conv. Total (cfs)	1775.8	3080.9
Delta WS (ft)	0.08	Top Width (ft)	15.30	16.47
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	4.68	C & E Loss (ft)	0.09	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.81	0.34
BR Sel Method	Energy only	Power Total (lb/ft s)	3.78	1.08

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	367.53	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	367.13	E.G. Elev (ft)	367.47	367.33
Q Total (cfs)	307.00	W.S. Elev (ft)	367.03	367.07
Q Bridge (cfs)	307.00	Crit W.S. (ft)	365.76	364.80
Q Weir (cfs)		Max Chl Dpth (ft)	4.87	5.55
Weir Sta Lft (ft)		Vel Total (ft/s)	5.30	4.12
Weir Sta Rgt (ft)		Flow Area (sq ft)	57.92	74.46
Weir Submerg		Froude # Chl	0.42	0.31
Weir Max Depth (ft)		Specif Force (cu ft)	159.72	211.01
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.11	3.87
Min El Prs (ft)	368.93	W.P. Total (ft)	22.50	24.81
Delta EG (ft)	0.25	Conv. Total (cfs)	4041.8	5755.0
Delta WS (ft)	0.09	Top Width (ft)	18.60	19.22
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.05	0.04
BR Open Vel (ft/s)	5.30	C & E Loss (ft)	0.09	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.93	0.53
BR Sel Method	Energy only	Power Total (lb/ft s)	4.91	2.20

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	371.98	Element		
W.S. US. (ft)	371.88	E.G. Elev (ft)	371.95	371.93
Q Total (cfs)	798.00	W.S. Elev (ft)	371.90	371.88
Q Bridge (cfs)	225.00	Crit W.S. (ft)	367.83	366.96
Q Weir (cfs)		Max Chl Dpth (ft)	9.74	10.36
Weir Sta Lft (ft)		Vel Total (ft/s)	1.61	1.51
Weir Sta Rgt (ft)		Flow Area (sq ft)	494.64	529.68
Weir Submerg		Froude # Chl	0.10	0.10
Weir Max Depth (ft)		Specif Force (cu ft)	1095.65	1259.49
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.64	2.72
Min El Prs (ft)	368.93	W.P. Total (ft)	236.22	250.60
Delta EG (ft)	0.07	Conv. Total (cfs)	19972.1	22233.5
Delta WS (ft)	0.06	Top Width (ft)	239.89	194.64
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.01
BR Open Vel (ft/s)	2.36	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.21	0.17
BR Sel Method	Energy only	Power Total (lb/ft s)	0.34	0.26

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.48	Element		
W.S. US. (ft)	372.34	E.G. Elev (ft)	372.44	372.41
Q Total (cfs)	1134.00	W.S. Elev (ft)	372.36	372.34
Q Bridge (cfs)	253.31	Crit W.S. (ft)	369.92	368.07
Q Weir (cfs)		Max Chl Dpth (ft)	10.20	10.82
Weir Sta Lft (ft)		Vel Total (ft/s)	1.94	1.82
Weir Sta Rgt (ft)		Flow Area (sq ft)	584.97	622.36
Weir Submerg		Froude # Chl	0.12	0.11
Weir Max Depth (ft)		Specif Force (cu ft)	1377.81	1555.08
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.98	3.07
Min El Prs (ft)	368.93	W.P. Total (ft)	245.18	260.01
Delta EG (ft)	0.10	Conv. Total (cfs)	25156.5	27564.3
Delta WS (ft)	0.09	Top Width (ft)	248.79	203.05
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.02
BR Open Vel (ft/s)	2.65	C & E Loss (ft)	0.00	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.30	0.25
BR Sel Method	Energy only	Power Total (lb/ft s)	0.59	0.46

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #200-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.05	Element		
W.S. US. (ft)	372.86	E.G. Elev (ft)	372.99	372.96
Q Total (cfs)	1562.00	W.S. Elev (ft)	372.89	372.87
Q Bridge (cfs)	274.06	Crit W.S. (ft)	370.58	370.28
Q Weir (cfs)		Max Chl Dpth (ft)	10.73	11.35
Weir Sta Lft (ft)		Vel Total (ft/s)	2.26	2.14

Weir Sta Rgt (ft)		Flow Area (sq ft)	690.64	730.36
Weir Submerg		Froude # Chl	0.13	0.12
Weir Max Depth (ft)		Specif Force (cu ft)	1756.83	1950.58
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.39	3.49
Min El Prs (ft)	368.93	W.P. Total (ft)	252.74	267.44
Delta EG (ft)	0.14	Conv. Total (cfs)	31862.3	34430.8
Delta WS (ft)	0.13	Top Width (ft)	256.28	209.34
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.03	0.02
BR Open Vel (ft/s)	2.87	C & E Loss (ft)	0.00	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.41	0.35
BR Sel Method	Energy only	Power Total (lb/ft s)	0.93	0.75

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5474

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87
27.6	377.66	28.15	377.66	32.08	377.85	34.11	377.81	34.84	377.86
36.16	377.76	36.5	377.71	36.95	377.6	37.24	377.63	37.53	377.55
43.71	377.04	44.96	377.01	53.85	377.19	61.96	376.88	69.36	376.67
78.2	376.53	80.32	376.46	85.59	376.16	86.54	376.08	87.13	376
96.16	374	106.12	372	115.26	370	135.49	369.25	142.97	369.5
155.72	370	160.13	369.38	160.65	369.34	161.19	369.38	161.22	369.44
161.24	368.96	165.72	368.71	205.57	368.19	226.91	367.45	227.84	367.41
239.06	361.76	241.96	361.6	245.76	361.52	251.97	367.85	256.98	368.15
272.47	369.07	292.37	370.16	313.15	370.81	318.99	371.3	321.33	371.4
339.22	371.96	340.43	372	349.15	373.24	355.3	374	368.27	375.86
369.44	376	372.93	376.21	375.85	376.35	378.58	376.44	379.95	376.57
383.94	376.7	387.23	377.09	388.78	377.16	390.64	377.28	394.93	378
401.34	379.4	405.24	380.21	406.53	380.45	414	382	419.84	383.75
427.66	386.31								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	227.84	.04	251.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
227.84	251.97	54.4	54.86	54.94	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	224.3	367.75	F
255.8	292.3	368.13	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	29.9	385	170.3	205.7	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5419

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.86	3.78	380.71	4.98	380.68	6.09	380.65	17.15	380.11
18.16	380	18.96	379.91	19.28	379.88	19.92	379.82	26.66	379.12
33.04	378.58	34.43	378.44	39.87	378	40.43	377.97	45.3	377.68
47.96	377.57	55.03	377.19	58.61	377.04	63.94	376.76	68.35	376.51

75.42	376.11	77.27	376	79.39	375.6	88.74	374	95.93	372.25
103.06	370.55	105.38	370	106.52	369.95	124.3	369.13	143.21	368.92
147.73	368.65	154.71	368.29	193.74	367.43	212.87	367.11	212.89	367.11
213.8	367.1	221.32	362.36	228.08	361.46	230.72	362.15	234.51	367.15
243.11	367.53	243.13	367.53	255.89	368.1	273.39	369.09	289.93	371.07
313.65	371.93	314.49	371.98	314.7	372	316.49	372.27	319.14	372.61
322.78	373.12	328.35	373.78	330.34	374.01	330.63	374.04	333.66	374.3
334.1	374.33	334.72	374.39	338.27	374.58	342.52	374.8	344.74	375.07
346.7	375.32	347.32	375.37	350.65	375.82	350.83	375.84	351.12	375.87
351.94	376	361.89	378	362.32	378.12	369.2	380	375.4	382
381.54	384	387.14	386						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.8	.04	234.51	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

	213.8	234.51		93.04	95.36	97.65	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	25.8	385	F
161.5	202.4	385	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5323

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.88	33.33	380.11	40.06	380	44.89	379.5	59	378
67.02	377.3	71.41	376.93	82.12	376	85.17	375.72	86.89	375.57
104.57	374	104.96	373.94	105.28	373.89	109.01	373.33	110.74	373.08
113.95	372.58	116.4	372.26	118.47	372	119.44	371.89	121.49	371.67
125.25	371.29	126.03	371.19	132.92	370	135.4	369.51	137.55	369.08
143.39	368.87	152.17	368.34	189.23	365.45	207.94	365.88	213.15	366
215.76	361.32	219.54	361.54	222.99	361.95	225.61	363.08	227.85	363.55
233.11	366.26	238	366.82	242.41	367.33	259.77	368.53	278.63	371.43
280.36	372	318.89	376	320.12	376.01	321.57	376.05	349.64	377.86
349.73	377.86	349.8	377.87	351.93	378	359.87	379.62	362.53	380
367.1	381.08	369.42	381.61	370.97	382	374.97	382.95	379.47	384
383.38	384.6	383.92	384.68						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.15	.04	233.11	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

	213.15	233.11		116.69	114.31	111.9	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	28.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5209

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.03	.15	378.03	1.95	378	2.36	377.96	6.29	377.85
16.45	377.5	32.34	376.94	33.33	376.83	33.48	376.82	33.68	376.79
33.96	376.77	34.79	376.69	35.57	376.61	36.06	376.58	36.71	376.52
37.31	376.46	37.67	376.43	38.36	376.39	38.61	376.37	39.48	376.31
42.48	376.17	42.92	376.13	45.71	376	45.73	376	49.13	375.52
50	375.39	51.69	375.13	54.05	374.76	55.37	374.56	56.81	374.32
58.6	374	58.66	374	59.06	373.96	84.53	372.91	98.55	372.35
98.82	372.33	99.63	372.28	103.93	372.02	104.29	372	104.3	372
106.14	371.66	116.08	370.04	116.42	370	139.5	368.78	180.51	365.75
201.11	365.1	209.66	364.83	212.88	361.1	216.14	361.11	219.68	361.44
225.21	365.18	231.24	365.5	231.26	365.5	242.79	366.12	270.5	369.12
274.64	369.12	323.97	372.18	340.57	374.96	340.58	375.25	340.59	375.28
344.72	375.7	345.37	375.76	347.71	376	348.59	376.15		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.66	.04	225.21	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.66	225.21	111.42	101.59	91.47	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
298.8	301.6	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	22.5	380	270.4	298.8	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5107

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.01	.24	376	7.07	375.83	9.07	375.73	10.81	375.67
14.62	375.53	15.38	375.51	17.77	375.4	18.91	375.37	34.75	374.53
41.77	374.45	50.79	374.46	55.85	374.46	57.09	374.44	66.02	374.11
71.3	374	75.88	373.97	100.91	373.67	129.38	373.15	147.16	372.84
170.03	372.61	172.25	372.56	172.92	372.55	178.44	372.44	185.81	372.3
200.51	372.07	201.43	371.98	201.7	371.98	202.67	371.92	215.72	371.52
224.6	371.21	235.57	370.77	237.04	370.74	250.15	370.35	252.81	370.32
253.08	370.31	263.87	370.17	266.55	370.18	267.52	370.19	268.58	370.13
278.39	370.23	284.41	370.28	291.18	370.38	294.8	370.34	311.68	370.28
315.54	370.35	315.75	370.35	322.33	370.22	323.94	370.21	332.11	370.09
355.05	371.1	364.88	371.1	382.36	369.28	393.14	367.95	393.15	367.95
397.41	367.43	406.55	360.36	409.03	359.92	412.88	360.59	414.63	362.95
416.03	363.17	422.1	365.13	424.57	365.29	439.58	366.25	464.4	370.03
475.81	370.03	507.28	370.74	534.67	372.32	549.02	374.66	549.03	374.92
549.05	374.92	551.62	375.01	559.75	376	561.38	376.32		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	397.41	.04	422.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.41	422.1	67.29	67.07	66.86	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
295.8	317.3	380	F
445.9	465.3	380	F
474.6	515.9	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
317.3	364.3	380	465.3	474.6	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5040

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78
60.84	374.76	65.24	374.68	66.8	374.67	69.29	374.63	82.36	374.74
84.96	374.72	94.2	374.58	98.84	374.02	99.09	374	100.29	373.97
104.65	373.88	105.56	373.85	106.59	373.78	109.92	373.71	111.01	373.7
130.98	373.7	135.97	373.62	165.62	372.83	166.72	372.81	174.13	372.86
190.11	373	193.32	373	195.48	372.98	206.16	372.44	206.59	372.42
208.47	372.4	218.24	372.4	219.79	372.28	225.13	372	226.38	371.95
226.58	371.93	245.52	371.43	256.75	371.11	261.14	370.99	264.15	370.9
269.51	370.76	283.05	370.32	296.66	370.06	300.29	370	307.5	369.97
310.36	369.98	336.01	370.03	366.23	369.58	397.63	368.96	412.55	368.2
412.96	367.93	415.6	366.11	424.49	359.97	427.96	359.23	429.97	359.61
432.2	361.31	434.59	361.8	443.41	365.9	443.42	365.91	448.7	368.36
463.33	369.65	490.22	370.98	518.26	372.76	527.06	373.76	535.03	374

```
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         415.6  443.41           104.82   108.2  107.53             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5000

INPUT
Description: Longview Drive
Distance from Upstream XS =      38
Deck/Roadway Width        =      27
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     122     374             231     372           346.8 370.217
   363.6 369.987           384.5  369.89             390 370.049
   400.6 370.192           404.7 370.096           417.9 370.146
   433.4  370.53           456.1 371.384           479.9   372.4
   523.7     374           556.9     376

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     376    3.61  375.88   21.39  374.91   24.35   374.9   39.18  375.08
   42.63  375.04   47.14   374.9   52.43  374.83    54.6  374.82   57.34  374.78
   60.84  374.76   65.24  374.68    66.8  374.67   69.29  374.63   82.36  374.74
   84.96  374.72    94.2  374.58   98.84  374.02   99.09     374  100.29  373.97
  104.65  373.88  105.56  373.85  106.59  373.78  109.92  373.71  111.01   373.7
  130.98   373.7  135.97  373.62  165.62  372.83  166.72  372.81  174.13  372.86
  190.11     373  193.32     373  195.48  372.98  206.16  372.44  206.59  372.42
  208.47   372.4  218.24   372.4  219.79  372.28  225.13     372  226.38  371.95
  226.58  371.93  245.52  371.43  256.75  371.11  261.14  370.99  264.15   370.9
  269.51  370.76  283.05  370.32  296.66  370.06  300.29     370   307.5  369.97
  310.36  369.98  336.01  370.03  366.23  369.58  397.63  368.96  412.55   368.2
  412.96  367.93   415.6  366.11  424.49  359.97  427.96  359.23  429.97  359.61
   432.2  361.31  434.59   361.8  443.41   365.9  443.42  365.91   448.7  368.36
  463.33  369.65  490.22  370.98  518.26  372.76  527.06  373.76  535.03     374
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         415.6  443.41             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

Downstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  375.75             124     374           270.8     372
   386.7 370.217           403.6 369.987           424.4  369.89
   429.9 370.049           440.5 370.192           444.4 370.096
   457.6 370.146           473.1  370.53           495.7 371.384
   519.5   372.4           561.3     374           594.1     376

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  381.34    1.15  381.36    5.15  381.18    6.14   381.2    7.86  381.16
   10.94  381.18   23.92     381   30.33  380.86   45.55  380.35   51.93  380.07
   65.77   379.6   68.46  379.68   70.71  379.61   75.04  379.33   80.36  379.11
  107.04  378.79  117.65  378.45  125.92     378  132.09  376.99  138.71     376
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  142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
  164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
  181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
  210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
   248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
  296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
  405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
  444.02  363.09  449.76  359.84  461.09  359.04  468.33  363.92  475.48  368.75
  476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
  568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
  588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
  633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        442.94  468.33            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442   366.5       F
   476.1  633.02   366.5       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   68.79     .024     .024        0                  .5                1
Upstream   Elevation =  359.44
           Centerline Station =  425
Downstream Elevation =  359.83
           Centerline Station =  450

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   70.81     .024     .024        0                  .5                1
Upstream   Elevation =  359.39
           Centerline Station =  432
Downstream Elevation =  359.74
           Centerline Station =  457

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         45.04    Culv Full Len (ft)
  # Barrels                     1    Culv Vel US (ft/s)          3.32
  Q Barrel (cfs)             45.04    Culv Vel DS (ft/s)          6.23
  E.G. US. (ft)             362.06    Culv Inv El Up (ft)       359.44
  W.S. US. (ft)             361.41    Culv Inv El Dn (ft)       359.83
  E.G. DS (ft)              361.24    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              360.92    Culv Exit Loss (ft)         0.51
  Delta EG (ft)               0.82    Culv Entr Loss (ft)         0.09
  Delta WS (ft)               0.49    Q Weir (cfs)
  E.G. IC (ft)              361.41    Weir Sta Lft (ft)
  E.G. OC (ft)              362.07    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        361.81    Weir Max Depth (ft)
  Culv WS Outlet (ft)       361.14    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         1.31    Min El Weir Flow (ft)     370.12


Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
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CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	73.61	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.42
Q Barrel (cfs)	73.61	Culv Vel DS (ft/s)	6.83
E.G. US. (ft)	362.89	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	362.40	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	362.01	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	361.71	Culv Exit Loss (ft)	0.43
Delta EG (ft)	0.88	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.69	Q Weir (cfs)	
E.G. IC (ft)	362.16	Weir Sta Lft (ft)	
E.G. OC (ft)	362.90	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.44	Weir Max Depth (ft)	
Culv WS Outlet (ft)	361.71	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.80	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	153.18	Culv Full Len (ft)	64.13
# Barrels	1	Culv Vel US (ft/s)	7.69
Q Barrel (cfs)	153.18	Culv Vel DS (ft/s)	7.77
E.G. US. (ft)	365.97	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	365.81	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	363.96	Culv Frctn Ls (ft)	0.77
W.S. DS (ft)	363.72	Culv Exit Loss (ft)	0.70
Delta EG (ft)	2.01	Culv Entr Loss (ft)	0.46
Delta WS (ft)	2.09	Q Weir (cfs)	
E.G. IC (ft)	364.37	Weir Sta Lft (ft)	
E.G. OC (ft)	365.96	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	
Culv WS Outlet (ft)	363.72	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.73	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	52.83	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.65
Q Barrel (cfs)	52.83	Culv Vel DS (ft/s)	2.65
E.G. US. (ft)	371.76	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	371.70	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	371.56	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	371.50	Culv Exit Loss (ft)	0.04
Delta EG (ft)	0.20	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.20	Q Weir (cfs)	692.19
E.G. IC (ft)	361.63	Weir Sta Lft (ft)	246.66
E.G. OC (ft)	371.76	Weir Sta Rgt (ft)	464.88
Culvert Control	Outlet	Weir Submerg	0.79
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	1.87
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.10
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	240.40
Culv Crt Depth (ft)	1.44	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	48.99	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.46
Q Barrel (cfs)	48.99	Culv Vel DS (ft/s)	2.46
E.G. US. (ft)	372.15	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.04	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.02	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	371.91	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.13	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.13	Q Weir (cfs)	1035.90
E.G. IC (ft)	361.52	Weir Sta Lft (ft)	222.94
E.G. OC (ft)	372.15	Weir Sta Rgt (ft)	474.00
Culvert Control	Outlet	Weir Submerg	0.83
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.26
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.32
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	331.87
Culv Crt Depth (ft)	1.38	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	42.40	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.13
Q Barrel (cfs)	42.40	Culv Vel DS (ft/s)	2.13
E.G. US. (ft)	372.57	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.40	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.47	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.30	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.10	Culv Entr Loss (ft)	0.04
Delta WS (ft)	0.10	Q Weir (cfs)	1477.10
E.G. IC (ft)	361.33	Weir Sta Lft (ft)	203.67
E.G. OC (ft)	372.57	Weir Sta Rgt (ft)	484.44
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.68
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.58
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	442.50
Culv Crt Depth (ft)	1.26	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	46.96	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	3.44
Q Barrel (cfs)	46.96	Culv Vel DS (ft/s)	6.32
E.G. US. (ft)	362.06	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	361.41	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	361.24	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	360.92	Culv Exit Loss (ft)	0.47
Delta EG (ft)	0.82	Culv Entr Loss (ft)	0.09
Delta WS (ft)	0.49	Q Weir (cfs)	
E.G. IC (ft)	361.41	Weir Sta Lft (ft)	
E.G. OC (ft)	362.05	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	361.77	Weir Max Depth (ft)	
Culv WS Outlet (ft)	361.08	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.34	Min El Weir Flow (ft)	370.12

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	75.39	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.51
Q Barrel (cfs)	75.39	Culv Vel DS (ft/s)	6.64
E.G. US. (ft)	362.89	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	362.40	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	362.01	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	361.71	Culv Exit Loss (ft)	0.39
Delta EG (ft)	0.88	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.69	Q Weir (cfs)	
E.G. IC (ft)	362.16	Weir Sta Lft (ft)	
E.G. OC (ft)	362.88	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.41	Weir Max Depth (ft)	
Culv WS Outlet (ft)	361.71	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.83	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	153.82	Culv Full Len (ft)	69.86
# Barrels	1	Culv Vel US (ft/s)	7.72
Q Barrel (cfs)	153.82	Culv Vel DS (ft/s)	7.74
E.G. US. (ft)	365.97	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	365.81	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	363.96	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	363.72	Culv Exit Loss (ft)	0.69
Delta EG (ft)	2.01	Culv Entr Loss (ft)	0.46
Delta WS (ft)	2.09	Q Weir (cfs)	
E.G. IC (ft)	364.35	Weir Sta Lft (ft)	
E.G. OC (ft)	365.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	

Culv WS Outlet (ft)	363.72	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.73	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	52.97	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.66
Q Barrel (cfs)	52.97	Culv Vel DS (ft/s)	2.66
E.G. US. (ft)	371.76	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	371.70	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	371.56	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	371.50	Culv Exit Loss (ft)	0.04
Delta EG (ft)	0.20	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.20	Q Weir (cfs)	692.19
E.G. IC (ft)	361.58	Weir Sta Lft (ft)	246.66
E.G. OC (ft)	371.77	Weir Sta Rgt (ft)	464.88
Culvert Control	Outlet	Weir Submerg	0.79
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	1.87
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.10
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	240.40
Culv Crt Depth (ft)	1.45	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	49.11	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.46
Q Barrel (cfs)	49.11	Culv Vel DS (ft/s)	2.46
E.G. US. (ft)	372.15	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.04	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.02	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	371.91	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.13	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.13	Q Weir (cfs)	1035.90
E.G. IC (ft)	361.47	Weir Sta Lft (ft)	222.94
E.G. OC (ft)	372.15	Weir Sta Rgt (ft)	474.00
Culvert Control	Outlet	Weir Submerg	0.83
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.26
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.32
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	331.87
Culv Crt Depth (ft)	1.38	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	42.50	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.13
Q Barrel (cfs)	42.50	Culv Vel DS (ft/s)	2.13
E.G. US. (ft)	372.57	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.40	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.47	Culv Frctn Ls (ft)	0.07
W.S. DS (ft)	372.30	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.10	Culv Entr Loss (ft)	0.04
Delta WS (ft)	0.10	Q Weir (cfs)	1477.10
E.G. IC (ft)	361.28	Weir Sta Lft (ft)	203.67
E.G. OC (ft)	372.58	Weir Sta Rgt (ft)	484.44
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.68
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.58
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	442.50
Culv Crt Depth (ft)	1.26	Min El Weir Flow (ft)	370.12

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4932

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.34	1.15	381.36	5.15	381.18	6.14	381.2	7.86	381.16
10.94	381.18	23.92	381	30.33	380.86	45.55	380.35	51.93	380.07
65.77	379.6	68.46	379.68	70.71	379.61	75.04	379.33	80.36	379.11
107.04	378.79	117.65	378.45	125.92	378	132.09	376.99	138.71	376

```
  142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
  164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
  181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
  210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
   248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
  296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
  405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
  444.02  363.09  449.76  359.84  461.09  359.04  468.33  363.92  475.48  368.75
  476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
  568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
  588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
  633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        442.94  468.33            86.54   87.15    87.5             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442   366.5       F
   476.1  633.02   366.5       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4845

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.58    4.55  380.55    6.68  380.49    9.66  380.28   16.63  379.98
   26.33  379.81    62.1  378.84   98.92     378   99.32  377.89  136.94     376
     143  375.91  149.44     376  152.28   376.1  156.17  376.13   191.4   376.8
  203.32  376.79  209.98  376.63  238.93  376.59  244.45  376.21  250.81     376
  261.25  374.62  275.77     372  281.64  371.31  290.21  370.67  304.89  369.51
  331.41  367.13  348.83  364.14  380.45  364.27  402.65  363.64  402.68  363.64
  406.34  363.53  414.27  358.13  417.64  357.81  425.27  358.61  432.32  365.43
  433.19  365.53  433.22  365.53  453.71  367.76  474.07  367.76  485.62     368
  502.49     370  503.75  370.14  505.06   370.4  505.48  370.53  507.56  370.13
     509     370  513.04     370  518.39  370.19   521.7  370.19  524.91  370.37
  537.92  371.65  541.22  371.89  542.32   372.1   545.8  372.19  575.74  373.74
  577.08  373.86  599.27  377.01  605.31  377.77  608.04  378.01  611.15  378.12
  614.15  378.14  616.12   378.1  621.88  378.21  625.35  378.34  639.16  379.09
  657.61     380  661.97  380.57  669.23  381.67  678.71  383.47

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  406.34     .04  433.22    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        406.34  433.22            89.54  100.49  110.66             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   336.4   363.2     385       F
   550.5     618     385       F
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
   127.8   235.6     385   296.1   336.4     385     454   504.5     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4745

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.11    21.9  380.04   28.76  379.88    34.3  379.51    43.1  379.86
   53.28   379.9   56.58  379.78   62.04  379.32   72.76  379.37   82.93  379.28
   86.47  379.41   92.14  379.33   95.69  379.17  109.62  379.08  135.12  378.66
  137.45  378.48  167.42   378.8  171.95  378.72  192.21     378  200.65  377.24
  235.54  377.01  241.83  376.74  253.23   377.1  255.58  376.97  271.08  376.62
  275.97  376.65  279.99  377.08  282.06  377.08  293.56  376.33  300.79  376.13
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316.78	375.92	330.78	375.45	339.87	375.04	353.65	374	362.03	373.25
376.22	371.8	398.14	369.91	398.19	368.67	441.73	364.73	471.43	362.82
491.34	362.87	497.92	361.09	497.93	361.09	503.16	359.68	507.05	359.79
508.57	357.67	513.05	357.45	516.27	357.67	524	363.35	528.02	363.37
528.05	363.37	543.42	363.45	576.59	363.78	580.38	364	587.66	364.1
599.83	364.36	607.95	364.42	639.8	366	660.86	367.5	675.48	368.86
685.51	370	701.05	372.18	718.22	373.29	725.55	373.48	731.12	374.02
748.44	374.98	752.53	375.3	765.7	375.87	778.37	376.85	791.24	378
806.37	380	808.13	380.31	815.79	381.16	824.93	382	831.66	382.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	491.34	.04	524	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
491.34	524	111.08	108.67	106.25	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4636

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.34	6.89	380.72	8.14	380.72	21.8	379.64	39.34	378
67.85	376	132.49	373.43	147.33	374	162.25	376	169.4	376.34
178.16	375.89	185.65	375.64	200.34	375.76	233.4	375.68	239.11	375.36
249.5	375.34	251.25	375.42	257.5	375.35	267.44	374.96	277.67	374.75
315.27	374.57	318.08	374.63	344.76	374	355.8	372	365.77	370
409.43	368	426.89	366.86	461.95	364.11	477.5	361.95	477.88	361.7
477.89	361.69	483.5	357.91	493.33	357.61	499.07	357.85	502.3	362.25
508.59	362.41	508.61	362.41	524.4	362.83	556.76	362.64	588.33	363.03
609.48	362.74	620.82	363.21	643.23	363.52	650.91	363.84	673.28	365.16
690.67	365.89	697.4	365.96	767.85	369.67	776.5	370	791.17	370.91
827.59	374	829.12	374.06	835.04	374	840.77	373.45	865.39	370
874.22	368	886.48	367.07	898.7	368	908.05	370	921.08	372
930.79	374	936.24	376	940.95	378	945.37	380	961.95	388
966.25	390	970.84	392	976.29	394	984.5	396		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	477.5	.04	502.3	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
477.5	502.3	90.09	85.72	81.01	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
829.12	930.96	374.06	T

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
12.5	47.6	385	159.7	233.5	385	289.2	333.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4550

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.61	5.72	380	14.44	379.53	24.98	379.26	49.94	378
51.11	377.81	52.48	377.77	57.27	377.13	65.46	377.09	83.13	376.44
115.32	376.53	129.27	376.2	134.89	375.7	161.6	375.1	180.09	374.38
184.24	374	192.05	373.05	194.36	373.3	203.06	373.7	213.23	373.33
227.71	372.43	230.87	372.39	241.61	372.73	250.77	372.75	269.45	372.53
285.09	372.56	296.76	372.27	299.73	372.12	301.56	372.12	324.23	373.13
352.74	371.54	360.77	370.69	406.27	367.82	421.84	366.98	442.28	366.44
468.82	365.41	485.45	363.53	487.5	362.45	487.54	362.43	497.34	357.27
502.26	357.24	507.29	357.62	517.01	361.85	517.99	361.92	518.04	361.92
534.2	362.95	563.73	363.2	593.31	362.98	614.08	362.38	634.37	362.55
654.16	363.24	660.04	363.19	685.91	363.78	696.84	364.73	723.22	364.95
742.94	365.93	815.68	370.67	842.59	372	866.09	374.13	871.35	374.51
874.28	374.54	906.93	376.44	924.53	378	932.06	378.21	947.24	379.65
949.47	379.69	952.48	379.61	972.07	380.62	978.55	380.78	985.97	381.67

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  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         487.5  517.99           205.67  206.54  206.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 4400

INPUT
Description: US 40
Distance from Upstream XS =      53
Deck/Roadway Width        =     104
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     5.8     380              83     378             165     376
     237     374             324     372             391 371.588
     429 371.157           463.7 370.927           490.9 370.876
   527.4 371.004           560.1 371.263           596.7  371.72
     644     372             732     374             786     376
     860     378             928     380             999     382

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         487.5  517.99             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

Downstream  Deck/Roadway Coordinates
    num=      11
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      13     378              97     376             158     374
   290.3 372.244             328  371.79           354.7 371.615
   387.1 371.555           419.8  371.62           453.4 371.896
   491.3 372.287             600     374

Downstream Bridge Cross Section Data
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.39     3.9  379.26    7.14  379.08    8.79  379.03   11.22  378.89
   14.53  378.78   17.41  378.61   25.86  378.28    32.7   378.1   37.64  377.91
```

```
   47.11  377.39    52.1  377.51   58.99  377.54   77.62  377.45   88.21  377.23
   92.02  377.21   95.64  377.34  113.55  377.38  122.03     377  137.03  376.62
  138.43  376.63   139.9  376.54  142.13  376.29  145.36     376  158.31  375.76
  187.11  374.72  198.02   374.5  200.77  374.48  208.31  374.54   212.2  374.51
   224.1     374  231.63  372.98   244.2   372.1  267.66  371.03  274.63  370.67
  284.57     370  294.75  364.77  310.72  364.84   317.5  367.36  326.34  364.31
  347.85  362.45  366.55  361.42  369.78  361.24  371.99  357.69   373.8  356.67
  379.51  351.69   381.6     352  394.25  354.75  396.69  357.39  399.49  360.42
  420.27  362.04  443.45   362.5  460.82  363.19  487.61     366  491.52  366.47
  492.41  366.52  501.31  366.41  508.11  366.82  510.99  366.89  511.84  366.96
  518.45  367.09  530.63  367.88  531.82     368  543.84     370  556.98     372
  567.14  372.99  573.69  373.54  580.03     374  596.09  374.78  599.01  375.01
   603.8  375.23  612.54     376  624.11  376.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  369.78     .04  399.49    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        369.78  399.49             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     356     362       F
     407  624.11     362       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                32   136.5     .013     .013        0                  .3                1
Upstream   Elevation =  357.575
           Centerline Station =  502.25
Downstream Elevation =  357.07
           Centerline Station =  382

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         92.00    Culv Full Len (ft)
  # Barrels                     1    Culv Vel US (ft/s)          7.18
  Q Barrel (cfs)             92.00    Culv Vel DS (ft/s)          6.71
  E.G. US. (ft)             360.10    Culv Inv El Up (ft)       357.58
  W.S. US. (ft)             360.02    Culv Inv El Dn (ft)       357.07
  E.G. DS (ft)              358.79    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              358.78    Culv Exit Loss (ft)         0.69
  Delta EG (ft)               1.31    Culv Entr Loss (ft)         0.12
  Delta WS (ft)               1.24    Q Weir (cfs)
  E.G. IC (ft)              360.10    Weir Sta Lft (ft)
  E.G. OC (ft)              360.22    Weir Sta Rgt (ft)
  Culvert Control            Inlet    Weir Submerg
  Culv WS Inlet (ft)        359.18    Weir Max Depth (ft)
  Culv WS Outlet (ft)       358.78    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         1.54    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         1.60    Min El Weir Flow (ft)     371.57


Note:    During supercritical analysis, the culvert direct step method went to normal depth.  The
program then assumed
         normal depth at the outlet.
Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        149.00    Culv Full Len (ft)
  # Barrels                     1    Culv Vel US (ft/s)          8.43
  Q Barrel (cfs)            149.00    Culv Vel DS (ft/s)          7.55
  E.G. US. (ft)             361.10    Culv Inv El Up (ft)       357.58
  W.S. US. (ft)             361.01    Culv Inv El Dn (ft)       357.07
```

E.G. DS (ft)	359.55	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	359.54	Culv Exit Loss (ft)	0.87
Delta EG (ft)	1.54	Culv Entr Loss (ft)	0.21
Delta WS (ft)	1.47	Q Weir (cfs)	
E.G. IC (ft)	361.10	Weir Sta Lft (ft)	
E.G. OC (ft)	361.22	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	359.78	Weir Max Depth (ft)	
Culv WS Outlet (ft)	359.54	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.15	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.21	Min El Weir Flow (ft)	371.57

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	307.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.66
Q Barrel (cfs)	307.00	Culv Vel DS (ft/s)	10.22
E.G. US. (ft)	363.47	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	363.39	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	360.87	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	360.82	Culv Exit Loss (ft)	1.58
Delta EG (ft)	2.60	Culv Entr Loss (ft)	0.53
Delta WS (ft)	2.57	Q Weir (cfs)	
E.G. IC (ft)	363.38	Weir Sta Lft (ft)	
E.G. OC (ft)	363.47	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	361.18	Weir Max Depth (ft)	
Culv WS Outlet (ft)	360.82	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.60	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.58	Min El Weir Flow (ft)	371.57

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	667.22	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	16.68
Q Barrel (cfs)	667.22	Culv Vel DS (ft/s)	16.68
E.G. US. (ft)	371.52	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	371.52	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	362.13	Culv Frctn Ls (ft)	1.64
W.S. DS (ft)	361.91	Culv Exit Loss (ft)	4.27
Delta EG (ft)	9.39	Culv Entr Loss (ft)	1.30
Delta WS (ft)	9.61	Q Weir (cfs)	135.72
E.G. IC (ft)	371.52	Weir Sta Lft (ft)	396.94
E.G. OC (ft)	371.51	Weir Sta Rgt (ft)	580.73
Culvert Control	Inlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	0.64
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.41
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	75.78
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Warning: During the culvert outlet control computations, the program could not balance the culvert/weir flow. The reported
outlet energy grade answer may not be valid.
Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	761.21	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	19.03
Q Barrel (cfs)	761.21	Culv Vel DS (ft/s)	19.03
E.G. US. (ft)	371.94	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	371.94	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	362.85	Culv Frctn Ls (ft)	2.13
W.S. DS (ft)	362.49	Culv Exit Loss (ft)	5.27
Delta EG (ft)	9.09	Culv Entr Loss (ft)	1.69
Delta WS (ft)	9.44	Q Weir (cfs)	372.79
E.G. IC (ft)	372.02	Weir Sta Lft (ft)	346.04

E.G. OC (ft)	371.94	Weir Sta Rgt (ft)	629.43
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.04
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.59
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	166.44
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	750.45	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.76
Q Barrel (cfs)	750.45	Culv Vel DS (ft/s)	18.76
E.G. US. (ft)	372.36	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.35	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	363.69	Culv Frctn Ls (ft)	2.07
W.S. DS (ft)	363.17	Culv Exit Loss (ft)	4.95
Delta EG (ft)	8.67	Culv Entr Loss (ft)	1.64
Delta WS (ft)	9.18	Q Weir (cfs)	811.55
E.G. IC (ft)	372.37	Weir Sta Lft (ft)	338.15
E.G. OC (ft)	372.36	Weir Sta Rgt (ft)	659.57
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.48
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.94
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	301.43
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4344

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01
603.8	375.23	612.54	376	624.11	376.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	369.78	.04	399.49	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

```
       369.78  399.49            54.24    54.2   54.21             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     356     362       F
     407  624.11     362       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4289

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  377.16    4.18  376.93    6.02  376.92   13.94  376.67   20.26   376.2
    24.9  376.18   33.24  377.06   38.69  377.12   40.04  377.22   48.07  377.42
   60.83   377.6    66.6  377.54    72.7  377.21   85.85     376   95.14  375.32
  109.02  374.79  111.75  374.73  114.36   374.6   120.7  374.51  138.66     374
  141.06  373.73  149.42  372.56  154.25     372   161.5  371.27  163.79  371.11
  170.81     370  173.81  369.84  195.17  369.42   204.6  369.46  213.04  369.62
   222.3     370  223.43  370.15   226.4  370.41  227.06  370.31  236.85  369.39
  247.27  369.56  249.28   369.5  253.56   369.2  259.27  368.95  271.49     368
  281.02     366  283.53  365.58  284.63  365.72  287.61  365.54  294.16     364
  296.04  363.42  300.15  363.15  323.16   361.6  346.64  361.49  362.78  361.62
  366.58  358.56  372.42  353.86  381.79  352.78  389.78  353.42  392.45  357.73
  395.52  357.99  397.76  358.89  397.77   358.9  401.82  360.54  427.65   361.5
  461.12  362.68  474.19     364  499.06  364.89  510.36  365.54  512.25  365.53
  519.79     366  531.35  367.23  537.87     368  549.98     370  574.53  371.66
  580.97  371.69  592.69  371.17  604.52  371.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  362.78     .04  401.82    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        362.78  401.82           104.83  104.42  103.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4185

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  370.48     9.2  369.89   11.88  369.82   17.34  369.84   34.57   369.3
   53.84  368.42   59.13  368.23   62.34  368.17   68.09  368.17   70.92  368.38
    76.7  368.52   81.21  368.71   88.53  369.21  100.23  369.08  113.03  368.39
  118.84  368.28  119.85  368.31  124.69  368.28  130.99  368.32  143.69  368.07
  174.23  367.24  184.05  366.87  189.65  366.83  193.83  366.87  199.74  366.51
  200.31  366.52  202.71  366.37  206.47     366  222.83  365.23  229.16   365.1
  237.63  364.59  245.34     364  270.04  362.83  279.56  362.32  284.22     362
  317.36  360.81  352.39  360.17  380.43  360.08  403.96  360.43  405.79  359.32
  407.94  358.02  410.35  357.61     417  355.97   420.8  354.77  430.79  360.87
   435.8  361.06  435.83  361.06  448.07  361.52  480.45   361.7  518.27  363.36
  531.33     364  532.88  364.19  543.89  364.64  551.51  365.01  553.39  365.05
  557.04   365.2  562.67  365.52  565.16  365.53  571.76  365.76  589.17  365.65
   601.4  365.75  611.19   365.7  613.71  365.74  619.92     366  625.24  366.72
   632.9  367.41  636.14  367.76  639.39     368  644.27  368.63  644.65  368.64
  646.39   368.9  647.36  368.89   650.3  369.29

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  403.96     .04  430.79    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        403.96  430.79           151.73  151.97  152.24             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4033

INPUT
```

Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	371.31	6.28	371.09	10.1	370.82	11.41	370.78	13.41	370.65
16.07	370.59	24.34	370.14	26.91	370.09	30.53	370.19	38.94	370.2
41.71	370.32	43.77	370.21	45.82	370	47.56	369.91	61.47	368.93
64.73	368.91	74.46	369.43	84.71	369.4	87.19	369.59	93.43	369.89
94.09	369.89	96.1	370	98.42	370.2	102.15	370.38	104.17	370.4
106.65	370.37	110.1	370.2	112.15	370	115.71	369.82	128.08	369.81
137.68	369.7	151.03	369.46	154.18	369.16	164.93	368.77	175.08	368.49
185.11	368.1	190.59	367.77	192.4	367.74	209.8	366.53	222.55	365.72
229.81	365.17	231.09	365.15	237.47	365.25	254.65	364.85	274.84	362
281.46	361.45	311.04	360.26	324.61	359.69	324.63	359.69	327.57	359.56
332.63	355.53	339.8	355.05	344.88	355.72	350.28	359.03	354.96	359.02
354.99	359.02	368.82	358.97	388.87	359.13	402.39	358.88	463.03	360
463.46	360.12	468.3	360.75	482.77	362	495.13	362.44	501.53	362.51
509.75	362.5	519.32	362.16	523.42	362.13	524.98	362	532.66	361.82
536.09	361.79	548.11	361.82	551.96	362	557.9	362.44	583.12	363.9
596.37	364.95								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	327.57	.04	350.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
327.57	350.28	105.3	103.27	101.24	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3930

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	373.25	5.62	373.04	18.75	372.65	20.05	372.56	51.89	373.28
67.22	372.62	75.52	372.21	81.21	372	82.89	371.8	83.35	371.81
100.65	370.82	104.09	370.51	109.16	370	119.9	369.24	121.3	369.19
125.83	369.28	143.55	369.25	145.3	369.37	145.92	369.31	149.12	369.58
149.56	369.54	151.28	369.67	155.23	369.78	159.52	369.77	162.64	369.66
165.16	369.5	170.48	369	173.88	368.53	174.87	368.43	177.64	368
179.57	367.59	182.98	366.78	185.85	366	189.84	365.01	193.24	364
205.26	362.99	232.35	361.15	264.16	359.45	274.41	358.31	274.42	358.31
280.37	357.65	286.95	354.74	289.44	354.49	294.11	355.34	299.09	358.68
305.18	358.74	305.19	358.74	321.51	358.88	353.18	358.92	436.87	360
449.41	362	451.92	362.47	457.66	363.46	461.04	364	466.97	364.48
469.66	364.48	474.3	364.61	476.21	364.58	476.86	364.61	477.78	364.59
488.71	364.64	490.27	364.68	512.72	365.88	514.21	366	532.64	368
542.86	370	544.26	370.23	546.1	370.43	549.88	370.48	552.59	370.59

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	280.37	.04	299.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
280.37	299.09	112.01	113.72	114.59	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
176	200.4	375	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
163.1	176	375

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3816

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	374.86	10.9	374	35.12	372	42.05	371.48	47.58	371.12
58.88	370.34	59.53	370.34	78.46	370.9	81.56	371.04	85.42	370.91
91.5	370.8	96.65	370.74	108.4	370.09	110.41	370	112.14	369.8
112.78	369.76	116.9	369.37	121.06	369	125.02	368.8	128.66	368.54

```
  132.43   368.4  135.47  368.11  138.27  368.07  140.86  368.14   143.7  368.03
  150.81   367.6   154.5  367.24  157.37  366.85  163.04     366  174.59  362.82
  217.65  358.92   236.4  357.65  236.42  357.65  237.46  357.58  243.76  354.29
   251.5   353.5  252.56  353.49   255.1  356.69   266.5  357.28  266.52  357.28
  271.38  357.54  301.23  358.52  327.76  358.95  350.57     360  371.84  361.19
  386.87     362  399.91  363.11  404.12  363.54  410.91  364.18  416.03  364.61
  421.73     365  428.74  365.37  429.75  365.39  438.84  365.39  440.51  365.38
  443.31   365.3  444.17  365.29  449.76  365.05  455.01  364.86  460.03   365.2
  465.28  365.49   469.1  365.73  472.03  365.86  472.64  365.86  474.82  366.04
  496.26   366.8  498.97  366.85  515.31  366.69  518.73   366.8  522.16  366.85
  525.33  367.02  526.96  367.04   534.8  367.32  549.03     368  554.32  368.52

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  237.46     .04   255.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        237.46   255.1             128.5  127.87  127.21             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   173.5   186.9     375       F
   373.3   445.4     375       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   142.2   173.5     375

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3688

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.19   12.07  367.61   20.74  367.88   33.44   368.3   35.81  368.34
   36.91  368.35   38.51   368.3    41.9  368.05   42.34     368   46.49  367.62
   57.82  366.07   58.06     366   58.98  365.89   59.73  365.86   61.35  365.74
   62.76  365.59   63.36  365.54   64.65  365.39   65.31  365.33   65.53   365.3
   68.14  364.99   69.06  364.94   77.78  365.17   78.29  365.12   78.87  365.13
   79.51  365.14   81.34  364.92   81.98  364.92   82.64  364.91   84.22  364.72
   85.27  364.68   87.32  364.44   87.96   364.4   91.82     364   92.71  363.94
   94.56   363.8  107.05  361.62  112.03  361.62  156.44  357.41  156.46  357.41
  166.74  356.43  170.56  353.16  171.46  352.86  179.43  353.24  182.46  356.86
  186.46     357  186.47  357.01  203.22  357.63   227.7   358.5  256.67     360
  261.88  360.34  264.57  360.54  271.14  360.98  283.16  361.89  284.48     362
  293.32  363.31  295.65   363.6  300.63  364.22  302.93  364.48  304.51  364.65
  310.25  365.25  317.77  366.05  320.57  366.39   321.8  366.52  324.49  366.86
  328.15  367.23  329.94  367.46  331.84  367.65  332.96  367.78  334.64     368
  343.14  368.38  353.94  368.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  166.74     .04  182.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        166.74  182.46           137.67  137.99   138.3             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    72.5   108.3     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   309.8   338.6     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3550

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.59   21.83     366   22.15  365.93   22.36  365.91   22.65  365.88
   24.81  365.75   34.15  365.49   36.08  365.41   36.47  365.41   56.33  364.39
   62.74  364.35   64.54  364.35   78.24  364.86   78.82  364.87   80.11   364.9
   92.13  365.45   95.39  365.49   97.19  365.52   98.79  365.54  111.29  364.66
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  113.06  364.51  113.63  364.52  115.75  364.34  116.17  364.34  118.14  364.18
  118.26  364.18  120.55     364  125.47  363.66  128.06  363.49  130.87  363.32
  133.62  363.17  137.86  362.93  141.25  362.78  142.84  362.67  144.42  362.54
  144.88  362.52  147.11   362.3   147.6  362.27  150.07     362  168.07  360.18
  202.08  358.28  222.67  356.22  222.69  356.22  229.29  355.55  231.57  353.11
  237.67  352.85  241.52  353.14  245.66  357.02   252.8  357.45  270.01   358.5
  299.86  361.08  320.94  363.87  322.12  363.98  326.43  364.47  335.31     366
  338.09  366.52  340.43  367.05  344.77     368  352.58  368.68  357.63  369.11
  363.94  369.54  366.26  369.71  370.89     370  376.06  370.55  378.66  370.84
  385.91   371.5  387.76   371.7  391.56     372  393.08  372.13  393.26  372.12
  394.51   372.2  396.42  372.27  400.73  372.39  401.46  372.38

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  222.67     .04  245.66    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        222.67  245.66           121.58  121.96  122.09             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     132   172.9     370       F
   358.4  401.46     375       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3428

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.25     .08  366.25     .21  366.24    2.49  366.31    5.55  366.33
     6.5  366.31    6.69   366.3    6.85  366.29    6.95  366.28    7.02  366.27
    7.07  366.26    7.09  366.26    7.37  366.14     7.5  366.11    7.73  366.11
    7.81     366   17.71  365.88   17.76  365.88   35.41  362.54   54.26  359.25
   71.12  356.77   71.14  356.77   72.75  356.53   82.67  355.38    85.4  352.15
   86.22  352.06   88.74  351.86   91.45  352.09   93.89  352.39   98.94  357.17
  101.38  357.43  121.79  359.59   156.9  362.39  164.18  363.89  164.43  364.14
  168.22  363.93  172.23  363.84   172.9  363.86     176  363.96   177.1     364
  178.13   364.1  190.23  365.12  198.83  365.85  199.59  365.91  200.67     366
   208.9  367.19  214.54     368  221.01  368.41  227.99  368.94  228.59  368.95
  229.18  368.96  244.28  369.43

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   82.67     .04   98.94    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         82.67   98.94           131.85  132.32  132.95             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    31.2    57.1     370       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     7.4    31.2     370   207.8   224.4     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3296

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  369.04    7.44  368.25    8.57   368.2   13.73     368   15.86  367.86
   16.24  367.82   20.57  367.48   24.23  367.01    30.3  366.41   32.66     366
   34.91  365.82   36.33  365.68   37.74  365.56   39.57  365.37   40.92  365.29
   43.15  365.29    43.9  365.26   57.19  365.22   65.98  364.57   67.12  364.52
   74.19     364   78.97  363.56   80.16  363.45   86.96  362.83   90.65  362.47
   94.56  362.11   95.89     362    97.9   362.2   98.84  362.19  107.93  362.58
  109.64  362.69  113.85  362.82  117.37  362.83  135.78  361.77  153.23  361.58
  168.24  361.26   168.8  361.63  178.91  362.18  192.98  358.61  195.06  357.92
  201.72  355.69  204.53  352.08  205.68  351.83  208.07  351.91  210.45  351.72
  213.06   352.1  214.14  351.94  214.68  352.11   218.9  356.65  223.16  358.34
  225.56  358.53  225.57  358.53   241.1  359.76  252.96  359.64  253.63  359.34
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   274.2  360.14  298.22  360.84  338.52     362  345.28  362.49  349.83   362.8
  358.24  363.42  360.55  363.61  366.27     364  376.16  364.76  381.02   365.1
  384.43  365.36   386.5  365.49  387.73  365.58  388.62  365.62  390.74  365.78
  391.33   365.8  393.98     366  397.53  366.12  401.29  366.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  195.06     .04  223.16    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        195.06  223.16           117.57  116.94  115.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3179

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.99    2.92  366.32    4.49     366    7.03  365.74   10.65  365.61
   11.25  365.55   16.84  365.58   20.65  365.55   33.69  365.26   37.05  365.27
   37.83  365.19   39.74  365.22   40.57  365.13   41.71  365.14   42.29  365.07
   42.83  365.07    44.3  364.91   44.81  364.89   52.54  364.19   59.05  363.73
   59.96  363.72   64.43     364   81.81  364.24   90.25  364.43   92.01   364.4
   99.97     364  104.37  363.32  108.33  362.78  110.63  362.49  114.3  362.12
  115.81     362  120.17  361.84  122.87  361.79  123.54  361.75     128  361.77
  128.34  361.74  133.43  361.84  133.74  361.82  143.14  361.87   149.1  361.65
  164.07  359.25  179.76  356.13  194.67  355.75   202.4  355.27  206.08  354.62
   206.1  354.62  214.08  353.21  222.22  351.72   224.4  350.87  225.57  350.64
  226.07   350.5  226.87  350.39  227.28  351.49  228.52  356.98  237.22  357.51
  237.24  357.52   245.5  358.02  261.13  358.56  278.43  358.68  287.56  359.19
  290.34  359.37   293.7  359.56  297.36  359.67  300.98  359.87  307.03     360
  313.84  360.92  321.07     362  329.79  363.01     342  364.37  355.84     366
  363.77  366.33  385.35  367.64  391.11  368.04  397.46  368.33

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  179.76     .04  228.52    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        179.76  228.52           101.1  102.24  103.14             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0    63.2     370       F
    80.2      98     370       F
   277.5   332.8     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      98     149     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3077

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.18    1.12  364.15    2.53  364.12    3.97   364.1    8.56   364.2
    8.98   364.2   10.31  364.25   11.19  364.24   13.14  364.15    13.5  364.12
   14.57     364   18.43  363.88   21.38  363.78   24.61  363.74   33.92  363.48
   39.77  363.33   48.31  362.93   50.98  362.82   61.21  362.37   63.02  362.31
    70.2     362   74.59   361.6    77.1  361.43   82.58  360.97   83.28  360.94
   95.42  360.41   99.21  360.31  103.01  360.23  103.64  360.21  104.52  360.13
  105.54     360  107.69  359.58  114.03     358  134.95   356.4  140.36     356
  163.01  355.01  179.63  355.11  193.39  354.95  204.81  355.12  210.64  354.59
  210.65  354.59     217  354.02  219.69  351.67  221.67  350.95  222.49  350.87
   223.8  350.87  226.26  350.75  228.21  350.72  229.11  350.89  230.73  354.07
  234.33  355.41   241.4  355.41  250.01  355.42  265.82  356.22  283.13  356.64
  290.94  357.97  293.37  357.99  293.48     358  295.67  358.42  300.65   359.3
   303.5  359.83  304.53     360  320.68  361.37  322.55  361.51  328.44     362
  330.19  362.24  341.42     364  344.14   364.6  349.88     366  354.73  367.09

Manning's n Values        num=       3
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Sta	n Val	Sta	n Val	Sta	n Val
0	.075	204.81	.04	234.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204.81	234.33	99.64	98.98	98.39	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2978

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	362.91	26.14	362.3	28.29	362.14	29.8	362.2	30.23	362.16
30.97	362	35.23	361.59	35.47	361.59	37.04	361.43	37.26	361.43
38.5	361.3	38.73	361.31	45.76	360.54	80.82	360.96	102.15	360.38
114.55	360.01	118.88	359.77	161.71	358.87	229.91	358	230.71	357.16
236.45	357.02	243.79	356.29	243.81	356.29	245.02	356.16	250.07	353.33
252.35	352.96	254.47	350.89	255.74	350.56	257.29	350.63	259.41	350.68
261.6	350.53	263.18	350.69	263.71	350.84	265.48	354.05	274.04	355.2
274.05	355.2	275.87	355.44	297.22	357.18	316.25	361.84	320.6	362.22
347.97	363.14	347.98	363.82	352.13	364	360.46	364.7	368.43	365.33
374.4	365.77	378.19	366	379.71	366.15	380.66	366.19	383.79	366.08
384.49	366.11	386.36	366	389.31	365.95	390.69	366	391.27	366.26
391.59	366.47	398.39	367.21	402.86	368	410.75	370	415.21	370.52
417.39	370.39	425.64	370.89	432.78	372	437.01	373.28	442.02	374.48
446.02	375.38	448.25	375.83	449.28	376	451.72	376.13	455.64	376.24
456.7	376.24	472.15	376.84	479.93	377.06	491.12	376.37		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	245.02	.04	274.04	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.02	274.04	61.85	60.74	60.21	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	141.71	359.42	F
333.74	436.4	359.42	F
436.4	487.3	370	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
23.3	86.1	370	160.1	223.6	370	343	389	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2917

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84
653.46	371.06	662.64	371.32	668.42	372	676.66	372.58	679.51	372.87

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	440.02	.04	471.92	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
440.02	471.92	89.63	90.26	89.98	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	409.3	359.42	F
485.9	679.51	359.42	F

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 2900

INPUT
Description: Frederick Road
Distance from Upstream XS = 32
Deck/Roadway Width = 33
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 15

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	368.5		23	368		86	366	
146	364		200	362		259	360	
337.5	359.415		380.1	359.626		407.4	359.923	
427.3	360.169		456.8	360.827		563.7	363.651	
590	364		641	366		679.51	367	

Upstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84
653.46	371.06	662.64	371.32	668.42	372	676.66	372.58	679.51	372.87

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	440.02	.04	471.92	.075

Bank Sta: Left Right Coeff Contr. Expan.
440.02 471.92 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	409.3	359.42	F
485.9	679.51	359.42	F

Downstream Deck/Roadway Coordinates
num= 13

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	368		60	366		120	364	
174	362		234	360		312.1	359.415	
354.5	359.626		382.1	359.923		401.6	360.169	
431.7	360.827		538.1	363.651		556	364	
615	366							

Downstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31

```
  432.77  354.32  441.96   355.6  462.76  357.08  477.11  359.05  499.49  362.25
  513.76  363.04  527.63     362  539.48  362.57  551.98  362.82  561.27  363.13
  572.05  363.79   574.3     364  591.29  364.92   612.3  365.73  623.32  366.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   400.8     .04  432.64    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         400.8  432.64             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  395.05     356       F
   445.1  623.32     356       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch    8.25   12.78
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                20    56.5     .024     .024        0                  .5               1
Upstream   Elevation =  350.33
           Centerline Station =  456
Downstream Elevation =  350.16
           Centerline Station =  421

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        133.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          3.34
  Q Barrel (cfs)            133.00    Culv Vel DS (ft/s)          3.20
  E.G. US. (ft)             354.05    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             353.87    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              353.91    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              353.64    Culv Exit Loss (ft)         0.00
  Delta EG (ft)               0.14    Culv Entr Loss (ft)         0.09
  Delta WS (ft)               0.23    Q Weir (cfs)
  E.G. IC (ft)              352.92    Weir Sta Lft (ft)
  E.G. OC (ft)              354.05    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        353.79    Weir Max Depth (ft)
  Culv WS Outlet (ft)       353.75    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.46    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         1.85    Min El Weir Flow (ft)     359.43


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        206.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          4.32
  Q Barrel (cfs)            206.00    Culv Vel DS (ft/s)          4.21
  E.G. US. (ft)             354.82    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             354.59    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              354.58    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              354.32    Culv Exit Loss (ft)         0.02
  Delta EG (ft)               0.25    Culv Entr Loss (ft)         0.15
  Delta WS (ft)               0.27    Q Weir (cfs)
  E.G. IC (ft)              353.70    Weir Sta Lft (ft)
  E.G. OC (ft)              354.82    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        354.39    Weir Max Depth (ft)
  Culv WS Outlet (ft)       354.32    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         3.23    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.35    Min El Weir Flow (ft)     359.43


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1
```

Q Culv Group (cfs)	404.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.79
Q Barrel (cfs)	404.00	Culv Vel DS (ft/s)	6.80
E.G. US. (ft)	356.53	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	356.28	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	355.63	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	355.28	Culv Exit Loss (ft)	0.37
Delta EG (ft)	0.90	Culv Entr Loss (ft)	0.36
Delta WS (ft)	1.00	Q Weir (cfs)	
E.G. IC (ft)	355.57	Weir Sta Lft (ft)	
E.G. OC (ft)	356.53	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	355.45	Weir Max Depth (ft)	
Culv WS Outlet (ft)	355.28	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	5.19	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	359.43

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	773.83	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.65
Q Barrel (cfs)	773.83	Culv Vel DS (ft/s)	11.34
E.G. US. (ft)	359.47	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	359.30	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	356.61	Culv Frctn Ls (ft)	0.71
W.S. DS (ft)	356.17	Culv Exit Loss (ft)	1.56
Delta EG (ft)	2.86	Culv Entr Loss (ft)	0.88
Delta WS (ft)	3.13	Q Weir (cfs)	0.17
E.G. IC (ft)	358.77	Weir Sta Lft (ft)	330.83
E.G. OC (ft)	359.47	Weir Sta Rgt (ft)	347.53
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	356.82	Weir Max Depth (ft)	0.05
Culv WS Outlet (ft)	356.17	Weir Avg Depth (ft)	0.02
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	0.41
Culv Crt Depth (ft)	4.95	Min El Weir Flow (ft)	359.43

Warning: During the culvert inlet control computations, the program could not balance the culvert/weir flow. The reported
inlet energy grade answer may not be valid.
Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	863.91	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.17
Q Barrel (cfs)	863.91	Culv Vel DS (ft/s)	11.84
E.G. US. (ft)	360.30	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.14	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	357.19	Culv Frctn Ls (ft)	1.15
W.S. DS (ft)	356.69	Culv Exit Loss (ft)	1.68
Delta EG (ft)	3.11	Culv Entr Loss (ft)	0.97
Delta WS (ft)	3.45	Q Weir (cfs)	202.09
E.G. IC (ft)	360.21	Weir Sta Lft (ft)	251.89
E.G. OC (ft)	360.30	Weir Sta Rgt (ft)	432.98
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	357.39	Weir Max Depth (ft)	0.88
Culv WS Outlet (ft)	356.69	Weir Avg Depth (ft)	0.55
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	99.80
Culv Crt Depth (ft)	5.34	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	906.56	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.18
Q Barrel (cfs)	906.56	Culv Vel DS (ft/s)	11.57
E.G. US. (ft)	360.86	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.67	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	357.86	Culv Frctn Ls (ft)	0.88
W.S. DS (ft)	357.34	Culv Exit Loss (ft)	1.56
Delta EG (ft)	3.00	Culv Entr Loss (ft)	0.97

Delta WS (ft)	3.33	Q Weir (cfs)	558.44
E.G. IC (ft)	360.78	Weir Sta Lft (ft)	234.34
E.G. OC (ft)	360.86	Weir Sta Rgt (ft)	457.13
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	357.95	Weir Max Depth (ft)	1.42
Culv WS Outlet (ft)	357.34	Weir Avg Depth (ft)	0.94
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	209.04
Culv Crt Depth (ft)	5.54	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2827

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
400.8	432.64	59.3	67.61	75.81	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	395.05	356	F
445.1	623.32	356	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2759

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	372.77	2.31	372.75	3.21	372.76	3.79	372.7	5.35	372.51
10.05	372	17.86	370.67	21.54	370	22.94	369.68	29.73	368
38.04	366	41.31	365.14	46.41	364	49.98	363.37	58.32	362
62.31	361.29	70.12	360	83.48	358.75	88.76	358.48	93.5	358.22
94.45	358.15	97.16	358	128.47	356.25	137.97	356	166.97	354.77
188.46	354.27	206.85	354.18	213.44	353.14	217.92	353.75	217.94	353.75
221.54	354.24	229.72	353.68	232.16	349.32	242.11	350.03	244.47	353.83
247.97	353.92	254.64	354.1	273.96	354.9	288.2	354.55	327.4	356
337.32	356.54	361.29	357.92	361.9	358	364.26	358.17	365.41	358.24
367	358.37	372.78	358.74	375.31	358.81	388.46	358.79	394.15	358.8
397.84	358.95	400.41	358.96	402.23	359.06	404.53	359.21	405.49	359.23
408.57	359.48	408.95	359.49	411.45	359.7	411.87	359.72	415.03	359.99
415.31	360	417.03	360.2	418.39	360.3	428.8	360.31	433.64	360.4
438.69	360.56	442.82	360.73	450.11	361.09	466.87	362	474.25	362.98
481.02	364	491.61	366	492.4	366.16	501.24	368		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .075  229.72     .04  244.47    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        229.72  244.47           166.79  169.71   170.1             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2589

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   370.5    6.39     370    8.12  369.55    9.88  369.06   13.59     368
   15.68  366.43   16.18     366    16.5  365.69   18.44     364   19.42     363
   20.51     362   21.74  361.02   22.67     360   27.21  358.55   28.42  358.17
   28.89     358    48.8     356   56.94  355.65   62.31  355.06    97.9  354.08
  104.04  353.91  106.64  349.71  112.07   349.9  114.29     352  118.86  352.08
  128.02  352.48  129.83  352.56   142.4  352.11  158.46  352.06  163.77  353.31
  176.98  353.81  195.26  354.09  212.76  355.32  219.91  355.94  220.06  355.97
  220.33     356  220.34     356  220.77  356.04  224.36   356.3   227.8  356.43
  228.59  356.43  235.01  356.02  235.26     356  235.49     356  244.56  356.04
   247.2  356.04  248.45  356.03  254.75  356.02   257.6  356.01   259.1     356
  259.88  356.04  262.22  356.13  262.67  356.15  272.42  356.42  274.41   356.5
  275.87  356.57  277.84  356.65  283.08   356.9  287.67   357.1  289.83   357.2
     291  357.25  295.04  357.45  305.68     358  327.61  359.52  335.25     360
  342.18  360.46  349.91  360.96  357.47  361.46  361.02  361.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  104.04     .04  114.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        104.04  114.29           102.11  104.17  106.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2485

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.38    4.47  368.19    8.54  368.03     9.3     368   11.37  367.71
   12.69   367.6   12.97  367.59   21.49  367.83   21.72  367.79   24.75  367.98
   24.78  367.97   25.94  368.02   27.18  368.02   28.49  367.97   29.82  367.87
   30.25  367.77   31.68  367.58   33.56  367.26      35  366.85   38.23     366
   38.64  365.88   39.08  365.73   41.93  364.86   44.58     364   51.26  362.13
   51.81     362   52.07  361.95   53.08  361.71   59.58  360.24    60.5     360
   66.26  358.56   68.19     358   79.86  356.07    80.2     356  108.17   354.1
  116.73   353.3  136.32  353.03  148.67  352.95   152.4  351.89   153.8  351.49
  156.31  351.59  159.04  352.43  164.74  351.94  168.76   349.2  174.15  349.34
  176.14  352.31  183.78  352.86  185.84  353.01  202.53  353.09  228.12  353.77
  242.58     354  243.08  354.08  268.03  355.47   271.1  355.65  276.88     356
  279.61  356.42  290.09     358   293.7  358.35  295.16  358.52  296.99  358.71
  299.04  359.06  299.15  359.06  301.56  358.95  310.74  358.55  311.53  358.57
  326.08     360  343.08     362  362.94  363.92  363.84     364  373.86  364.98
  379.95  365.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  164.74     .04  176.14    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        164.74  176.14           153.6  154.59  153.42             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2331

INPUT
Description:
Station Elevation Data    num=      61
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.49	6.68	364.41	7.02	364.4	14.19	364.07	14.82	364.03
15.07	364	20.81	363.68	24.25	363.45	29.07	363.13	39.92	362.46
45.16	362.09	46.53	362	47.28	361.49	49.54	360	52.15	358.3
52.62	358	55.48	356.39	56.22	356	57.41	355.85	63.81	354.98
71.45	353.58	95.41	352.52	117.31	352.1	137.93	352.42	139.13	352.39
143.89	352.26	149.2	348.51	154.15	348.1	159.57	348.42	163.74	351.17
170.01	352.12	172.55	352.5	187.7	353.21	192.26	353.51	195.07	354
218.88	355.98	218.91	355.98	219.4	355.99	219.65	356	241.82	357.49
246.88	357.84	249.17	358	261.51	359.33	265.1	359.63	265.64	359.68
269.31	360	281.07	361.43	286.16	362	288.44	362.36	288.85	362.43
290.52	362.72	297.61	364	300.67	364.91	304.17	366	307.87	366.43
309	366.5	310.22	366.57	314.29	366.95	316.04	367.1	316.75	367.15
319.13	367.28								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	143.89	.04	163.74	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
143.89	163.74	179.37	177.6	175.87	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2153

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.32	3.92	364.56	4.01	364.56	8.3	364.3	12.46	364.04
12.76	364.02	13.08	364	13.25	363.87	13.45	363.73	16.05	362
16.68	361.53	18.91	360	20.77	358.61	21.6	358	21.89	357.75
24.09	356	30.84	354.47	33.11	354	52.92	352.32	74.07	351.81
101.65	351.28	120.22	351.43	120.5	351.43	127.63	349.88	130.12	350.05
131.34	346.86	142	346.39	144.29	352.45	150.56	352.61	153.23	352.68
168.08	353.97	172.88	354.8	182.71	356	183.66	356.09	183.87	356.11
184.85	356.22	185.07	356.24	187.04	356.46	193.55	357.16	200.75	358
212.41	359.89	213.06	360	217.64	360.89	223.61	362	228.58	363.12
232.74	364	234.97	364.51	241.92	366	244.79	366.58	251.21	368
256.5	369.43	258.4	370	259.7	370.42	264.45	372	269.94	372.39
273.44	372.63								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	130.12	.04	144.29	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
130.12	144.29	160.15	158.75	157.04	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1994

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.16	1.03	359.27	6.73	358.67	10.37	358.29	12.97	358
17.14	356.63	19	356	24.53	354.42	26.07	354	48.12	352.4
57.17	351.28	75.62	351.28	92.39	351.14	101.12	350.8	106.95	350.57
106.96	350.57	116.46	350.19	118.2	346.45	127.95	346.81	131.85	351.13
136.96	351.29	150.75	351.72	165.28	352.31	177.37	352.98	196.01	354
199.93	354.72	201.85	354.82	202.83	354.87	204.78	354.98	212.96	355.47
214.68	355.8	216.21	355.53	218.47	355.7	222.42	356	236.41	357.33
243.08	358	253.87	359.4	258.55	360	260.61	360.31	272.91	362
275.22	362.56	277.16	363.07	277.31	363.11				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	116.46	.04	131.85	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
116.46	131.85	108.1	106.05	103.75	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1888

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.32	3.66	359.97	3.97	359.97	9.29	359.12	9.61	359.1
10.06	359.05	11.3	358.9	12.39	358.76	16.42	358	26.85	356.12
27.4	356	44.51	354.47	49.85	354	68.2	352.46	81.53	351.35
104.16	350.46	120.73	349.86	122.9	349.65	122.92	349.65	129.91	349
132.99	345.73	137.07	345.92	142.97	349.5	150.38	349.68	153.97	350.05
163.02	350.99	180.43	351.29	195.81	351.74	212.9	353.83	217.47	354.81
227.64	355.42	283.48	356	287.69	356.35	288.71	356.43	290.19	356.54
297.25	357.04	307.21	357.78	310.66	358	311.09	358.05	315.51	358.54
318.4	358.88	320.31	359.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	129.91	.04	142.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
129.91	142.97	61.13	58.24	54.2	.3	.5

BRIDGE

RIVER: Plumtree
REACH: Plumtree RS: 1850

INPUT
Description: Private Bridge
Distance from Upstream XS = 18.5
Deck/Roadway Width = 16
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 8

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
3.66	359.97		81.5	359.87	357.87	101.7	360.452	358.452
126.6	360.865	358.865	153	360.835	358.835	175.1	360.491	358.491
201	360.491	358.491	320.31	359.1				

Upstream Bridge Cross Section Data
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.32	3.66	359.97	3.97	359.97	9.29	359.12	9.61	359.1
10.06	359.05	11.3	358.9	12.39	358.76	16.42	358	26.85	356.12
27.4	356	44.51	354.47	49.85	354	68.2	352.46	81.53	351.35
104.16	350.46	120.73	349.86	122.9	349.65	122.92	349.65	129.91	349
132.99	345.73	137.07	345.92	142.97	349.5	150.38	349.68	153.97	350.05
163.02	350.99	180.43	351.29	195.81	351.74	212.9	353.83	217.47	354.81
227.64	355.42	283.48	356	287.69	356.35	288.71	356.43	290.19	356.54
297.25	357.04	307.21	357.78	310.66	358	311.09	358.05	315.51	358.54
318.4	358.88	320.31	359.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	129.91	.04	142.97	.075

Bank Sta: Left	Right	Coeff Contr.	Expan.
129.91	142.97	.3	.5

Downstream Deck/Roadway Coordinates
num= 7

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	359.24		91.4	359.823	357.823	114.8	360.523	358.523
139.8	360.92	358.92	165	360.892	358.892	189.6	360.465	358.465
211.7	359.771	357.771						

Downstream Bridge Cross Section Data
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61

```
  143.36  346.68  149.09  351.02  155.33  350.92  161.76  350.82  177.15  351.12
  196.32  351.55  209.07  352.05  209.56  359.76  230.29  360.75  314.46  356.32
     319  356.67  323.81  357.07  332.17  357.73  334.02  357.88  335.57     358
  340.94  358.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   131.1     .04  149.09    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         131.1  149.09             .3       .5

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)               350.13    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               349.95    E.G. Elev (ft)              350.08        350.00
  Q Total (cfs)               133.00    W.S. Elev (ft)              349.89        349.92
  Q Bridge (cfs)              133.00    Crit W.S. (ft)              348.31        348.34
  Q Weir (cfs)                          Max Chl Dpth (ft)             4.16          3.31
  Weir Sta Lft (ft)                     Vel Total (ft/s)              3.02          1.81
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            44.07         73.44
  Weir Submerg                          Froude # Chl                  0.36          0.27
  Weir Max Depth (ft)                   Specif Force (cu ft)         77.92         93.30
  Min El Weir Flow (ft)       359.11    Hydr Depth (ft)               1.35          1.75
  Min El Prs (ft)             358.87    W.P. Total (ft)              35.16         43.69
  Delta EG (ft)                 0.16    Conv. Total (cfs)          2556.8        3632.6
  Delta WS (ft)                 0.07    Top Width (ft)               32.68         42.08
  BR Open Area (sq ft)        994.03    Frctn Loss (ft)               0.03          0.03
  BR Open Vel (ft/s)            3.02    C & E Loss (ft)               0.05          0.00
  BR Sluice Coef                        Shear Total (lb/sq ft)        0.21          0.14
  BR Sel Method          Energy only    Power Total (lb/ft s)         0.64          0.25


BRIDGE OUTPUT  Profile #2-YR

  E.G. US. (ft)               350.78    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               350.55    E.G. Elev (ft)              350.72        350.61
  Q Total (cfs)               206.00    W.S. Elev (ft)              350.47        350.50
  Q Bridge (cfs)              206.00    Crit W.S. (ft)              348.95        348.98
  Q Weir (cfs)                          Max Chl Dpth (ft)             4.74          3.89
  Weir Sta Lft (ft)                     Vel Total (ft/s)              2.99          2.05
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            68.87        100.52
  Weir Submerg                          Froude # Chl                  0.40          0.24
  Weir Max Depth (ft)                   Specif Force (cu ft)        120.45        151.10
  Min El Weir Flow (ft)       359.11    Hydr Depth (ft)               1.28          1.79
  Min El Prs (ft)             358.87    W.P. Total (ft)              56.50         58.37
  Delta EG (ft)                 0.21    Conv. Total (cfs)          3710.3        5129.8
  Delta WS (ft)                 0.07    Top Width (ft)               53.99         56.09
  BR Open Area (sq ft)        994.03    Frctn Loss (ft)               0.03          0.04
  BR Open Vel (ft/s)            2.99    C & E Loss (ft)               0.07          0.01
  BR Sluice Coef                        Shear Total (lb/sq ft)        0.23          0.17
  BR Sel Method          Energy only    Power Total (lb/ft s)         0.70          0.36
```

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	351.88	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	351.60	E.G. Elev (ft)	351.81	351.69
Q Total (cfs)	404.00	W.S. Elev (ft)	351.49	351.53
Q Bridge (cfs)	404.00	Crit W.S. (ft)	350.48	349.79
Q Weir (cfs)		Max Chl Dpth (ft)	5.76	4.92
Weir Sta Lft (ft)		Vel Total (ft/s)	2.73	2.24
Weir Sta Rgt (ft)		Flow Area (sq ft)	147.93	180.69
Weir Submerg		Froude # Chl	0.33	0.25
Weir Max Depth (ft)		Specif Force (cu ft)	254.15	312.13
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.39	1.73
Min El Prs (ft)	358.87	W.P. Total (ft)	108.83	108.18
Delta EG (ft)	0.25	Conv. Total (cfs)	6976.0	9494.1
Delta WS (ft)	0.07	Top Width (ft)	106.16	104.60
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.73	C & E Loss (ft)	0.08	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.28	0.19
BR Sel Method	Energy only	Power Total (lb/ft s)	0.78	0.42

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	352.99	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	352.70	E.G. Elev (ft)	352.93	352.84
Q Total (cfs)	774.00	W.S. Elev (ft)	352.63	352.63
Q Bridge (cfs)	774.00	Crit W.S. (ft)	351.83	350.99
Q Weir (cfs)		Max Chl Dpth (ft)	6.90	6.02
Weir Sta Lft (ft)		Vel Total (ft/s)	2.76	2.52
Weir Sta Rgt (ft)		Flow Area (sq ft)	280.05	307.07
Weir Submerg		Froude # Chl	0.30	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	537.83	622.60
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	2.33	2.60
Min El Prs (ft)	358.87	W.P. Total (ft)	124.44	123.37
Delta EG (ft)	0.23	Conv. Total (cfs)	13981.8	17116.4
Delta WS (ft)	0.06	Top Width (ft)	120.32	118.06
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.76	C & E Loss (ft)	0.05	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	0.43	0.32
BR Sel Method	Energy only	Power Total (lb/ft s)	1.19	0.80

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	353.64	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	353.35	E.G. Elev (ft)	353.58	353.50
Q Total (cfs)	1066.00	W.S. Elev (ft)	353.26	353.25
Q Bridge (cfs)	1066.00	Crit W.S. (ft)	352.23	351.61
Q Weir (cfs)		Max Chl Dpth (ft)	7.53	6.64
Weir Sta Lft (ft)		Vel Total (ft/s)	2.99	2.81
Weir Sta Rgt (ft)		Flow Area (sq ft)	356.14	380.03
Weir Submerg		Froude # Chl	0.29	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	778.17	875.16
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	2.96	3.22
Min El Prs (ft)	358.87	W.P. Total (ft)	125.71	124.61
Delta EG (ft)	0.24	Conv. Total (cfs)	19184.3	22572.9
Delta WS (ft)	0.08	Top Width (ft)	120.22	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.99	C & E Loss (ft)	0.03	0.05
BR Sluice Coef		Shear Total (lb/sq ft)	0.55	0.42
BR Sel Method	Energy only	Power Total (lb/ft s)	1.63	1.19

BRIDGE OUTPUT Profile #200-YR

E.G. US. (ft)	354.35	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.02	E.G. Elev (ft)	354.27	354.20
Q Total (cfs)	1465.00	W.S. Elev (ft)	353.90	353.88
Q Bridge (cfs)	1465.00	Crit W.S. (ft)	352.71	352.21
Q Weir (cfs)		Max Chl Dpth (ft)	8.17	7.27
Weir Sta Lft (ft)		Vel Total (ft/s)	3.39	3.23
Weir Sta Rgt (ft)		Flow Area (sq ft)	432.78	453.94
Weir Submerg		Froude # Chl	0.30	0.30
Weir Max Depth (ft)		Specif Force (cu ft)	1095.53	1202.49
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.60	3.85
Min El Prs (ft)	358.87	W.P. Total (ft)	126.99	125.86
Delta EG (ft)	0.27	Conv. Total (cfs)	25157.7	28800.2

Delta WS (ft)	0.13	Top Width (ft)	120.13	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	3.39	C & E Loss (ft)	0.03	0.07
BR Sluice Coef		Shear Total (lb/sq ft)	0.72	0.58
BR Sel Method	Energy only	Power Total (lb/ft s)	2.44	1.88

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1830

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.1	149.09	183.1	189.46	194.94	.3	.5

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1641

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.1	4.25	358	4.42	357.95	4.44	357.94	5.13	357.91
5.87	357.89	19.69	357.39	35.1	356.79	40.55	356.56	48.51	356.22
50.1	356.16	53.65	356	83.2	353.06	108.43	350.69	126.88	349.28
127.65	348.68	128.6	347.92	138.1	348.36	140.07	345.19	146.51	345.53
151.14	349.6	158.59	349.89	158.6	349.89	162.23	350.02	178.14	350
203.35	350.65	232.7	352	242.28	353.59	244.74	354	245.26	354.15
247.65	354.81	250.51	355.6	252.04	356	253.98	356.59	258.69	358
258.77	358.02	262.44	359.03	266	360	266.2	360.05	268.14	360.44
269.28	360.66	271.48	361.07	272.68	361.28	273.3	361.39		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	138.1	.04	151.14	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.1	151.14	176.17	177.29	178.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1463

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	356.46	5.61	356.33	11.71	356.19	16.33	356.06	18.18	356.02
18.32	356.02	18.54	356	21.8	355.67	22.14	355.65	22.36	355.64
22.69	355.6	22.89	355.58	27.15	355.19	29.24	355.09	30.76	355.02
40.4	354.87	40.86	354.85	41.76	354.8	42.75	354.73	52.82	354
69.61	352.87	75.51	352.42	79.43	352.14	79.72	352.12	81.65	352
84.43	351.86	90.72	351.56	92.09	351.48	94.79	351.34	97.19	351.19
107.32	350.52	111.7	350.26	115.41	350	138.29	349.1	159.11	349.1
178.46	349.47	180.13	349.17	185.3	348.24	187.99	347.08	189.19	343.45
196.87	343.35	197.98	346.06	206.54	348.53	210.52	348.75	210.53	348.75

```
  221.24  349.34  234.53  349.78  266.44  352.56  278.62     358  283.38  359.43
  285.38     360     287  360.55  290.28  361.58  291.64     362  294.58  362.89
  295.91  363.28  296.57  363.47  298.25     364   302.9  365.77  303.51     366
  309.02  367.06  310.22  367.29  310.97  367.42  314.74     368  315.87  368.18
  323.73  369.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  180.13     .04  206.54    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        180.13  206.54           172.51  172.28  171.74             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1291

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  363.49     2.9  363.09   10.68  362.14   11.86     362   19.26  360.55
   22.08     360   26.38  358.97   30.59     358    34.4  357.21   38.91     356
   43.26  354.82   46.23  354.17   47.03     354   49.14  353.62   58.14     352
   66.85  350.97    70.1  350.58   71.43  350.42   75.07     350  108.53  348.38
  120.68  348.74  128.48  348.81  133.87  347.09   136.5  346.81  137.71   345.2
  141.95  344.89  151.53  345.15  155.49  348.28  157.84   348.3  161.16  349.47
  178.09  349.55  199.34  350.93  214.63   351.7   228.4  351.81  242.53  351.32
  264.66  350.52  286.44  349.15  310.41  348.72  338.21     349  371.72  348.77
   400.9  348.48   416.8  348.59  427.74  348.67  430.58  344.68   431.8  344.26
  436.65  344.85  441.26  344.51  442.29  347.58  447.46  349.08  448.01  349.24
  458.85  350.67   471.3  352.75  481.29  354.33  491.23  357.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  427.74     .04  447.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        427.74  447.46            167.7  167.44  166.86             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1124

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  365.04    4.51  364.72    9.16  364.27    9.25  364.27   12.12     364
    15.5  363.29   21.22     362   23.39  361.54   30.93     360   35.95  358.97
   39.85  358.17   50.58     356   54.08   355.4   62.03     354   62.65  353.83
   63.34  353.65   73.01   352.9   74.16  352.78   80.64     352   83.69  351.62
   99.16     350   114.6  348.69  124.02  348.63   131.1  347.62  149.71  348.01
  162.72  347.51  168.53  347.49  170.35  344.49  173.71  344.74  179.87  343.88
  182.52  344.16  184.05  346.89  186.24     347  189.68  348.23  195.55  348.19
     207   347.6  214.71  347.82  233.96  347.66  252.64   348.2  276.32   348.2
  304.29  347.84  332.45  347.91  346.81  348.51  347.97   348.3     348   348.3
  350.12  347.92  353.36   347.9  355.26  348.34   360.2  343.58   367.1  344.05
  375.37  349.26  378.03   349.7  378.05   349.7  380.33  350.08  392.73  351.02
  398.58  351.56  403.03  351.81  420.09     354  435.53     356  439.63  356.61
  442.77  357.02  450.32     358  455.33  358.77   457.5  359.06  460.77  359.47
  461.87  359.63  462.18  359.68   465.1     360  473.65  361.11  476.71  361.53
  479.97     362  480.72  362.12  480.94  362.16  483.56  362.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  355.26     .04  375.37    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        355.26  375.37           134.05  129.91   125.5             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     8.7    60.7     360

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 994

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.1	9.62	358	14.71	356.95	19.8	356	30.42	354.45
33.38	354	36.49	353.7	54.6	352	57.99	351.76	59.66	351.64
70.88	350.84	72.94	350.7	82.85	350	114.72	348.11	135.81	347.8
150.43	347.49	170.48	346.43	171.74	343.41	176.87	342.99	186.86	344.33
188.91	347.54	212.62	347.3	226.74	347	231.31	347.32	247.53	347.69
256.13	347.8	270.71	347.72	281.14	348.11	284.5	347.5	286.04	347.21
292.04	347.03	296.33	343.73	302.06	343.28	306.33	342.85	309.85	346.99
314.78	348.42	315.81	348.64	315.83	348.64	320.17	349.59	333.26	350.57
351	352.36	364.37	354	373	355.3	375.39	355.67	377.77	356
383.23	356.87	390.35	358	393.92	358.56	397.2	359.05	403.45	360
407.85	360.84	413.86	362	417.04	362.66				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	281.14	.04	315.83	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
281.14	315.83	82.93	82.66	81.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 911

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	2.24	358.56	3.51	358.32	5.22	358	12.31	356.66
15.03	356.09	15.46	356	22.75	354.09	23.08	354	23.55	353.96
24.83	353.84	24.92	353.83	25.43	353.83	29.76	353.58	30	353.57
30.58	353.5	31.25	353.48	33.98	353.69	35.3	353.7	36.97	353.98
37.02	353.98	37.13	354	37.9	354.04	38.06	354.05	38.27	354.04
38.32	354.04	38.42	354.03	38.82	354	38.99	353.95	39.2	353.82
44.56	353.53	50.12	353.05	56.89	352.42	59.95	352.14	61.41	352
82.47	350.57	91.08	350	100.51	349.7	117.56	348.31	130.96	347.87
157.71	347.03	178.22	347.23	181.99	344.27	189.47	343.55	196.66	344.12
201.78	347.5	223.44	347.06	243.05	346.93	252.46	346.76	252.6	346.85
292.54	347.06	306.34	347.38	312.43	347.51	317.18	343.33	321.46	342.92
325.5	343.21	332.27	348.29	337.05	349	337.06	349	351.26	351.11
381.21	355.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	312.43	.04	332.27	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
312.43	332.27	138.48	148.66	157.22	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 762

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.13	2.35	357.03	6.48	356.67	7.69	356.61	9.39	356.51
14.41	356	19.83	355.44	21	355.32	22.74	355.12	32.28	354
34.37	353.8	35.36	353.71	51.57	352.14	52.81	352.02	53.01	352
61.67	351.41	65.26	351.17	67.97	350.99	73.71	350.62	76.99	350.42
81.35	350.17	81.78	350.14	84.01	350.03	84.52	350	108.7	348.46
145.52	346.99	169.46	347.05	186.24	347.42	197.19	345.22	199.28	343.68
205.18	343.3	208.29	343.86	210.89	346.07	228.95	347.18	235.77	347.3
240.55	347.28	244.65	347.26	244.66	347.26	252.8	347.23	257.6	343.09
259.66	342.54	263.98	342.94	271.9	344.77	276.21	346.65	276.24	346.66
276.97	346.98	298.22	347.67	328.56	347.99	360.33	351.01	370.76	351.97

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  371.89     352   373.6  352.14  375.07  352.27  376.35   352.4  384.34  353.82
  384.65  353.87  384.83   353.9  384.94  353.92   385.3     354     392  355.62
  393.35     356  395.32   356.4  403.54     358  408.28  358.51  410.83  358.82
  411.55  358.82  412.84   358.8  416.14  358.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   252.8     .04  276.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         252.8  276.97           101.69  104.14  104.96             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   366.8   407.4     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 658

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  358.95    2.26  358.79     5.3  358.55    9.28   358.2   11.48     358
   14.26  357.65   16.66  357.36   20.41  356.87   26.22  356.16   35.44  355.02
   41.74  354.15   42.79     354   59.31   352.1    59.6  352.07   59.76  352.05
    60.3     352   70.49  351.39    76.4  351.02   86.06  350.44   92.55     350
  118.81     348  200.75  346.51  222.09  346.42  240.59  346.42   245.1  346.43
  248.95  343.16  255.63  340.34   262.8   340.2  267.31  342.59  270.68  343.91
  277.89  346.74  301.79  346.57  332.03  346.36  388.47  347.88  391.63  347.92
  394.29  347.92  394.49  347.91  400.05     348  401.61  348.21  402.93   348.4
  404.42  348.65   405.7  348.87  406.58  349.04  407.19  349.17  412.03     350
  415.92  350.98  417.72  351.13  418.47  351.21  420.03  351.39  422.64  351.75
  422.86  351.79  424.26     352  426.31  352.71  429.22  353.83  429.43  353.91
  429.85  354.09  434.45     356  442.51  357.75  442.83  357.83  443.54     358
  450.24  358.39  464.98  359.29  465.18  359.32  466.53  359.48  470.64     360
  471.72  360.06  477.88   360.4  481.52  360.61  490.37  361.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   245.1     .04  277.89    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         245.1  277.89           129.48  132.55  137.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 526

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  357.29    9.33  356.07    9.88     356   15.36  355.41   18.93  355.03
      21  354.81   28.17     354   30.46  353.79    34.1  353.48   42.62  352.81
   46.05  352.53    47.8   352.4   49.22  352.29   53.02     352   59.04  351.42
   61.87  351.16   67.63  350.62   73.95     350   93.12  348.67  121.73  346.39
  157.75  346.18  186.76  345.79  188.34  345.18  188.36  345.17  195.28  342.48
  203.56  341.63  212.23  342.05  213.87   346.6  218.56  346.44  218.57  346.44
  237.47   345.8  275.28  345.64  307.64  346.39  309.73  346.39   311.5  346.41
  313.11  346.41  314.75   346.4  329.39  346.38  337.83  346.31  340.98  346.28
  350.53  346.19  372.03     346  378.64  346.57  382.54   346.9  390.22  347.56
  395.28     348  402.02  349.12  407.12     350  408.46  350.19  409.19  350.29
  409.96  350.41  415.16  351.21  417.91  351.63  420.21     352  425.22  352.92
  430.26     354  432.81  354.65  434.33     355  437.88  355.74  438.42  355.87
  439.17     356  441.01  356.24   446.9  356.96  448.95  357.26  452.86  357.84
  453.18  357.89  453.89     358  458.07  358.55  459.62  358.79  462.41  359.19
  467.23     360  483.54  360.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.76     .04  213.87    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.76  213.87           143.66  145.78  147.57             .1       .3
```

Blocked Obstructions num= 1

Sta L	Sta R	Elev
443	476.3	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 380

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.67	.48	366.64	10.41	366	17.37	364.74	21.25	364
25.91	363.14	31.6	362	37.28	360.91	41.95	360	46.91	359.56
63.27	358	71.54	357.11	76.74	356.56	81.96	356	84.51	355.63
95.36	354	101.45	352.61	104.07	352	106.08	351.38	110.9	350
116.69	348.33	117.74	348	119.59	347.7	121.4	347.41	126.04	346.65
130	346	133.26	346.1	135.45	346.16	138.15	346.24	146.78	346.47
149.42	346.45	150.34	346.44	151.1	346.43	151.57	346.42	155.44	346.29
164.04	345.66	193.28	345.53	212.79	346.39	212.81	346.39	215.37	346.51
219.06	341.92	227.8	342.05	238.17	343.21	243.49	346.6	243.7	346.6
243.72	346.59	260.79	346.48	291.92	346.27	304.59	346	319.84	347.43
322.97	347.65	328.49	348	330.64	348.16	332.41	348.38	334.7	348.61
337.77	348.94	346.14	350	350.1	350.95	354.1	352	360.75	353.66
362.11	354	365.83	354.84	369.98	355.77	370.39	355.85	371.06	356
372.08	356.17	382.09	358	386.28	358.59	390.61	359.14		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.37	.04	243.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.37	243.7	235.8	234.15	232.25	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10	44.6	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 146

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	6.37	358.83	15.88	358.07	16.47	358.02	16.84	358
21.14	357.01	25.77	356	28.06	355.5	30.16	355.06	34.73	354.18
35.2	354.08	35.66	354	37.68	353.72	38.1	353.66	41.6	353.18
44.05	352.85	45.88	352.61	50.58	352.01	50.71	352	52.8	351.88
60.34	351.5	61.05	351.44	66.3	351.17	67.3	351.09	70.18	350.94
72.76	350.72	76.24	350.54	81.27	350	100.43	348.85	105.06	348.54
115.51	348	138.29	346.9	181.73	345.23	210.07	344.41	210.09	344.41
215.13	344.26	220.35	341.19	225.41	340.73	231.22	340.96	236.01	344.28
240.33	344.79	253.16	346.33	258.95	349.49	260.11	349.59	263.96	350.56
267.35	352	269.7	353.13	271.51	354	273.55	355.07	275.21	356
277.09	356.89	279.29	358	283.62	359.32	285.5	359.78	286.47	360
291.06	360.4	294.96	360.73	299.25	361.08	301.38	361.31	304.13	361.54
306.53	361.84	306.74	361.86	307.86	362	314.98	363.37	318.1	364
325.64	365.64	327.27	366	335.18	367.64	336.93	368	339.58	368.18
343.85	368.49	346.34	368.31						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.13	.04	236.01	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.13	236.01	88.09	82.88	77.62	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
15.2	56.5	365	296.2	338	370

CROSS SECTION

RIVER: Plumtree

REACH: Plumtree RS: 63

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	354	7.34	353.26	12.41	352.73	16.79	352.29	19.4	352
27.1	350.79	31.84	350	38.59	349.24	50.74	348	57.78	347.37
58.67	347.29	60.21	347.18	62.82	346.94	66.66	346.68	68.29	346.54
76.91	346	79.38	345.88	79.63	345.86	80	345.83	80.68	345.78
83.85	345.58	87.55	345.35	103.02	344	108.36	342.62	114.01	342
118.01	340	138.02	340	142.02	342	147.2	343.25	150.03	344
151.66	344.32	153.16	344.61	153.93	344.74	155.1	344.92	156.66	345.2
158.34	345.42	159.11	345.56	160.97	345.74	161.25	345.79	163.2	345.94
163.62	346	170.72	346	174.59	346.47	175.77	346.56	176.48	346.66
177.66	346.84	178.56	346.94	180.57	347.23	181.89	347.4	182.5	347.49
185.96	348	187.92	348.58	193.03	350	195.4	350.82	198.31	352
201.23	353.21	203.77	354	207.9	355.67	208.87	356	212.01	357.21
214.25	358	216.21	358.46	223.24	360	225.85	360.29	227.5	360.52
231.62	361.04	238.04	362	248.29	363.79	249.46	364	253.46	364.5
253.68	364.53								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	103.02	.04	150.03	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
103.02	150.03	0	0	.1	.3

SUMMARY OF MANNING'S N VALUES

River:Plumtree

Reach	River Sta.	n1	n2	n3	n4	n5
Plumtree	10286	.085	.04	.085		
Plumtree	10044	.085	.04	.085		
Plumtree	9814	.085	.04	.085		
Plumtree	9762	.085	.04	.085		
Plumtree	9732	.075	.04	.075		
Plumtree	9650	Culvert				
Plumtree	9589	.075	.04	.075		
Plumtree	9499	.075	.04	.075		
Plumtree	9398	.085	.055	.04	.055	.085
Plumtree	9301	.085	.055	.04	.055	.085
Plumtree	9196	.085	.055	.04	.055	.085
Plumtree	8987	.085	.055	.04	.055	.085
Plumtree	8753	.065	.04	.065	.085	
Plumtree	8579	.075	.055	.04	.055	.085
Plumtree	8374	.075	.055	.04	.055	.085
Plumtree	8229	.075	.055	.04	.055	.085
Plumtree	8094	.075	.055	.04	.055	.085
Plumtree	8000	Inl Struct				
Plumtree	7954	.075	.055	.04	.055	.085
Plumtree	7800	.075	.055	.04	.055	.085
Plumtree	7548	.075	.055	.04	.055	.085
Plumtree	7367	.075	.055	.04	.055	.075
Plumtree	7216	.075	.055	.04	.055	.075
Plumtree	7100	Inl Struct				
Plumtree	7030	.075	.055	.04	.055	.075
Plumtree	6893	.075	.055	.04	.055	.075
Plumtree	6766	.075	.055	.04	.055	.075
Plumtree	6663	.075	.055	.04	.055	.075
Plumtree	6600	Inl Struct				
Plumtree	6568	.075	.04	.075		
Plumtree	6454	.075	.04	.075		
Plumtree	6350	.075	.04	.075		
Plumtree	6296	.075	.04	.075		
Plumtree	6250	Culvert				
Plumtree	6197	.075	.04	.075		
Plumtree	6122	.075	.04	.075		
Plumtree	6028	.075	.04	.075		
Plumtree	5926	.075	.04	.075		
Plumtree	5824	.075	.04	.075		
Plumtree	5745	.075	.04	.075		
Plumtree	5711	.075	.04	.075		
Plumtree	5650	Culvert				

Plumtree	5614	.075	.04	.075
Plumtree	5560	.075	.04	.075
Plumtree	5510	.075	.04	.075
Plumtree	5500	Bridge		
Plumtree	5474	.075	.04	.075
Plumtree	5419	.075	.04	.075
Plumtree	5323	.075	.04	.075
Plumtree	5209	.075	.04	.075
Plumtree	5107	.075	.04	.075
Plumtree	5040	.075	.04	.075
Plumtree	5000	Culvert		
Plumtree	4932	.075	.04	.075
Plumtree	4845	.075	.04	.075
Plumtree	4745	.075	.04	.075
Plumtree	4636	.075	.04	.075
Plumtree	4550	.075	.04	.075
Plumtree	4400	Culvert		
Plumtree	4344	.075	.04	.075
Plumtree	4289	.075	.04	.075
Plumtree	4185	.075	.04	.075
Plumtree	4033	.075	.04	.075
Plumtree	3930	.075	.04	.075
Plumtree	3816	.075	.04	.075
Plumtree	3688	.075	.04	.075
Plumtree	3550	.075	.04	.075
Plumtree	3428	.075	.04	.075
Plumtree	3296	.075	.04	.075
Plumtree	3179	.075	.04	.075
Plumtree	3077	.075	.04	.075
Plumtree	2978	.075	.04	.075
Plumtree	2917	.075	.04	.075
Plumtree	2900	Culvert		
Plumtree	2827	.075	.04	.075
Plumtree	2759	.075	.04	.075
Plumtree	2589	.075	.04	.075
Plumtree	2485	.075	.04	.075
Plumtree	2331	.075	.04	.075
Plumtree	2153	.075	.04	.075
Plumtree	1994	.075	.04	.075
Plumtree	1888	.075	.04	.075
Plumtree	1850	Bridge		
Plumtree	1830	.075	.04	.075
Plumtree	1641	.075	.04	.075
Plumtree	1463	.075	.04	.075
Plumtree	1291	.075	.04	.075
Plumtree	1124	.075	.04	.075
Plumtree	994	.075	.04	.075
Plumtree	911	.075	.04	.075
Plumtree	762	.075	.04	.075
Plumtree	658	.075	.04	.075
Plumtree	526	.075	.04	.075
Plumtree	380	.075	.04	.075
Plumtree	146	.075	.04	.075
Plumtree	63	.075	.04	.075

SUMMARY OF REACH LENGTHS

River: Plumtree

Reach	River Sta.	Left	Channel	Right
Plumtree	10286	240.46	241.25	237.2
Plumtree	10044	233.9	230.57	222.97
Plumtree	9814	52.19	51.52	50.85
Plumtree	9762	32.64	30.09	27.57
Plumtree	9732	145.71	143.47	141.55
Plumtree	9650	Culvert		
Plumtree	9589	74.95	89.37	103.36
Plumtree	9499	98.65	101.8	104.92
Plumtree	9398	97.49	96.47	93.03
Plumtree	9301	115.5	105	84.84
Plumtree	9196	142.73	208.89	146.19
Plumtree	8987	177.07	233.77	177.4
Plumtree	8753	179.62	174.76	144.99
Plumtree	8579	157.46	204.23	180.47
Plumtree	8374	136.5	145.45	139.79

Plumtree	8229	133.08	135.16	130.38
Plumtree	8094	130.77	139.81	134.21
Plumtree	8000	Inl Struct		
Plumtree	7954	154.67	153.64	151.55
Plumtree	7800	245.72	252.82	248.16
Plumtree	7548	166.35	180.41	207.73
Plumtree	7367	131.12	150.84	173.6
Plumtree	7216	182.85	186.42	163.53
Plumtree	7100	Inl Struct		
Plumtree	7030	146.71	137.19	128.81
Plumtree	6893	120.01	126.53	128.56
Plumtree	6766	99.27	103.53	103.11
Plumtree	6663	90.58	94.53	97.72
Plumtree	6600	Inl Struct		
Plumtree	6568	112.95	114.27	115.74
Plumtree	6454	102.69	103.78	104.74
Plumtree	6350	52.33	53.78	55.24
Plumtree	6296	98.47	99.02	99.58
Plumtree	6250	Culvert		
Plumtree	6197	75.78	74.81	73.83
Plumtree	6122	98.18	94.21	91.92
Plumtree	6028	100.93	101.91	101.19
Plumtree	5926	102.11	102.54	102.93
Plumtree	5824	75.62	79.21	82.75
Plumtree	5745	34.07	34.02	34.04
Plumtree	5711	96.24	96.18	98.71
Plumtree	5650	Culvert		
Plumtree	5614	60.47	54.67	45.26
Plumtree	5560	56.62	49.74	41.3
Plumtree	5510	36.56	36.42	38.18
Plumtree	5500	Bridge		
Plumtree	5474	54.4	54.86	54.94
Plumtree	5419	93.04	95.36	97.65
Plumtree	5323	116.69	114.31	111.9
Plumtree	5209	111.42	101.59	91.47
Plumtree	5107	67.29	67.07	66.86
Plumtree	5040	104.82	108.2	107.53
Plumtree	5000	Culvert		
Plumtree	4932	86.54	87.15	87.5
Plumtree	4845	89.54	100.49	110.66
Plumtree	4745	111.08	108.67	106.25
Plumtree	4636	90.09	85.72	81.01
Plumtree	4550	205.67	206.54	206.28
Plumtree	4400	Culvert		
Plumtree	4344	54.24	54.2	54.21
Plumtree	4289	104.83	104.42	103.52
Plumtree	4185	151.73	151.97	152.24
Plumtree	4033	105.3	103.27	101.24
Plumtree	3930	112.01	113.72	114.59
Plumtree	3816	128.5	127.87	127.21
Plumtree	3688	137.67	137.99	138.3
Plumtree	3550	121.58	121.96	122.09
Plumtree	3428	131.85	132.32	132.95
Plumtree	3296	117.57	116.94	115.99
Plumtree	3179	101.1	102.24	103.14
Plumtree	3077	99.64	98.98	98.39
Plumtree	2978	61.85	60.74	60.21
Plumtree	2917	89.63	90.26	89.98
Plumtree	2900	Culvert		
Plumtree	2827	59.3	67.61	75.81
Plumtree	2759	166.79	169.71	170.1
Plumtree	2589	102.11	104.17	106.57
Plumtree	2485	153.6	154.59	153.42
Plumtree	2331	179.37	177.6	175.87
Plumtree	2153	160.15	158.75	157.04
Plumtree	1994	108.1	106.05	103.75
Plumtree	1888	61.13	58.24	54.2
Plumtree	1850	Bridge		
Plumtree	1830	183.1	189.46	194.94
Plumtree	1641	176.17	177.29	178.52
Plumtree	1463	172.51	172.28	171.74
Plumtree	1291	167.7	167.44	166.86
Plumtree	1124	134.05	129.91	125.5
Plumtree	994	82.93	82.66	81.8
Plumtree	911	138.48	148.66	157.22
Plumtree	762	101.69	104.14	104.96
Plumtree	658	129.48	132.55	137.52
Plumtree	526	143.66	145.78	147.57
Plumtree	380	235.8	234.15	232.25

Plumtree	146	88.09	82.88	77.62
Plumtree	63	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Plumtree

Reach	River Sta.	Contr.	Expan.
Plumtree	10286	.1	.3
Plumtree	10044	.1	.3
Plumtree	9814	.1	.3
Plumtree	9762	.1	.3
Plumtree	9732	.3	.5
Plumtree	9650	Culvert	
Plumtree	9589	.3	.5
Plumtree	9499	.1	.3
Plumtree	9398	.1	.3
Plumtree	9301	.1	.3
Plumtree	9196	.1	.3
Plumtree	8987	.1	.3
Plumtree	8753	.1	.3
Plumtree	8579	.1	.3
Plumtree	8374	.1	.3
Plumtree	8229	.1	.3
Plumtree	8094	.3	.5
Plumtree	8000	Inl Struct	
Plumtree	7954	.3	.5
Plumtree	7800	.1	.3
Plumtree	7548	.1	.3
Plumtree	7367	.1	.3
Plumtree	7216	.3	.5
Plumtree	7100	Inl Struct	
Plumtree	7030	.3	.5
Plumtree	6893	.1	.3
Plumtree	6766	.1	.3
Plumtree	6663	.3	.5
Plumtree	6600	Inl Struct	
Plumtree	6568	.3	.5
Plumtree	6454	.1	.3
Plumtree	6350	.1	.3
Plumtree	6296	.3	.5
Plumtree	6250	Culvert	
Plumtree	6197	.3	.5
Plumtree	6122	.1	.3
Plumtree	6028	.1	.3
Plumtree	5926	.1	.3
Plumtree	5824	.1	.3
Plumtree	5745	.1	.3
Plumtree	5711	.3	.5
Plumtree	5650	Culvert	
Plumtree	5614	.3	.5
Plumtree	5560	.1	.3
Plumtree	5510	.3	.5
Plumtree	5500	Bridge	
Plumtree	5474	.3	.5
Plumtree	5419	.1	.3
Plumtree	5323	.1	.3
Plumtree	5209	.1	.3
Plumtree	5107	.1	.3
Plumtree	5040	.3	.5
Plumtree	5000	Culvert	
Plumtree	4932	.3	.5
Plumtree	4845	.1	.3
Plumtree	4745	.1	.3
Plumtree	4636	.1	.3
Plumtree	4550	.3	.5
Plumtree	4400	Culvert	
Plumtree	4344	.3	.5
Plumtree	4289	.1	.3
Plumtree	4185	.1	.3
Plumtree	4033	.1	.3
Plumtree	3930	.1	.3
Plumtree	3816	.1	.3
Plumtree	3688	.1	.3
Plumtree	3550	.1	.3

Plumtree	3428		.1	.3
Plumtree	3296		.1	.3
Plumtree	3179		.1	.3
Plumtree	3077		.1	.3
Plumtree	2978		.1	.3
Plumtree	2917		.3	.5
Plumtree	2900	Culvert		
Plumtree	2827		.3	.5
Plumtree	2759		.1	.3
Plumtree	2589		.1	.3
Plumtree	2485		.1	.3
Plumtree	2331		.1	.3
Plumtree	2153		.1	.3
Plumtree	1994		.1	.3
Plumtree	1888		.3	.5
Plumtree	1850	Bridge		
Plumtree	1830		.3	.5
Plumtree	1641		.1	.3
Plumtree	1463		.1	.3
Plumtree	1291		.1	.3
Plumtree	1124		.1	.3
Plumtree	994		.1	.3
Plumtree	911		.1	.3
Plumtree	762		.1	.3
Plumtree	658		.1	.3
Plumtree	526		.1	.3
Plumtree	380		.1	.3
Plumtree	146		.1	.3
Plumtree	63		.1	.3

HEC-RAS Plan: F River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	10286	1-YR	223.00	395.09	396.81	396.59	396.90	0.008109	3.23	121.56	150.03	0.58
Plumtree	10286	2-YR	307.00	395.09	396.98	396.60	397.10	0.008539	3.69	147.05	154.15	0.62
Plumtree	10286	10-YR	596.00	395.09	397.61	396.95	397.76	0.006496	4.33	248.53	169.55	0.58
Plumtree	10286	50-YR	995.00	395.09	398.04	397.34	398.29	0.008220	5.64	323.42	179.49	0.67
Plumtree	10286	100-YR	1200.00	395.09	398.16	397.51	398.48	0.009753	6.38	345.70	180.36	0.74
Plumtree	10286	200-YR	1441.00	395.09	398.31	397.71	398.71	0.011087	7.10	373.56	181.44	0.80
Plumtree	10044	1-YR	223.00	392.49	394.38	394.17	394.55	0.012029	4.01	95.59	160.06	0.71
Plumtree	10044	2-YR	307.00	392.49	394.57	394.26	394.76	0.011179	4.31	128.57	181.74	0.71
Plumtree	10044	10-YR	596.00	392.49	394.81	394.81	395.21	0.019905	6.42	174.65	200.40	0.97
Plumtree	10044	50-YR	995.00	392.49	395.36		395.76	0.013877	6.72	291.66	232.53	0.86
Plumtree	10044	100-YR	1200.00	392.49	395.67		396.04	0.010744	6.55	369.07	251.98	0.77
Plumtree	10044	200-YR	1441.00	392.49	396.01		396.36	0.008688	6.47	458.14	272.07	0.71
Plumtree	9814	1-YR	223.00	388.76	391.65	391.32	391.94	0.010731	4.30	51.89	43.52	0.69
Plumtree	9814	2-YR	307.00	388.76	392.01	391.61	392.32	0.010099	4.47	68.69	52.13	0.69
Plumtree	9814	10-YR	596.00	388.76	393.96	392.33	394.04	0.001004	2.53	422.79	271.90	0.25
Plumtree	9814	50-YR	995.00	388.76	395.21	393.16	395.27	0.000618	2.48	779.14	303.77	0.21
Plumtree	9814	100-YR	1200.00	388.76	395.48	393.38	395.55	0.000696	2.73	862.53	314.08	0.22
Plumtree	9814	200-YR	1441.00	388.76	395.75	393.58	395.84	0.000822	3.08	963.11	362.61	0.24
Plumtree	9762	1-YR	223.00	388.00	390.84		391.29	0.014395	5.35	41.68	30.29	0.80
Plumtree	9762	2-YR	307.00	388.00	391.35	390.95	391.76	0.011216	5.15	64.37	69.10	0.73
Plumtree	9762	10-YR	596.00	388.00	393.94		393.99	0.000653	2.22	477.72	227.75	0.20
Plumtree	9762	50-YR	995.00	388.00	395.18		395.24	0.000555	2.48	787.03	285.66	0.20
Plumtree	9762	100-YR	1200.00	388.00	395.44		395.52	0.000639	2.76	866.04	314.34	0.21
Plumtree	9762	200-YR	1441.00	388.00	395.71		395.80	0.000772	3.13	952.78	331.51	0.24
Plumtree	9732	1-YR	223.00	387.00	390.89	389.66	391.04	0.002732	3.09	72.11	34.50	0.38
Plumtree	9732	2-YR	307.00	387.00	391.35	390.00	391.54	0.002876	3.45	88.95	37.47	0.39
Plumtree	9732	10-YR	596.00	387.00	393.80	390.90	393.95	0.000995	3.22	193.41	166.72	0.26
Plumtree	9732	50-YR	995.00	387.00	395.07	391.81	395.21	0.000790	3.36	518.74	222.40	0.24
Plumtree	9732	100-YR	1200.00	387.00	395.31	392.17	395.48	0.000943	3.77	573.56	232.23	0.27
Plumtree	9732	200-YR	1441.00	387.00	395.56	392.59	395.76	0.001118	4.21	631.50	240.90	0.29
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	223.00	386.27	389.11	388.43	389.37	0.006049	4.12	54.50	33.58	0.55
Plumtree	9589	2-YR	307.00	386.27	389.59	388.79	389.89	0.005013	4.41	71.42	38.85	0.52
Plumtree	9589	10-YR	596.00	386.27	390.71	389.64	391.19	0.004664	5.59	111.74	54.69	0.54
Plumtree	9589	50-YR	995.00	386.27	391.24	390.54	392.13	0.007436	7.79	155.60	69.25	0.70
Plumtree	9589	100-YR	1200.00	386.27	391.58	391.01	392.62	0.007880	8.48	180.77	79.35	0.73
Plumtree	9589	200-YR	1441.00	386.27	391.92	391.55	393.12	0.008417	9.22	209.89	102.34	0.76
Plumtree	9499	1-YR	187.00	385.35	388.56		388.81	0.006282	4.14	52.19	39.96	0.55
Plumtree	9499	2-YR	289.00	385.35	388.96		389.32	0.007877	4.99	70.42	50.84	0.63
Plumtree	9499	10-YR	633.00	385.35	389.61	389.61	390.40	0.014124	7.63	111.41	86.99	0.87
Plumtree	9499	50-YR	1118.00	385.35	390.45	390.45	391.26	0.011390	8.35	228.01	154.00	0.82
Plumtree	9499	100-YR	1437.00	385.35	390.79	390.79	391.68	0.011613	9.01	280.26	157.77	0.85
Plumtree	9499	200-YR	1803.00	385.35	391.10	391.10	392.10	0.012193	9.77	330.09	161.29	0.88
Plumtree	9398	1-YR	187.00	385.43	387.28	387.28	387.65	0.026176	4.87	38.36	52.25	1.00
Plumtree	9398	2-YR	289.00	385.43	387.58	387.58	387.96	0.027054	4.94	58.48	80.11	1.02
Plumtree	9398	10-YR	633.00	385.43	388.13	388.13	388.65	0.019088	5.88	115.09	120.45	0.93
Plumtree	9398	50-YR	1118.00	385.43	388.36	388.63	389.44	0.032061	8.54	143.29	125.14	1.25
Plumtree	9398	100-YR	1437.00	385.43	388.59	388.91	389.84	0.030925	9.26	172.92	129.89	1.25
Plumtree	9398	200-YR	1803.00	385.43	388.85	389.21	390.24	0.028949	9.85	207.16	135.17	1.24
Plumtree	9301	1-YR	187.00	381.53	382.65	382.93	383.61	0.074417	7.85	23.82	34.65	1.67
Plumtree	9301	2-YR	289.00	381.53	382.91	383.25	384.10	0.064043	8.77	32.95	36.20	1.62
Plumtree	9301	10-YR	633.00	381.53	383.50	384.11	385.54	0.057111	11.47	55.69	39.83	1.66
Plumtree	9301	50-YR	1118.00	381.53	384.63	385.07	386.56	0.026142	11.29	104.16	46.63	1.23
Plumtree	9301	100-YR	1437.00	381.53	385.19	385.59	387.26	0.021869	11.76	131.30	50.03	1.16
Plumtree	9301	200-YR	1803.00	381.53	385.81	386.16	387.98	0.018270	12.11	163.60	53.79	1.10
Plumtree	9196	1-YR	187.00	379.98	380.80	380.80	381.19	0.026008	4.97	37.65	49.64	1.01
Plumtree	9196	2-YR	289.00	379.98	381.07	381.07	381.57	0.023884	5.68	50.91	51.46	1.01
Plumtree	9196	10-YR	633.00	379.98	381.75	381.75	382.57	0.019697	7.26	87.93	56.21	1.00
Plumtree	9196	50-YR	1118.00	379.98	382.25	382.53	383.73	0.025267	9.80	116.74	59.64	1.18
Plumtree	9196	100-YR	1437.00	379.98	382.42	382.96	384.51	0.032332	11.66	126.83	60.80	1.35
Plumtree	9196	200-YR	1803.00	379.98	382.67	383.42	385.31	0.035917	13.15	142.17	62.51	1.45
Plumtree	8987	1-YR	187.00	369.00	373.25	370.28	373.28	0.000294	1.32	141.66	46.11	0.13
Plumtree	8987	2-YR	289.00	369.00	374.50	370.68	374.53	0.000256	1.42	204.07	53.63	0.13
Plumtree	8987	10-YR	633.00	369.00	377.92	371.68	377.96	0.000138	1.58	422.73	74.21	0.10
Plumtree	8987	50-YR	1118.00	369.00	381.59	372.72	381.64	0.000096	1.74	735.57	96.30	0.09
Plumtree	8987	100-YR	1437.00	369.00	382.99	373.28	383.05	0.000101	1.93	876.79	105.67	0.10
Plumtree	8987	200-YR	1803.00	369.00	384.33	373.85	384.39	0.000107	2.13	1024.12	115.31	0.10

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	8753	1-YR	187.00	369.00	373.25		373.25	0.000032	0.50	377.61	102.01	0.05
Plumtree	8753	2-YR	289.00	369.00	374.50		374.51	0.000031	0.57	510.46	109.80	0.05
Plumtree	8753	10-YR	633.00	369.00	377.93		377.94	0.000023	0.70	923.27	131.01	0.04
Plumtree	8753	50-YR	1118.00	369.00	381.61		381.62	0.000019	0.83	1446.45	153.79	0.04
Plumtree	8753	100-YR	1437.00	369.00	383.01		383.02	0.000021	0.94	1668.66	162.50	0.05
Plumtree	8753	200-YR	1803.00	369.00	384.35		384.37	0.000024	1.06	1891.56	170.80	0.05
Plumtree	8579	1-YR	187.00	369.00	373.24		373.25	0.000037	0.54	349.43	95.16	0.05
Plumtree	8579	2-YR	289.00	369.00	374.50		374.50	0.000036	0.61	473.55	102.73	0.05
Plumtree	8579	10-YR	633.00	369.00	377.93		377.94	0.000027	0.75	861.40	123.43	0.05
Plumtree	8579	50-YR	1118.00	369.00	381.60		381.61	0.000022	0.88	1355.71	145.62	0.05
Plumtree	8579	100-YR	1437.00	369.00	383.01		383.02	0.000024	1.00	1566.18	154.09	0.05
Plumtree	8579	200-YR	1803.00	369.00	384.34		384.36	0.000027	1.12	1777.54	162.08	0.05
Plumtree	8374	1-YR	187.00	369.00	373.23		373.24	0.000069	0.70	266.00	75.65	0.07
Plumtree	8374	2-YR	289.00	369.00	374.48		374.49	0.000065	0.79	365.61	83.22	0.07
Plumtree	8374	10-YR	633.00	369.00	377.91		377.93	0.000045	0.94	687.23	104.35	0.06
Plumtree	8374	50-YR	1118.00	369.00	381.59		381.61	0.000035	1.08	1111.94	126.83	0.06
Plumtree	8374	100-YR	1437.00	369.00	382.99		383.01	0.000038	1.22	1295.85	135.43	0.06
Plumtree	8374	200-YR	1803.00	369.00	384.33		384.35	0.000042	1.37	1482.02	143.51	0.06
Plumtree	8229	1-YR	187.00	369.00	373.23		373.23	0.000032	0.50	373.75	101.19	0.05
Plumtree	8229	2-YR	289.00	369.00	374.48		374.49	0.000031	0.57	505.47	108.75	0.05
Plumtree	8229	10-YR	633.00	369.00	377.91		377.92	0.000023	0.71	914.37	129.42	0.04
Plumtree	8229	50-YR	1118.00	369.00	381.59		381.60	0.000019	0.83	1430.86	151.54	0.04
Plumtree	8229	100-YR	1437.00	369.00	382.99		383.01	0.000021	0.94	1649.44	160.00	0.05
Plumtree	8229	200-YR	1803.00	369.00	384.33		384.35	0.000024	1.06	1868.48	168.03	0.05
Plumtree	8094	1-YR	187.00	369.00	373.22	369.49	373.23	0.000021	0.41	457.09	120.94	0.04
Plumtree	8094	2-YR	289.00	369.00	374.48	369.65	374.48	0.000020	0.47	613.64	128.49	0.04
Plumtree	8094	10-YR	633.00	369.00	377.91	370.09	377.92	0.000016	0.59	1090.38	149.11	0.04
Plumtree	8094	50-YR	1118.00	369.00	381.59	370.59	381.60	0.000014	0.70	1679.32	171.19	0.04
Plumtree	8094	100-YR	1437.00	369.00	382.99	370.87	383.00	0.000015	0.79	1925.52	179.63	0.04
Plumtree	8094	200-YR	1803.00	369.00	384.33	371.17	384.34	0.000017	0.90	2170.80	187.64	0.04
Plumtree	8000 Weir 1		Inl Struct									
Plumtree	7954	1-YR	105.00	368.00	371.06		371.06	0.000015	0.28	369.48	130.03	0.03
Plumtree	7954	2-YR	164.00	368.00	372.15		372.15	0.000013	0.32	514.32	136.61	0.03
Plumtree	7954	10-YR	347.00	368.00	376.03		376.03	0.000005	0.33	1089.50	160.08	0.02
Plumtree	7954	50-YR	862.00	368.00	378.74		378.74	0.000011	0.59	1546.21	176.48	0.03
Plumtree	7954	100-YR	1287.00	368.00	379.20		379.21	0.000022	0.84	1627.59	179.25	0.05
Plumtree	7954	200-YR	1699.00	368.00	379.72		379.74	0.000032	1.06	1722.81	182.44	0.06
Plumtree	7800	1-YR	105.00	368.00	371.06		371.06	0.000011	0.25	418.49	145.95	0.03
Plumtree	7800	2-YR	164.00	368.00	372.15		372.15	0.000010	0.28	580.63	152.48	0.03
Plumtree	7800	10-YR	347.00	368.00	376.02		376.03	0.000004	0.29	1217.19	175.79	0.02
Plumtree	7800	50-YR	862.00	368.00	378.74		378.74	0.000009	0.53	1716.34	192.10	0.03
Plumtree	7800	100-YR	1287.00	368.00	379.20		379.20	0.000017	0.76	1804.69	194.85	0.04
Plumtree	7800	200-YR	1699.00	368.00	379.72		379.73	0.000026	0.95	1907.95	198.00	0.05
Plumtree	7548	1-YR	105.00	368.00	371.06		371.06	0.000005	0.18	595.29	204.54	0.02
Plumtree	7548	2-YR	164.00	368.00	372.15		372.15	0.000005	0.20	821.45	211.56	0.02
Plumtree	7548	10-YR	347.00	368.00	376.02		376.03	0.000002	0.21	1690.80	236.66	0.01
Plumtree	7548	50-YR	862.00	368.00	378.74		378.74	0.000005	0.38	2375.14	285.73	0.02
Plumtree	7548	100-YR	1287.00	368.00	379.19		379.20	0.000009	0.54	2507.46	293.90	0.03
Plumtree	7548	200-YR	1699.00	368.00	379.72		379.73	0.000013	0.68	2664.48	303.21	0.04
Plumtree	7367	1-YR	105.00	368.00	371.06		371.06	0.000003	0.14	773.03	262.65	0.01
Plumtree	7367	2-YR	164.00	368.00	372.15		372.15	0.000003	0.15	1062.38	269.66	0.01
Plumtree	7367	10-YR	347.00	368.00	376.02		376.02	0.000001	0.16	2156.97	294.66	0.01
Plumtree	7367	50-YR	862.00	368.00	378.74		378.74	0.000003	0.30	3018.74	362.24	0.02
Plumtree	7367	100-YR	1287.00	368.00	379.19		379.20	0.000005	0.43	3187.35	376.24	0.02
Plumtree	7367	200-YR	1699.00	368.00	379.72		379.73	0.000008	0.54	3389.53	392.59	0.03
Plumtree	7216	1-YR	105.00	368.00	371.06	368.26	371.06	0.000008	0.20	526.86	197.25	0.02
Plumtree	7216	2-YR	164.00	368.00	372.14	368.34	372.14	0.000006	0.22	745.02	204.07	0.02
Plumtree	7216	10-YR	347.00	368.00	376.02	368.57	376.02	0.000002	0.22	1584.02	228.42	0.01
Plumtree	7216	50-YR	862.00	368.00	378.74	369.03	378.74	0.000005	0.40	2238.58	268.02	0.02
Plumtree	7216	100-YR	1287.00	368.00	379.19	369.34	379.20	0.000010	0.58	2363.77	282.30	0.03
Plumtree	7216	200-YR	1699.00	368.00	379.72	369.60	379.72	0.000015	0.72	2515.93	298.42	0.04
Plumtree	7100 Weir 2		Inl Struct									
Plumtree	7030	1-YR	88.00	367.00	370.91		370.91	0.000007	0.22	403.32	115.26	0.02
Plumtree	7030	2-YR	144.00	367.00	371.98		371.98	0.000008	0.27	529.70	121.86	0.02
Plumtree	7030	10-YR	289.00	367.00	376.02		376.02	0.000003	0.28	1072.54	148.56	0.02

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	7030	50-YR	778.00	367.00	378.72		378.72	0.000009	0.54	1602.05	224.47	0.03
Plumtree	7030	100-YR	1203.00	367.00	379.16		379.17	0.000018	0.80	1702.61	230.29	0.04
Plumtree	7030	200-YR	1645.00	367.00	379.68		379.70	0.000029	1.04	1825.45	237.64	0.05
Plumtree	6893	1-YR	88.00	367.00	370.91		370.91	0.000007	0.22	404.42	115.18	0.02
Plumtree	6893	2-YR	144.00	367.00	371.97		371.98	0.000008	0.27	530.59	121.57	0.02
Plumtree	6893	10-YR	289.00	367.00	376.02		376.02	0.000003	0.28	1071.97	160.37	0.02
Plumtree	6893	50-YR	778.00	367.00	378.71		378.72	0.000009	0.55	1610.55	233.52	0.03
Plumtree	6893	100-YR	1203.00	367.00	379.16		379.17	0.000018	0.81	1715.36	241.91	0.04
Plumtree	6893	200-YR	1645.00	367.00	379.68		379.70	0.000029	1.04	1844.70	251.83	0.05
Plumtree	6766	1-YR	88.00	367.00	370.91		370.91	0.000003	0.16	563.87	155.96	0.01
Plumtree	6766	2-YR	144.00	367.00	371.97		371.98	0.000004	0.20	733.49	162.34	0.02
Plumtree	6766	10-YR	289.00	367.00	376.02		376.02	0.000002	0.20	1438.37	188.79	0.01
Plumtree	6766	50-YR	778.00	367.00	378.72		378.72	0.000005	0.41	2091.29	287.82	0.02
Plumtree	6766	100-YR	1203.00	367.00	379.16		379.16	0.000010	0.60	2225.05	313.79	0.03
Plumtree	6766	200-YR	1645.00	367.00	379.68		379.69	0.000016	0.78	2396.15	340.74	0.04
Plumtree	6663	1-YR	88.00	367.00	370.91	367.28	370.91	0.000005	0.19	468.69	137.26	0.02
Plumtree	6663	2-YR	144.00	367.00	371.97	367.39	371.97	0.000006	0.23	620.01	146.72	0.02
Plumtree	6663	10-YR	289.00	367.00	376.02	367.62	376.02	0.000002	0.23	1290.45	208.07	0.01
Plumtree	6663	50-YR	778.00	367.00	378.71	368.19	378.72	0.000006	0.45	2053.90	331.59	0.02
Plumtree	6663	100-YR	1203.00	367.00	379.15	368.58	379.16	0.000013	0.66	2201.84	339.66	0.03
Plumtree	6663	200-YR	1645.00	367.00	379.68	368.94	379.69	0.000020	0.85	2382.29	349.93	0.04
Plumtree	6600 Weir 3		Inl Struct									
Plumtree	6568	1-YR	92.00	367.00	370.86		370.88	0.000271	1.10	83.36	33.17	0.12
Plumtree	6568	2-YR	149.00	367.00	371.89		371.92	0.000261	1.23	120.81	39.37	0.12
Plumtree	6568	10-YR	307.00	367.00	375.99		376.00	0.000041	0.86	602.36	204.88	0.06
Plumtree	6568	50-YR	798.00	367.00	378.70		378.71	0.000057	1.25	1270.93	283.92	0.07
Plumtree	6568	100-YR	1134.00	367.00	379.13		379.15	0.000092	1.64	1395.34	294.18	0.09
Plumtree	6568	200-YR	1562.00	367.00	379.63		379.67	0.000137	2.07	1546.84	307.50	0.11
Plumtree	6454	1-YR	92.00	367.00	370.80		370.83	0.000571	1.48	62.29	27.79	0.17
Plumtree	6454	2-YR	149.00	367.00	371.83		371.87	0.000493	1.58	94.30	34.01	0.17
Plumtree	6454	10-YR	307.00	367.00	375.99		376.00	0.000055	0.97	554.22	187.55	0.07
Plumtree	6454	50-YR	798.00	367.00	378.69		378.71	0.000072	1.38	1109.06	240.46	0.08
Plumtree	6454	100-YR	1134.00	367.00	379.11		379.14	0.000119	1.82	1214.14	256.09	0.10
Plumtree	6454	200-YR	1562.00	367.00	379.60		379.65	0.000179	2.30	1345.04	273.77	0.13
Plumtree	6350	1-YR	92.00	366.97	370.63	368.93	370.72	0.002153	2.47	37.29	19.09	0.31
Plumtree	6350	2-YR	149.00	366.97	371.69	369.45	371.78	0.001541	2.50	59.61	23.09	0.27
Plumtree	6350	10-YR	307.00	366.97	375.95	370.69	375.99	0.000194	1.58	253.47	89.15	0.11
Plumtree	6350	50-YR	798.00	366.97	378.63	372.53	378.69	0.000254	2.31	625.01	227.81	0.14
Plumtree	6350	100-YR	1134.00	366.97	379.01	373.45	379.11	0.000413	3.02	705.14	244.70	0.18
Plumtree	6350	200-YR	1562.00	366.97	379.45	374.46	379.61	0.000611	3.80	806.04	263.68	0.22
Plumtree	6296	1-YR	92.00	367.41	370.29	369.51	370.53	0.006064	3.93	25.09	18.31	0.49
Plumtree	6296	2-YR	149.00	367.41	371.48	370.09	371.66	0.002989	3.57	50.12	23.68	0.37
Plumtree	6296	10-YR	307.00	367.41	375.91	371.15	375.97	0.000347	2.22	221.24	78.83	0.15
Plumtree	6296	50-YR	798.00	367.41	378.57	373.09	378.67	0.000514	3.33	544.65	163.52	0.19
Plumtree	6296	100-YR	1134.00	367.41	378.91	374.07	379.08	0.000852	4.38	602.78	177.52	0.24
Plumtree	6296	200-YR	1562.00	367.41	379.28	374.94	379.55	0.001350	5.65	683.83	231.92	0.30
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	92.00	366.39	369.63	367.42	369.66	0.000390	1.32	69.65	26.75	0.14
Plumtree	6197	2-YR	149.00	366.39	370.36	367.76	370.40	0.000466	1.66	89.84	28.80	0.16
Plumtree	6197	10-YR	307.00	366.39	371.78	368.49	371.87	0.000581	2.37	133.61	32.83	0.19
Plumtree	6197	50-YR	798.00	366.39	373.96	370.08	374.22	0.001048	4.11	212.03	39.03	0.28
Plumtree	6197	100-YR	1134.00	366.39	374.78	370.88	375.19	0.001436	5.18	246.66	48.07	0.33
Plumtree	6197	200-YR	1562.00	366.39	375.62	371.79	376.22	0.001888	6.37	296.03	70.09	0.39
Plumtree	6122	1-YR	92.00	366.62	369.14	368.56	369.49	0.009040	4.69	19.61	10.59	0.61
Plumtree	6122	2-YR	149.00	366.62	369.51	369.12	370.13	0.014100	6.32	23.57	11.12	0.77
Plumtree	6122	10-YR	307.00	366.62	370.65	370.46	371.51	0.016949	7.43	41.98	29.39	0.88
Plumtree	6122	50-YR	798.00	366.62	372.27	372.27	373.68	0.014877	10.02	102.67	45.70	0.90
Plumtree	6122	100-YR	1134.00	366.62	373.25	373.25	374.65	0.011836	10.40	157.45	71.34	0.83
Plumtree	6122	200-YR	1562.00	366.62	373.98	373.98	375.62	0.012208	11.59	202.26	79.49	0.87
Plumtree	6028	1-YR	92.00	365.53	368.76	367.61	368.89	0.003830	2.97	34.50	42.00	0.42
Plumtree	6028	2-YR	149.00	365.53	369.32	368.26	369.45	0.002984	3.17	65.02	61.68	0.39
Plumtree	6028	10-YR	307.00	365.53	370.94	369.28	371.02	0.001034	2.73	196.83	100.91	0.25
Plumtree	6028	50-YR	798.00	365.53	372.89	370.44	373.01	0.001036	3.62	451.51	165.27	0.27
Plumtree	6028	100-YR	1134.00	365.53	373.50	370.99	373.65	0.001227	4.22	551.61	202.06	0.30
Plumtree	6028	200-YR	1562.00	365.53	374.18	371.57	374.36	0.001391	4.81	668.06	216.72	0.32

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5926	1-YR	92.00	365.38	368.22	367.56	368.43	0.005389	3.89	30.77	23.95	0.48
Plumtree	5926	2-YR	149.00	365.38	368.78	368.12	369.04	0.005512	4.48	45.05	28.15	0.50
Plumtree	5926	10-YR	307.00	365.38	370.72	368.94	370.88	0.001943	3.92	137.32	96.78	0.33
Plumtree	5926	50-YR	798.00	365.38	372.64	370.59	372.85	0.002063	5.15	305.50	158.06	0.36
Plumtree	5926	100-YR	1134.00	365.38	373.13	371.48	373.45	0.002840	6.35	355.40	163.09	0.43
Plumtree	5926	200-YR	1562.00	365.38	373.68	372.05	374.12	0.003658	7.59	413.39	168.66	0.49
Plumtree	5824	1-YR	92.00	365.08	366.79	366.79	367.37	0.024149	6.10	15.09	13.29	1.01
Plumtree	5824	2-YR	149.00	365.08	367.29	367.29	367.98	0.022542	6.69	22.26	16.15	1.00
Plumtree	5824	10-YR	307.00	365.08	370.62		370.72	0.000984	2.68	133.03	71.47	0.25
Plumtree	5824	50-YR	798.00	365.08	372.53		372.69	0.001038	3.65	379.14	161.86	0.27
Plumtree	5824	100-YR	1134.00	365.08	373.00		373.23	0.001390	4.46	456.20	166.75	0.32
Plumtree	5824	200-YR	1562.00	365.08	373.53		373.83	0.001730	5.26	545.91	172.27	0.36
Plumtree	5745	1-YR	92.00	363.03	365.69	365.11	365.97	0.008777	4.24	21.69	14.78	0.62
Plumtree	5745	2-YR	149.00	363.03	366.97	365.67	367.15	0.003289	3.38	44.04	20.07	0.40
Plumtree	5745	10-YR	307.00	363.03	370.59	366.66	370.66	0.000449	2.12	168.63	77.55	0.17
Plumtree	5745	50-YR	798.00	363.03	372.44	368.55	372.62	0.000843	3.60	303.37	105.18	0.25
Plumtree	5745	100-YR	1134.00	363.03	372.81	369.53	373.11	0.001365	4.75	334.60	115.32	0.31
Plumtree	5745	200-YR	1562.00	363.03	373.17	370.48	373.66	0.002105	6.10	366.53	134.75	0.39
Plumtree	5711	1-YR	92.00	362.51	365.64	364.32	365.77	0.002709	2.84	32.35	16.43	0.36
Plumtree	5711	2-YR	149.00	362.51	366.95	364.84	367.05	0.001531	2.61	57.12	21.40	0.28
Plumtree	5711	10-YR	307.00	362.51	370.59	365.93	370.64	0.000298	1.88	207.08	69.20	0.14
Plumtree	5711	50-YR	798.00	362.51	372.43	367.89	372.58	0.000652	3.37	377.62	145.97	0.22
Plumtree	5711	100-YR	1134.00	362.51	372.80	368.91	373.05	0.001056	4.42	435.24	165.13	0.28
Plumtree	5711	200-YR	1562.00	362.51	373.17	369.97	373.57	0.001610	5.63	499.33	179.58	0.35
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	92.00	361.81	365.25	363.43	365.29	0.000772	1.68	54.73	24.69	0.20
Plumtree	5614	2-YR	149.00	361.81	366.05	363.81	366.11	0.000808	1.97	75.73	27.74	0.21
Plumtree	5614	10-YR	307.00	361.81	367.64	364.64	367.74	0.000796	2.45	131.30	51.21	0.22
Plumtree	5614	50-YR	798.00	361.81	371.96	366.30	372.02	0.000245	2.21	643.16	200.44	0.14
Plumtree	5614	100-YR	1134.00	361.81	372.46	367.18	372.55	0.000368	2.81	744.82	212.23	0.17
Plumtree	5614	200-YR	1562.00	361.81	373.01	368.11	373.14	0.000518	3.48	869.74	235.37	0.20
Plumtree	5560	1-YR	92.00	362.08	365.17		365.23	0.001217	2.05	44.89	20.12	0.24
Plumtree	5560	2-YR	149.00	362.08	365.96		366.05	0.001336	2.40	62.00	23.38	0.26
Plumtree	5560	10-YR	307.00	362.08	367.53		367.67	0.001312	2.95	108.62	51.02	0.27
Plumtree	5560	50-YR	798.00	362.08	371.96		372.00	0.000220	2.05	865.68	302.09	0.13
Plumtree	5560	100-YR	1134.00	362.08	372.46		372.51	0.000304	2.51	1018.01	310.84	0.15
Plumtree	5560	200-YR	1562.00	362.08	373.01		373.09	0.000398	2.99	1197.88	332.55	0.17
Plumtree	5510	1-YR	92.00	362.16	364.83	364.18	365.09	0.007056	4.10	22.42	13.27	0.56
Plumtree	5510	2-YR	149.00	362.16	365.59	364.70	365.90	0.006211	4.47	33.35	15.60	0.54
Plumtree	5510	10-YR	307.00	362.16	367.13	365.77	367.53	0.005094	5.02	61.15	20.36	0.51
Plumtree	5510	50-YR	798.00	362.16	371.88	367.89	371.98	0.000558	3.05	530.98	239.40	0.20
Plumtree	5510	100-YR	1134.00	362.16	372.34	369.15	372.48	0.000800	3.80	619.31	248.46	0.24
Plumtree	5510	200-YR	1562.00	362.16	372.86	369.91	373.05	0.001053	4.54	722.65	255.80	0.28
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	92.00	361.52	364.73	363.22	364.84	0.002096	2.65	34.68	15.74	0.32
Plumtree	5474	2-YR	149.00	361.52	365.51	363.75	365.66	0.002292	3.12	47.82	18.05	0.34
Plumtree	5474	10-YR	307.00	361.52	367.04	364.81	367.28	0.002509	3.89	79.01	22.60	0.37
Plumtree	5474	50-YR	798.00	361.52	371.83	366.91	371.91	0.000421	2.76	569.37	192.62	0.17
Plumtree	5474	100-YR	1134.00	361.52	372.25	368.05	372.38	0.000637	3.51	653.98	201.94	0.21
Plumtree	5474	200-YR	1562.00	361.52	372.73	369.34	372.91	0.000882	4.29	751.94	207.68	0.25
Plumtree	5419	1-YR	92.00	361.46	364.57	363.30	364.70	0.002709	2.94	31.31	14.73	0.36
Plumtree	5419	2-YR	149.00	361.46	365.32	363.81	365.51	0.002926	3.46	43.08	16.50	0.38
Plumtree	5419	10-YR	307.00	361.46	366.80	364.86	367.10	0.003274	4.38	70.11	19.97	0.41
Plumtree	5419	50-YR	798.00	361.46	371.80	366.99	371.88	0.000425	2.81	570.75	212.39	0.17
Plumtree	5419	100-YR	1134.00	361.46	372.22	368.42	372.34	0.000654	3.60	643.69	220.08	0.21
Plumtree	5419	200-YR	1562.00	361.46	372.68	369.65	372.86	0.000924	4.43	727.93	225.49	0.26
Plumtree	5323	1-YR	92.00	361.32	364.23		364.39	0.003855	3.23	28.50	15.03	0.41
Plumtree	5323	2-YR	149.00	361.32	364.98		365.19	0.003779	3.69	40.41	16.90	0.42
Plumtree	5323	10-YR	307.00	361.32	366.56		366.79	0.002782	4.04	98.34	60.71	0.38
Plumtree	5323	50-YR	798.00	361.32	371.80		371.84	0.000243	2.20	715.28	159.49	0.13
Plumtree	5323	100-YR	1134.00	361.32	372.21		372.28	0.000394	2.88	781.48	165.57	0.17
Plumtree	5323	200-YR	1562.00	361.32	372.66		372.77	0.000593	3.65	858.11	173.30	0.21
Plumtree	5209	1-YR	92.00	361.10	363.47	362.85	363.77	0.007879	4.40	20.90	11.84	0.58
Plumtree	5209	2-YR	149.00	361.10	364.21	363.40	364.58	0.007343	4.91	30.37	13.58	0.58
Plumtree	5209	10-YR	307.00	361.10	366.13	364.52	366.44	0.003307	4.66	93.54	67.60	0.42
Plumtree	5209	50-YR	798.00	361.10	371.78	366.83	371.81	0.000196	2.08	817.77	183.69	0.12

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5209	100-YR	1134.00	361.10	372.18	367.49	372.23	0.000321	2.73	891.45	194.28	0.15
Plumtree	5209	200-YR	1562.00	361.10	372.62	368.14	372.70	0.000497	3.50	977.36	206.28	0.19
Plumtree	5107	1-YR	92.00	359.92	362.66	361.97	362.97	0.007717	4.48	20.54	10.84	0.57
Plumtree	5107	2-YR	149.00	359.92	363.17	362.56	363.66	0.011207	5.65	26.39	13.08	0.70
Plumtree	5107	10-YR	307.00	359.92	365.88	363.83	366.12	0.002671	3.95	81.55	34.35	0.38
Plumtree	5107	50-YR	798.00	359.92	371.71	365.97	371.78	0.000315	2.56	530.19	258.21	0.15
Plumtree	5107	100-YR	1134.00	359.92	372.06	366.96	372.18	0.000521	3.37	594.14	273.14	0.20
Plumtree	5107	200-YR	1562.00	359.92	372.42	367.86	372.62	0.000809	4.32	668.99	299.58	0.25
Plumtree	5040	1-YR	92.00	359.23	361.41	361.41	362.09	0.024414	6.62	13.90	10.27	1.00
Plumtree	5040	2-YR	149.00	359.23	362.40	362.00	362.88	0.011887	5.58	26.72	14.91	0.73
Plumtree	5040	10-YR	307.00	359.23	365.81	363.04	365.96	0.001484	3.12	98.48	27.18	0.29
Plumtree	5040	50-YR	798.00	359.23	371.70	365.04	371.76	0.000235	2.34	679.39	266.11	0.13
Plumtree	5040	100-YR	1134.00	359.23	372.04	366.00	372.15	0.000380	3.06	773.70	282.55	0.17
Plumtree	5040	200-YR	1562.00	359.23	372.40	366.92	372.57	0.000580	3.86	878.28	304.35	0.21
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	92.00	359.04	360.92	360.62	361.24	0.011442	4.51	20.42	16.03	0.70
Plumtree	4932	2-YR	149.00	359.04	361.71	361.05	362.01	0.006777	4.37	34.07	18.59	0.57
Plumtree	4932	10-YR	307.00	359.04	363.72	361.94	363.96	0.002812	3.94	77.95	38.26	0.39
Plumtree	4932	50-YR	798.00	359.04	371.50	363.78	371.56	0.000180	2.29	651.09	200.32	0.12
Plumtree	4932	100-YR	1134.00	359.04	371.91	364.63	372.02	0.000299	3.03	735.42	219.23	0.16
Plumtree	4932	200-YR	1562.00	359.04	372.30	365.57	372.47	0.000468	3.88	827.54	239.20	0.20
Plumtree	4845	1-YR	92.00	357.81	360.64	359.40	360.75	0.002270	2.68	34.35	16.79	0.33
Plumtree	4845	2-YR	149.00	357.81	361.48	359.85	361.62	0.002143	3.02	49.28	18.89	0.33
Plumtree	4845	10-YR	307.00	357.81	363.58	360.78	363.74	0.001499	3.25	94.50	25.73	0.29
Plumtree	4845	50-YR	798.00	357.81	371.51	362.79	371.54	0.000095	1.65	772.00	165.69	0.09
Plumtree	4845	100-YR	1134.00	357.81	371.92	363.84	371.97	0.000165	2.22	830.65	174.08	0.11
Plumtree	4845	200-YR	1562.00	357.81	372.31	365.26	372.40	0.000270	2.90	890.52	183.32	0.15
Plumtree	4745	1-YR	92.00	357.45	360.34		360.47	0.003497	2.88	31.94	19.21	0.39
Plumtree	4745	2-YR	149.00	357.45	361.26		361.39	0.002460	2.89	51.64	23.86	0.35
Plumtree	4745	10-YR	307.00	357.45	363.51		363.60	0.000983	2.56	136.21	88.17	0.24
Plumtree	4745	50-YR	798.00	357.45	371.52		371.52	0.000021	0.82	2035.81	316.87	0.04
Plumtree	4745	100-YR	1134.00	357.45	371.94		371.95	0.000036	1.10	2170.75	324.49	0.06
Plumtree	4745	200-YR	1562.00	357.45	372.35		372.37	0.000058	1.43	2306.25	332.91	0.07
Plumtree	4636	1-YR	92.00	357.61	360.16		360.23	0.001370	2.13	43.25	20.60	0.26
Plumtree	4636	2-YR	149.00	357.61	361.11		361.20	0.001148	2.33	63.92	22.72	0.24
Plumtree	4636	10-YR	307.00	357.61	363.44		363.52	0.000551	2.29	210.14	171.02	0.18
Plumtree	4636	50-YR	798.00	357.61	371.52		371.52	0.000014	0.70	2723.18	503.55	0.03
Plumtree	4636	100-YR	1134.00	357.61	371.94		371.94	0.000023	0.92	2909.80	516.34	0.04
Plumtree	4636	200-YR	1562.00	357.61	372.35		372.36	0.000037	1.19	3095.88	528.50	0.06
Plumtree	4550	1-YR	92.00	357.24	360.02	358.63	360.10	0.001655	2.28	40.43	20.69	0.29
Plumtree	4550	2-YR	149.00	357.24	361.01	359.07	361.09	0.001283	2.37	62.90	24.83	0.26
Plumtree	4550	10-YR	307.00	357.24	363.39	359.96	363.47	0.000583	2.28	145.93	183.13	0.19
Plumtree	4550	50-YR	798.00	357.24	371.52	361.73	371.52	0.000011	0.63	2988.74	479.90	0.03
Plumtree	4550	100-YR	1134.00	357.24	371.94	362.65	371.94	0.000018	0.84	3193.63	495.74	0.04
Plumtree	4550	200-YR	1562.00	357.24	372.35	363.52	372.36	0.000030	1.09	3400.57	521.45	0.05
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	92.00	351.69	358.78	353.88	358.79	0.000072	0.77	120.00	26.67	0.06
Plumtree	4344	2-YR	149.00	351.69	359.54	354.38	359.55	0.000120	1.06	140.54	27.83	0.08
Plumtree	4344	10-YR	307.00	351.69	360.82	355.26	360.87	0.000259	1.73	178.59	34.63	0.12
Plumtree	4344	50-YR	798.00	351.69	361.91	357.10	362.13	0.001005	3.77	222.69	60.87	0.25
Plumtree	4344	100-YR	1134.00	351.69	362.49	358.04	362.85	0.001509	4.87	272.78	95.79	0.31
Plumtree	4344	200-YR	1562.00	351.69	363.17	359.05	363.69	0.002003	5.94	346.52	120.93	0.36
Plumtree	4289	1-YR	92.00	352.78	358.78		358.79	0.000076	0.74	123.74	31.18	0.07
Plumtree	4289	2-YR	149.00	352.78	359.53		359.55	0.000122	1.01	148.22	33.96	0.08
Plumtree	4289	10-YR	307.00	352.78	360.81		360.85	0.000244	1.58	195.72	45.41	0.12
Plumtree	4289	50-YR	798.00	352.78	361.88		362.05	0.000870	3.32	274.16	119.52	0.24
Plumtree	4289	100-YR	1134.00	352.78	362.47		362.73	0.001200	4.15	352.49	145.10	0.28
Plumtree	4289	200-YR	1562.00	352.78	363.17		363.51	0.001451	4.88	462.38	166.23	0.32
Plumtree	4185	1-YR	133.00	354.77	358.54		358.74	0.004442	3.57	37.25	19.89	0.46
Plumtree	4185	2-YR	206.00	354.77	359.23		359.48	0.004139	3.97	51.84	22.17	0.46
Plumtree	4185	10-YR	404.00	354.77	360.33	359.04	360.73	0.004935	5.12	86.68	79.32	0.52
Plumtree	4185	50-YR	774.00	354.77	361.34		361.84	0.005124	6.18	200.70	140.47	0.55
Plumtree	4185	100-YR	1066.00	354.77	362.10		362.51	0.003834	6.02	337.14	206.82	0.49
Plumtree	4185	200-YR	1465.00	354.77	362.99		363.30	0.002743	5.71	535.92	243.01	0.43
Plumtree	4033	1-YR	133.00	355.05	358.00		358.17	0.003101	3.26	40.81	19.08	0.39

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	4033	2-YR	206.00	355.05	358.69		358.91	0.003250	3.77	54.71	21.07	0.41
Plumtree	4033	10-YR	404.00	355.05	359.92		360.15	0.002630	4.19	158.95	139.20	0.39
Plumtree	4033	50-YR	774.00	355.05	361.08		361.28	0.002039	4.45	346.98	181.48	0.36
Plumtree	4033	100-YR	1066.00	355.05	361.91		362.08	0.001594	4.37	510.69	227.05	0.33
Plumtree	4033	200-YR	1465.00	355.05	362.78		362.95	0.001528	4.71	739.38	294.39	0.33
Plumtree	3930	1-YR	133.00	354.49	357.32	356.73	357.66	0.008152	4.69	28.37	15.94	0.62
Plumtree	3930	2-YR	206.00	354.49	358.01	357.26	358.42	0.007113	5.12	40.77	20.98	0.60
Plumtree	3930	10-YR	404.00	354.49	359.15	358.33	359.71	0.006421	6.19	89.90	104.46	0.60
Plumtree	3930	50-YR	774.00	354.49	360.88	359.93	361.07	0.002028	4.61	380.69	204.89	0.36
Plumtree	3930	100-YR	1066.00	354.49	361.78	360.39	361.92	0.001392	4.27	574.97	224.93	0.31
Plumtree	3930	200-YR	1465.00	354.49	362.68	360.78	362.80	0.001160	4.28	785.40	243.26	0.29
Plumtree	3816	1-YR	133.00	353.49	356.78	355.63	356.99	0.004006	3.69	36.09	17.82	0.44
Plumtree	3816	2-YR	206.00	353.49	357.55	356.17	357.81	0.003686	4.10	56.13	34.16	0.43
Plumtree	3816	10-YR	404.00	353.49	358.87	357.41	359.16	0.002877	4.69	142.35	104.63	0.41
Plumtree	3816	50-YR	774.00	353.49	360.71	359.06	360.87	0.001391	4.17	394.56	165.33	0.30
Plumtree	3816	100-YR	1066.00	353.49	361.63	359.57	361.77	0.001153	4.18	558.12	192.28	0.28
Plumtree	3816	200-YR	1465.00	353.49	362.54	360.11	362.68	0.001042	4.32	727.37	215.50	0.27
Plumtree	3688	1-YR	133.00	352.86	356.38	354.86	356.55	0.002818	3.35	39.73	15.26	0.37
Plumtree	3688	2-YR	206.00	352.86	357.14	355.42	357.38	0.002925	3.96	55.35	30.73	0.38
Plumtree	3688	10-YR	404.00	352.86	358.50	356.59	358.81	0.002674	4.77	132.20	82.75	0.39
Plumtree	3688	50-YR	774.00	352.86	360.48	358.54	360.68	0.001486	4.50	354.53	139.77	0.31
Plumtree	3688	100-YR	1066.00	352.86	361.42	359.21	361.61	0.001334	4.66	496.62	162.83	0.30
Plumtree	3688	200-YR	1465.00	352.86	362.33	359.87	362.52	0.001294	4.95	654.21	183.74	0.30
Plumtree	3550	1-YR	133.00	352.85	355.86	354.68	356.07	0.004397	3.64	36.58	18.23	0.45
Plumtree	3550	2-YR	206.00	352.85	356.71	355.21	356.93	0.003625	3.75	55.94	27.56	0.43
Plumtree	3550	10-YR	404.00	352.85	358.16	356.44	358.43	0.002569	4.29	117.83	61.27	0.39
Plumtree	3550	50-YR	774.00	352.85	360.27	357.79	360.48	0.001395	4.23	312.23	123.30	0.31
Plumtree	3550	100-YR	1066.00	352.85	361.21	358.59	361.43	0.001273	4.46	428.26	143.01	0.30
Plumtree	3550	200-YR	1465.00	352.85	362.09	359.44	362.34	0.001324	4.93	543.88	158.30	0.31
Plumtree	3428	1-YR	133.00	351.86	355.43	353.94	355.62	0.003065	3.49	38.07	14.87	0.38
Plumtree	3428	2-YR	206.00	351.86	356.27	354.52	356.52	0.003068	4.03	53.93	22.99	0.39
Plumtree	3428	10-YR	404.00	351.86	357.68	355.74	358.07	0.003325	5.13	96.04	38.88	0.43
Plumtree	3428	50-YR	774.00	351.86	359.88	357.47	360.25	0.002231	5.48	217.15	74.82	0.37
Plumtree	3428	100-YR	1066.00	351.86	360.76	358.43	361.20	0.002387	6.16	281.85	90.83	0.39
Plumtree	3428	200-YR	1465.00	351.86	361.50	359.49	362.07	0.002886	7.21	344.41	104.43	0.44
Plumtree	3296	1-YR	133.00	351.72	355.04		355.22	0.002928	3.38	39.32	15.18	0.37
Plumtree	3296	2-YR	206.00	351.72	355.86		356.10	0.003221	3.94	52.30	16.95	0.40
Plumtree	3296	10-YR	404.00	351.72	357.09		357.53	0.004988	5.29	76.33	22.48	0.51
Plumtree	3296	50-YR	774.00	351.72	359.43		359.89	0.003180	5.50	150.35	49.65	0.44
Plumtree	3296	100-YR	1066.00	351.72	360.20		360.80	0.003507	6.36	205.93	89.41	0.47
Plumtree	3296	200-YR	1465.00	351.72	360.70	358.96	361.57	0.004646	7.75	255.96	108.73	0.55
Plumtree	3179	1-YR	133.00	350.39	354.73	353.36	354.86	0.003041	2.94	45.27	22.53	0.37
Plumtree	3179	2-YR	206.00	350.39	355.56	353.89	355.71	0.002937	3.09	66.70	30.55	0.37
Plumtree	3179	10-YR	404.00	350.39	356.88	354.90	357.05	0.002490	3.23	126.35	52.53	0.36
Plumtree	3179	50-YR	774.00	350.39	359.52	356.31	359.63	0.000725	2.79	350.90	130.65	0.22
Plumtree	3179	100-YR	1066.00	350.39	360.36	356.78	360.50	0.000754	3.14	449.64	152.55	0.23
Plumtree	3179	200-YR	1465.00	350.39	360.96	357.40	361.15	0.000972	3.80	522.69	160.68	0.26
Plumtree	3077	1-YR	133.00	350.72	354.36		354.53	0.003377	3.30	40.32	18.29	0.39
Plumtree	3077	2-YR	206.00	350.72	355.22		355.39	0.003447	3.34	68.64	75.50	0.41
Plumtree	3077	10-YR	404.00	350.72	356.77		356.86	0.001115	2.73	254.34	153.84	0.25
Plumtree	3077	50-YR	774.00	350.72	359.53		359.57	0.000268	1.95	743.84	194.04	0.14
Plumtree	3077	100-YR	1066.00	350.72	360.38		360.42	0.000300	2.24	912.87	212.44	0.15
Plumtree	3077	200-YR	1465.00	350.72	360.99		361.05	0.000410	2.77	1048.80	233.82	0.17
Plumtree	2978	1-YR	133.00	350.53	354.07	352.44	354.22	0.002760	3.19	41.63	16.84	0.36
Plumtree	2978	2-YR	206.00	350.53	354.84	353.03	355.04	0.003447	3.58	57.49	24.01	0.41
Plumtree	2978	10-YR	404.00	350.53	356.46	354.31	356.69	0.002397	3.89	111.16	46.23	0.37
Plumtree	2978	50-YR	774.00	350.53	359.36	355.73	359.51	0.000845	3.45	319.62	103.98	0.24
Plumtree	2978	100-YR	1066.00	350.53	360.16	356.53	360.36	0.000958	3.97	418.13	136.38	0.26
Plumtree	2978	200-YR	1465.00	350.53	360.67	357.51	360.96	0.001326	4.89	493.06	156.59	0.31
Plumtree	2917	1-YR	133.00	350.36	353.87	352.33	354.04	0.003149	3.34	39.85	16.93	0.38
Plumtree	2917	2-YR	206.00	350.36	354.59	352.90	354.82	0.003645	3.87	53.27	20.31	0.42
Plumtree	2917	10-YR	404.00	350.36	356.28	354.18	356.53	0.002874	4.00	103.99	41.16	0.40
Plumtree	2917	50-YR	774.00	350.36	359.30	355.77	359.46	0.000852	3.41	298.87	201.50	0.24
Plumtree	2917	100-YR	1066.00	350.36	360.14	356.46	360.29	0.000782	3.56	572.67	249.95	0.24
Plumtree	2917	200-YR	1465.00	350.36	360.67	357.31	360.86	0.000980	4.18	710.44	272.93	0.27
Plumtree	2900 Frederick Rd		Culvert									

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	2827	1-YR	133.00	350.08	353.64	353.09	353.91	0.008839	4.16	31.94	22.71	0.62
Plumtree	2827	2-YR	206.00	350.08	354.32	353.59	354.58	0.006822	4.04	51.97	37.75	0.56
Plumtree	2827	10-YR	404.00	350.08	355.28	354.46	355.63	0.005193	4.81	91.21	87.58	0.53
Plumtree	2827	50-YR	774.00	350.08	356.17	355.39	356.61	0.005124	5.83	204.99	128.72	0.55
Plumtree	2827	100-YR	1066.00	350.08	356.69	356.06	357.19	0.005128	6.41	277.69	149.09	0.57
Plumtree	2827	200-YR	1465.00	350.08	357.34	356.60	357.86	0.004771	6.84	381.61	170.07	0.56
Plumtree	2759	1-YR	133.00	349.32	353.48		353.61	0.001776	2.86	47.24	19.11	0.28
Plumtree	2759	2-YR	206.00	349.32	354.10		354.30	0.002369	3.64	64.32	43.98	0.33
Plumtree	2759	10-YR	404.00	349.32	355.05		355.34	0.003000	4.75	155.28	141.18	0.39
Plumtree	2759	50-YR	774.00	349.32	355.96		356.27	0.003368	5.67	305.04	187.32	0.42
Plumtree	2759	100-YR	1066.00	349.32	356.51		356.82	0.003335	6.01	416.60	213.03	0.43
Plumtree	2759	200-YR	1465.00	349.32	357.21		357.49	0.002984	6.10	574.65	237.78	0.41
Plumtree	2589	1-YR	133.00	349.71	353.04	352.51	353.19	0.003611	3.62	64.55	58.06	0.39
Plumtree	2589	2-YR	206.00	349.71	353.71		353.83	0.002863	3.61	106.04	70.15	0.36
Plumtree	2589	10-YR	404.00	349.71	354.65		354.79	0.002887	4.26	199.42	126.00	0.37
Plumtree	2589	50-YR	774.00	349.71	355.44		355.64	0.003715	5.44	312.66	155.27	0.43
Plumtree	2589	100-YR	1066.00	349.71	355.96		356.19	0.003867	5.94	397.68	170.39	0.45
Plumtree	2589	200-YR	1465.00	349.71	356.60		356.87	0.004495	6.90	533.50	233.86	0.49
Plumtree	2485	1-YR	133.00	349.20	351.76	351.54	352.42	0.017142	6.57	20.87	14.75	0.85
Plumtree	2485	2-YR	206.00	349.20	352.36	352.26	353.17	0.016264	7.37	32.19	24.91	0.85
Plumtree	2485	10-YR	404.00	349.20	353.66	353.66	354.26	0.008570	7.18	111.98	111.09	0.66
Plumtree	2485	50-YR	774.00	349.20	354.70		355.13	0.006139	7.18	253.29	154.78	0.58
Plumtree	2485	100-YR	1066.00	349.20	355.36		355.71	0.005025	7.09	362.21	176.28	0.54
Plumtree	2485	200-YR	1465.00	349.20	356.10		356.41	0.004204	7.07	502.04	197.84	0.50
Plumtree	2331	1-YR	133.00	348.10	350.91		351.12	0.004206	3.68	36.10	17.56	0.45
Plumtree	2331	2-YR	206.00	348.10	351.70		351.95	0.003694	4.07	51.47	22.54	0.44
Plumtree	2331	10-YR	404.00	348.10	352.93	351.43	353.27	0.003425	4.93	118.84	95.42	0.45
Plumtree	2331	50-YR	774.00	348.10	354.07		354.44	0.003212	5.70	250.99	127.15	0.45
Plumtree	2331	100-YR	1066.00	348.10	354.72		355.10	0.003156	6.13	336.85	138.45	0.46
Plumtree	2331	200-YR	1465.00	348.10	355.41		355.84	0.003229	6.71	437.22	151.39	0.47
Plumtree	2153	1-YR	133.00	346.39	350.55		350.67	0.001577	2.77	50.11	19.01	0.26
Plumtree	2153	2-YR	206.00	346.39	351.27		351.45	0.002045	3.48	65.18	22.62	0.30
Plumtree	2153	10-YR	404.00	346.39	352.44		352.71	0.002693	4.52	146.18	92.83	0.35
Plumtree	2153	50-YR	774.00	346.39	353.56		353.87	0.003052	5.47	269.97	124.97	0.38
Plumtree	2153	100-YR	1066.00	346.39	354.19		354.52	0.003174	5.95	354.25	137.21	0.40
Plumtree	2153	200-YR	1465.00	346.39	354.87		355.23	0.003343	6.50	449.70	144.41	0.41
Plumtree	1994	1-YR	133.00	346.45	350.23		350.37	0.002131	3.04	43.72	15.58	0.31
Plumtree	1994	2-YR	206.00	346.45	350.84		351.07	0.002806	3.85	58.20	31.62	0.36
Plumtree	1994	10-YR	404.00	346.45	351.90		352.23	0.003360	4.97	132.48	102.98	0.41
Plumtree	1994	50-YR	774.00	346.45	352.99		353.34	0.003474	5.84	263.45	137.48	0.44
Plumtree	1994	100-YR	1066.00	346.45	353.63		353.99	0.003435	6.24	358.81	158.16	0.44
Plumtree	1994	200-YR	1465.00	346.45	354.33		354.70	0.003361	6.63	475.89	172.96	0.44
Plumtree	1888	1-YR	133.00	345.73	349.95	348.29	350.13	0.002505	3.39	46.06	34.88	0.35
Plumtree	1888	2-YR	206.00	345.73	350.55	348.93	350.78	0.002778	4.04	73.34	56.82	0.38
Plumtree	1888	10-YR	404.00	345.73	351.60	350.46	351.88	0.002940	4.94	159.74	112.39	0.41
Plumtree	1888	50-YR	774.00	345.73	352.70	351.80	352.99	0.002874	5.65	300.02	138.36	0.42
Plumtree	1888	100-YR	1066.00	345.73	353.35	352.24	353.64	0.002871	6.07	393.34	151.31	0.43
Plumtree	1888	200-YR	1465.00	345.73	354.02	352.71	354.35	0.002993	6.63	500.47	164.23	0.44
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	133.00	346.61	349.89		349.96	0.001300	2.43	83.07	65.29	0.26
Plumtree	1830	2-YR	206.00	346.61	350.48		350.57	0.001378	2.77	125.38	82.41	0.28
Plumtree	1830	10-YR	404.00	346.61	351.53		351.62	0.001306	3.19	236.89	135.50	0.28
Plumtree	1830	50-YR	774.00	346.61	352.64		352.76	0.001374	3.84	401.49	153.30	0.30
Plumtree	1830	100-YR	1066.00	346.61	353.26		353.41	0.001464	4.28	498.02	155.56	0.31
Plumtree	1830	200-YR	1465.00	346.61	353.90		354.08	0.001663	4.89	597.71	157.87	0.34
Plumtree	1641	1-YR	133.00	345.19	349.55		349.67	0.001722	2.88	57.14	27.74	0.28
Plumtree	1641	2-YR	206.00	345.19	349.99		350.19	0.002556	3.82	72.42	43.64	0.35
Plumtree	1641	10-YR	404.00	345.19	350.90		351.20	0.003270	5.01	148.18	102.67	0.41
Plumtree	1641	50-YR	774.00	345.19	351.97		352.30	0.003542	6.00	275.64	137.11	0.45
Plumtree	1641	100-YR	1066.00	345.19	352.61		352.94	0.003447	6.37	367.32	148.33	0.45
Plumtree	1641	200-YR	1465.00	345.19	353.16		353.55	0.003906	7.17	451.93	157.50	0.48
Plumtree	1463	1-YR	133.00	343.35	349.47		349.50	0.000455	1.53	105.49	95.93	0.15
Plumtree	1463	2-YR	206.00	343.35	349.89		349.94	0.000629	1.95	150.95	117.57	0.18
Plumtree	1463	10-YR	404.00	343.35	350.80		350.88	0.000794	2.55	270.22	143.18	0.21
Plumtree	1463	50-YR	774.00	343.35	351.80		351.92	0.001064	3.37	427.73	172.17	0.25
Plumtree	1463	100-YR	1066.00	343.35	352.41		352.55	0.001191	3.82	537.13	189.03	0.27
Plumtree	1463	200-YR	1465.00	343.35	352.90		353.08	0.001506	4.52	632.05	198.00	0.31

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	1291	1-YR	403.00	344.26	349.03		349.20	0.003498	4.06	191.49	219.14	0.41
Plumtree	1291	2-YR	589.00	344.26	349.39		349.58	0.003919	4.61	274.27	239.82	0.44
Plumtree	1291	10-YR	1171.00	344.26	350.30		350.49	0.003744	5.26	526.42	304.82	0.45
Plumtree	1291	50-YR	2027.00	344.26	351.39		351.56	0.002913	5.39	892.94	367.80	0.41
Plumtree	1291	100-YR	2624.00	344.26	352.05		352.21	0.002538	5.43	1151.42	409.24	0.39
Plumtree	1291	200-YR	3174.00	344.26	352.60		352.74	0.002178	5.33	1376.48	415.54	0.36
Plumtree	1124	1-YR	403.00	343.58	348.34		348.56	0.004144	4.57	204.17	242.82	0.46
Plumtree	1124	2-YR	589.00	343.58	348.83		348.98	0.003167	4.29	327.53	261.72	0.41
Plumtree	1124	10-YR	1171.00	343.58	349.85		349.97	0.002409	4.36	601.82	277.97	0.37
Plumtree	1124	50-YR	2027.00	343.58	351.03		351.15	0.001953	4.61	943.66	303.41	0.35
Plumtree	1124	100-YR	2624.00	343.58	351.71		351.84	0.001805	4.80	1157.37	318.37	0.34
Plumtree	1124	200-YR	3174.00	343.58	352.28		352.41	0.001718	4.96	1340.58	328.36	0.34
Plumtree	994	1-YR	403.00	342.85	347.94		348.07	0.003024	3.46	214.42	181.36	0.39
Plumtree	994	2-YR	589.00	342.85	348.49		348.60	0.002454	3.40	324.22	206.84	0.36
Plumtree	994	10-YR	1171.00	342.85	349.53		349.66	0.002227	3.97	550.84	229.15	0.36
Plumtree	994	50-YR	2027.00	342.85	350.73		350.88	0.002003	4.53	844.76	262.24	0.36
Plumtree	994	100-YR	2624.00	342.85	351.42		351.59	0.001917	4.84	1032.25	278.91	0.36
Plumtree	994	200-YR	3174.00	342.85	351.99		352.17	0.001870	5.09	1194.09	292.48	0.36
Plumtree	911	1-YR	403.00	342.92	347.63		347.81	0.003184	4.14	210.30	192.83	0.41
Plumtree	911	2-YR	589.00	342.92	348.29		348.41	0.002180	3.77	344.74	214.17	0.34
Plumtree	911	10-YR	1171.00	342.92	349.36		349.48	0.002039	4.31	584.16	234.76	0.35
Plumtree	911	50-YR	2027.00	342.92	350.57		350.72	0.001933	4.87	887.33	265.16	0.35
Plumtree	911	100-YR	2624.00	342.92	351.27		351.43	0.001873	5.16	1078.73	280.24	0.35
Plumtree	911	200-YR	3174.00	342.92	351.84		352.01	0.001844	5.41	1242.46	292.60	0.35
Plumtree	762	1-YR	403.00	342.54	346.98		347.25	0.004547	4.65	122.16	61.15	0.49
Plumtree	762	2-YR	589.00	342.54	347.54		347.92	0.005233	5.60	191.84	162.52	0.54
Plumtree	762	10-YR	1171.00	342.54	348.86		349.11	0.003120	5.41	467.12	235.25	0.44
Plumtree	762	50-YR	2027.00	342.54	350.18		350.40	0.002377	5.58	800.18	270.34	0.40
Plumtree	762	100-YR	2624.00	342.54	350.91		351.13	0.002183	5.78	1005.28	290.03	0.40
Plumtree	762	200-YR	3174.00	342.54	351.50		351.73	0.002080	5.97	1180.20	305.21	0.39
Plumtree	658	1-YR	403.00	340.20	346.90		347.02	0.000942	2.80	187.37	172.74	0.24
Plumtree	658	2-YR	589.00	340.20	347.50		347.64	0.001043	3.22	307.10	227.82	0.26
Plumtree	658	10-YR	1171.00	340.20	348.76		348.91	0.001050	3.77	652.94	296.21	0.27
Plumtree	658	50-YR	2027.00	340.20	350.08		350.23	0.000980	4.16	1061.18	321.01	0.27
Plumtree	658	100-YR	2624.00	340.20	350.82		350.97	0.000969	4.40	1301.98	335.47	0.27
Plumtree	658	200-YR	3174.00	340.20	351.40		351.56	0.000978	4.63	1502.87	349.84	0.28
Plumtree	526	1-YR	403.00	341.63	346.76		346.87	0.001230	3.00	260.85	263.81	0.26
Plumtree	526	2-YR	589.00	341.63	347.40		347.49	0.000978	2.95	434.38	279.29	0.24
Plumtree	526	10-YR	1171.00	341.63	348.68		348.76	0.000837	3.21	810.87	306.43	0.23
Plumtree	526	50-YR	2027.00	341.63	350.01		350.09	0.000803	3.60	1234.26	333.26	0.24
Plumtree	526	100-YR	2624.00	341.63	350.74		350.83	0.000804	3.84	1483.30	345.73	0.24
Plumtree	526	200-YR	3174.00	341.63	351.32		351.43	0.000816	4.06	1688.74	355.82	0.24
Plumtree	380	1-YR	403.00	341.92	346.36		346.60	0.002749	4.07	133.28	131.73	0.39
Plumtree	380	2-YR	589.00	341.92	347.07	345.30	347.27	0.002206	4.07	259.73	192.48	0.36
Plumtree	380	10-YR	1171.00	341.92	348.40		348.58	0.001741	4.39	532.70	216.16	0.34
Plumtree	380	50-YR	2027.00	341.92	349.72		349.92	0.001621	4.91	829.81	232.10	0.34
Plumtree	380	100-YR	2624.00	341.92	350.45		350.66	0.001617	5.25	1000.14	238.66	0.34
Plumtree	380	200-YR	3174.00	341.92	351.02		351.25	0.001640	5.56	1137.83	243.01	0.35
Plumtree	146	1-YR	403.00	340.73	343.96	343.96	345.14	0.019944	8.71	46.26	19.90	1.01
Plumtree	146	2-YR	589.00	340.73	344.83	344.83	346.09	0.014864	9.05	71.16	45.12	0.91
Plumtree	146	10-YR	1171.00	340.73	346.51	346.51	347.69	0.009303	9.57	200.83	105.18	0.77
Plumtree	146	50-YR	2027.00	340.73	347.68	347.68	349.04	0.009413	11.15	341.23	133.58	0.81
Plumtree	146	100-YR	2624.00	340.73	348.29	348.29	349.77	0.009675	12.05	425.68	146.77	0.83
Plumtree	146	200-YR	3174.00	340.73	348.77	348.77	350.34	0.009817	12.73	499.04	156.00	0.85
Plumtree	63	1-YR	403.00	340.00	343.53	342.19	343.76	0.003501	3.87	104.26	43.43	0.44
Plumtree	63	2-YR	589.00	340.00	344.20	342.77	344.50	0.003507	4.36	135.42	50.40	0.45
Plumtree	63	10-YR	1171.00	340.00	345.62	344.00	346.12	0.003506	5.70	224.27	76.57	0.48
Plumtree	63	50-YR	2027.00	340.00	347.10	345.28	347.79	0.003501	6.93	372.06	118.52	0.51
Plumtree	63	100-YR	2624.00	340.00	347.89	346.15	348.69	0.003501	7.55	472.43	133.29	0.52
Plumtree	63	200-YR	3174.00	340.00	348.53	346.80	349.40	0.003506	8.04	559.84	142.15	0.53

HEC-RAS Plan: F River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	10286	1-YR	396.90	396.81	0.09	2.34	0.01	2.22	100.80	119.98	150.03	0.48
Plumtree	10286	2-YR	397.10	396.98	0.12	2.33	0.01	4.42	135.53	167.05	154.15	0.59
Plumtree	10286	10-YR	397.76	397.61	0.15	2.52	0.03	19.19	248.06	328.76	169.55	0.71
Plumtree	10286	50-YR	398.29	398.04	0.25	2.51	0.01	44.68	402.19	548.13	179.49	1.11
Plumtree	10286	100-YR	398.48	398.16	0.32	2.45	0.00	59.65	480.45	659.90	180.36	1.39
Plumtree	10286	200-YR	398.71	398.31	0.40	2.34	0.02	79.52	570.74	790.75	181.44	1.69
Plumtree	10044	1-YR	394.55	394.38	0.18	2.60	0.01		152.29	70.71	160.06	0.73
Plumtree	10044	2-YR	394.76	394.57	0.19	2.43	0.01		195.94	111.06	181.74	0.80
Plumtree	10044	10-YR	395.21	394.81	0.41	0.61	0.10	0.00	352.99	243.01	200.40	1.68
Plumtree	10044	50-YR	395.76	395.36	0.40	0.38	0.10	0.55	517.82	476.63	232.53	1.65
Plumtree	10044	100-YR	396.04	395.67	0.37	0.40	0.09	1.60	589.38	609.02	251.98	1.49
Plumtree	10044	200-YR	396.36	396.01	0.34	0.44	0.08	3.45	671.01	766.54	272.07	1.39
Plumtree	9814	1-YR	391.94	391.65	0.29	0.64	0.02		223.00		43.52	0.79
Plumtree	9814	2-YR	392.32	392.01	0.31	0.55	0.01	0.00	307.00		52.13	0.83
Plumtree	9814	10-YR	394.04	393.96	0.08	0.04	0.01	24.92	447.17	123.91	271.90	0.20
Plumtree	9814	50-YR	395.27	395.21	0.06	0.03	0.00	75.17	609.30	310.52	303.77	0.17
Plumtree	9814	100-YR	395.55	395.48	0.07	0.03	0.00	97.01	713.30	389.70	314.08	0.20
Plumtree	9814	200-YR	395.84	395.75	0.09	0.04	0.00	126.26	852.36	462.38	362.61	0.25
Plumtree	9762	1-YR	391.29	390.84	0.44	0.16	0.09		223.00		30.29	1.18
Plumtree	9762	2-YR	391.76	391.35	0.41	0.15	0.07		303.99	3.01	69.10	1.05
Plumtree	9762	10-YR	393.99	393.94	0.05	0.02	0.01	13.28	402.14	180.59	227.75	0.15
Plumtree	9762	50-YR	395.24	395.18	0.06	0.02	0.01	47.29	601.17	346.54	285.66	0.17
Plumtree	9762	100-YR	395.52	395.44	0.07	0.02	0.01	62.17	703.55	434.28	314.34	0.20
Plumtree	9762	200-YR	395.80	395.71	0.09	0.03	0.01	82.46	840.41	518.13	331.51	0.25
Plumtree	9732	1-YR	391.04	390.89	0.15				223.00		34.50	0.34
Plumtree	9732	2-YR	391.54	391.35	0.19				307.00		37.47	0.41
Plumtree	9732	10-YR	393.95	393.80	0.16			3.47	589.58	2.95	166.72	0.28
Plumtree	9732	50-YR	395.21	395.07	0.14			34.94	781.36	178.70	222.40	0.28
Plumtree	9732	100-YR	395.48	395.31	0.17			47.55	911.61	240.84	232.23	0.35
Plumtree	9732	200-YR	395.76	395.56	0.21			64.64	1058.29	318.08	240.90	0.44
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	389.37	389.11	0.26	0.55	0.01	0.02	222.83	0.16	33.58	0.64
Plumtree	9589	2-YR	389.89	389.59	0.30	0.55	0.02	0.84	305.09	1.07	38.85	0.68
Plumtree	9589	10-YR	391.19	390.71	0.48	0.69	0.09	5.80	582.22	7.98	54.69	0.95
Plumtree	9589	50-YR	392.13	391.24	0.89	0.83	0.04	37.89	938.92	18.18	69.25	1.76
Plumtree	9589	100-YR	392.62	391.58	1.04	0.87	0.07	61.29	1111.64	27.07	79.35	2.03
Plumtree	9589	200-YR	393.12	391.92	1.20	0.92	0.10	94.23	1306.07	40.70	102.34	2.34
Plumtree	9499	1-YR	388.81	388.56	0.25	1.15	0.01		175.89	11.11	39.96	0.65
Plumtree	9499	2-YR	389.32	388.96	0.36	1.35	0.00		263.75	25.25	50.84	0.92
Plumtree	9499	10-YR	390.40	389.61	0.79	1.67	0.08	0.12	547.12	85.76	86.99	2.00
Plumtree	9499	50-YR	391.26	390.45	0.81	1.79	0.03	81.81	812.99	223.20	154.00	2.17
Plumtree	9499	100-YR	391.68	390.79	0.89	1.81	0.04	154.55	970.07	312.38	157.77	2.45
Plumtree	9499	200-YR	392.10	391.10	1.00	1.82	0.04	243.22	1145.43	414.35	161.29	2.80
Plumtree	9398	1-YR	387.65	387.28	0.37	3.99	0.06		187.00		52.25	1.19
Plumtree	9398	2-YR	387.96	387.58	0.38	3.78	0.08		289.00		80.11	1.23
Plumtree	9398	10-YR	388.65	388.13	0.52	2.96	0.15	13.37	616.00	3.63	120.45	1.46
Plumtree	9398	50-YR	389.44	388.36	1.08	2.79	0.09	44.21	1061.88	11.92	125.14	2.91
Plumtree	9398	100-YR	389.84	388.59	1.25	2.49	0.08	79.85	1333.92	23.22	129.89	3.26
Plumtree	9398	200-YR	390.24	388.85	1.39	2.19	0.08	126.80	1635.45	40.75	135.17	3.51
Plumtree	9301	1-YR	383.61	382.65	0.96	2.23	0.00		187.00		34.65	3.17
Plumtree	9301	2-YR	384.10	382.91	1.20	2.29	0.02		289.00		36.20	3.60
Plumtree	9301	10-YR	385.54	383.50	2.04	1.97	0.05	0.86	631.53	0.61	39.83	5.24
Plumtree	9301	50-YR	386.56	384.63	1.94	2.70	0.14	14.23	1090.75	13.02	46.63	4.21
Plumtree	9301	100-YR	387.26	385.19	2.08	2.76	0.00	28.92	1380.90	27.18	50.03	4.28
Plumtree	9301	200-YR	387.98	385.81	2.17	2.61	0.05	51.74	1701.78	49.48	53.79	4.27
Plumtree	9196	1-YR	381.19	380.80	0.38	0.20	0.11		187.00		49.64	1.23
Plumtree	9196	2-YR	381.57	381.07	0.50	0.18	0.14		289.00		51.46	1.47
Plumtree	9196	10-YR	382.57	381.75	0.82	0.10	0.23	0.99	631.46	0.56	56.21	2.02
Plumtree	9196	50-YR	383.73	382.25	1.48	0.07	0.33	6.04	1108.02	3.94	59.64	3.37
Plumtree	9196	100-YR	384.51	382.42	2.09	0.07	0.38	10.10	1420.16	6.74	60.80	4.65
Plumtree	9196	200-YR	385.31	382.67	2.65	0.07	0.44	17.42	1773.71	11.87	62.51	5.72
Plumtree	8987	1-YR	373.28	373.25	0.03	0.02	0.01		187.00		46.11	0.05
Plumtree	8987	2-YR	374.53	374.50	0.03	0.02	0.01		289.00		53.63	0.06
Plumtree	8987	10-YR	377.96	377.92	0.04	0.01	0.01	5.77	620.93	6.31	74.21	0.06
Plumtree	8987	50-YR	381.64	381.59	0.04	0.01	0.01	39.30	1037.87	40.83	96.30	0.06
Plumtree	8987	100-YR	383.05	382.99	0.05	0.01	0.01	66.66	1302.83	67.51	105.67	0.07
Plumtree	8987	200-YR	384.39	384.33	0.06	0.01	0.01	102.99	1596.57	103.44	115.31	0.09

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	8753	1-YR	373.25	373.25	0.00	0.01	0.00		187.00		102.01	0.01
Plumtree	8753	2-YR	374.51	374.50	0.00	0.01	0.00		289.00		109.80	0.01
Plumtree	8753	10-YR	377.94	377.93	0.01	0.00	0.00	1.88	629.35	1.76	131.01	0.01
Plumtree	8753	50-YR	381.62	381.61	0.01	0.00	0.00	15.09	1088.81	14.10	153.79	0.01
Plumtree	8753	100-YR	383.02	383.01	0.01	0.00	0.00	26.56	1385.63	24.81	162.50	0.02
Plumtree	8753	200-YR	384.37	384.35	0.02	0.00	0.00	42.31	1721.16	39.53	170.80	0.02
Plumtree	8579	1-YR	373.25	373.24	0.00	0.01	0.00		187.00		95.16	0.01
Plumtree	8579	2-YR	374.50	374.50	0.01	0.01	0.00		289.00		102.73	0.01
Plumtree	8579	10-YR	377.94	377.93	0.01	0.01	0.00	2.15	629.22	1.63	123.43	0.01
Plumtree	8579	50-YR	381.61	381.60	0.01	0.01	0.00	17.48	1084.89	15.63	145.62	0.02
Plumtree	8579	100-YR	383.02	383.01	0.01	0.01	0.00	30.77	1378.12	28.12	154.09	0.02
Plumtree	8579	200-YR	384.36	384.34	0.02	0.01	0.00	49.04	1708.54	45.42	162.08	0.02
Plumtree	8374	1-YR	373.24	373.23	0.01	0.01	0.00		187.00		75.65	0.01
Plumtree	8374	2-YR	374.49	374.48	0.01	0.01	0.00		289.00		83.22	0.02
Plumtree	8374	10-YR	377.93	377.91	0.01	0.00	0.00	2.01	629.17	1.82	104.35	0.02
Plumtree	8374	50-YR	381.61	381.59	0.02	0.00	0.00	19.68	1079.77	18.55	126.83	0.02
Plumtree	8374	100-YR	383.01	382.99	0.02	0.00	0.00	35.29	1368.27	33.45	135.43	0.03
Plumtree	8374	200-YR	384.35	384.33	0.03	0.00	0.00	56.88	1692.09	54.03	143.51	0.04
Plumtree	8229	1-YR	373.23	373.23	0.00	0.00	0.00		187.00		101.19	0.01
Plumtree	8229	2-YR	374.49	374.48	0.01	0.00	0.00		289.00		108.75	0.01
Plumtree	8229	10-YR	377.92	377.91	0.01	0.00	0.00	1.85	628.07	3.08	129.42	0.01
Plumtree	8229	50-YR	381.60	381.59	0.01	0.00	0.00	15.90	1081.23	20.87	151.54	0.01
Plumtree	8229	100-YR	383.01	382.99	0.01	0.00	0.00	28.18	1373.33	35.49	160.00	0.02
Plumtree	8229	200-YR	384.35	384.33	0.02	0.00	0.00	45.11	1702.75	55.14	168.03	0.02
Plumtree	8094	1-YR	373.23	373.22	0.00				187.00		120.94	0.00
Plumtree	8094	2-YR	374.48	374.48	0.00				289.00		128.49	0.01
Plumtree	8094	10-YR	377.92	377.91	0.01			1.00	630.93	1.07	149.11	0.01
Plumtree	8094	50-YR	381.60	381.59	0.01			11.15	1095.42	11.43	171.19	0.01
Plumtree	8094	100-YR	383.00	382.99	0.01			20.49	1395.62	20.89	179.63	0.01
Plumtree	8094	200-YR	384.34	384.33	0.01			33.59	1735.27	34.15	187.64	0.02
Plumtree	8000 Weir 1		Inl Struct									
Plumtree	7954	1-YR	371.06	371.06	0.00	0.00	0.00		105.00		130.03	0.00
Plumtree	7954	2-YR	372.15	372.15	0.00	0.00	0.00	0.00	164.00	0.00	136.61	0.00
Plumtree	7954	10-YR	376.03	376.03	0.00	0.00	0.00	2.36	342.32	2.33	160.08	0.00
Plumtree	7954	50-YR	378.74	378.74	0.01	0.00	0.00	13.69	834.79	13.52	176.48	0.01
Plumtree	7954	100-YR	379.21	379.20	0.01	0.00	0.00	22.58	1242.12	22.30	179.25	0.01
Plumtree	7954	200-YR	379.74	379.72	0.02	0.00	0.00	33.12	1633.18	32.70	182.44	0.02
Plumtree	7800	1-YR	371.06	371.06	0.00	0.00	0.00		105.00		145.95	0.00
Plumtree	7800	2-YR	372.15	372.15	0.00	0.00	0.00	0.00	164.00	0.00	152.48	0.00
Plumtree	7800	10-YR	376.03	376.02	0.00	0.00	0.00	2.06	342.88	2.07	175.79	0.00
Plumtree	7800	50-YR	378.74	378.74	0.00	0.00	0.00	12.01	837.92	12.07	192.10	0.01
Plumtree	7800	100-YR	379.20	379.20	0.01	0.00	0.00	19.83	1247.25	19.92	194.85	0.01
Plumtree	7800	200-YR	379.73	379.72	0.01	0.00	0.00	29.10	1640.67	29.23	198.00	0.02
Plumtree	7548	1-YR	371.06	371.06	0.00	0.00	0.00		105.00		204.54	0.00
Plumtree	7548	2-YR	372.15	372.15	0.00	0.00	0.00	0.00	164.00	0.00	211.56	0.00
Plumtree	7548	10-YR	376.03	376.02	0.00	0.00	0.00	1.67	343.84	1.49	236.66	0.00
Plumtree	7548	50-YR	378.74	378.74	0.00	0.00	0.00	10.97	842.27	8.76	285.73	0.00
Plumtree	7548	100-YR	379.20	379.19	0.00	0.00	0.00	19.46	1253.08	14.46	293.90	0.01
Plumtree	7548	200-YR	379.73	379.72	0.01	0.00	0.00	30.79	1646.99	21.21	303.21	0.01
Plumtree	7367	1-YR	371.06	371.06	0.00	0.00	0.00		105.00		262.65	0.00
Plumtree	7367	2-YR	372.15	372.15	0.00	0.00	0.00	0.00	164.00	0.00	269.66	0.00
Plumtree	7367	10-YR	376.02	376.02	0.00	0.00	0.00	1.14	344.56	1.30	294.66	0.00
Plumtree	7367	50-YR	378.74	378.74	0.00	0.00	0.00	5.93	847.72	8.35	362.24	0.00
Plumtree	7367	100-YR	379.20	379.19	0.00	0.00	0.00	9.77	1261.44	15.79	376.24	0.00
Plumtree	7367	200-YR	379.73	379.72	0.00	0.00	0.00	14.82	1657.95	26.23	392.59	0.01
Plumtree	7216	1-YR	371.06	371.06	0.00				105.00		197.25	0.00
Plumtree	7216	2-YR	372.14	372.14	0.00			0.00	164.00	0.00	204.07	0.00
Plumtree	7216	10-YR	376.02	376.02	0.00			1.74	343.70	1.56	228.42	0.00
Plumtree	7216	50-YR	378.74	378.74	0.00			9.13	844.10	8.77	268.02	0.00
Plumtree	7216	100-YR	379.20	379.19	0.01			16.39	1254.62	15.99	282.30	0.01
Plumtree	7216	200-YR	379.72	379.72	0.01			26.04	1647.25	25.70	298.42	0.01
Plumtree	7100 Weir 2		Inl Struct									
Plumtree	7030	1-YR	370.91	370.91	0.00	0.00	0.00		88.00		115.26	0.00
Plumtree	7030	2-YR	371.98	371.98	0.00	0.00	0.00		144.00		121.86	0.00
Plumtree	7030	10-YR	376.02	376.02	0.00	0.00	0.00	1.16	286.38	1.46	148.56	0.00

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	7030	50-YR	378.72	378.72	0.00	0.00	0.00	14.38	744.43	19.19	224.47	0.01
Plumtree	7030	100-YR	379.17	379.16	0.01	0.00	0.00	26.19	1141.48	35.33	230.29	0.01
Plumtree	7030	200-YR	379.70	379.68	0.02	0.00	0.00	42.51	1545.22	57.27	237.64	0.02
Plumtree	6893	1-YR	370.91	370.91	0.00	0.00	0.00		88.00		115.18	0.00
Plumtree	6893	2-YR	371.98	371.97	0.00	0.00	0.00		144.00		121.57	0.00
Plumtree	6893	10-YR	376.02	376.02	0.00	0.00	0.00	1.29	285.89	1.82	160.37	0.00
Plumtree	6893	50-YR	378.72	378.71	0.00	0.00	0.00	22.93	740.83	14.24	233.52	0.01
Plumtree	6893	100-YR	379.17	379.16	0.01	0.00	0.00	41.59	1134.61	26.80	241.91	0.01
Plumtree	6893	200-YR	379.70	379.68	0.02	0.00	0.00	67.02	1533.56	44.42	251.83	0.02
Plumtree	6766	1-YR	370.91	370.91	0.00	0.00	0.00		88.00		155.96	0.00
Plumtree	6766	2-YR	371.98	371.97	0.00	0.00	0.00		144.00		162.34	0.00
Plumtree	6766	10-YR	376.02	376.02	0.00	0.00	0.00	0.92	287.33	0.75	188.79	0.00
Plumtree	6766	50-YR	378.72	378.72	0.00	0.00	0.00	10.88	753.10	14.02	287.82	0.00
Plumtree	6766	100-YR	379.16	379.16	0.01	0.00	0.00	20.91	1156.41	25.67	313.79	0.01
Plumtree	6766	200-YR	379.69	379.68	0.01	0.00	0.00	36.18	1567.43	41.39	340.74	0.01
Plumtree	6663	1-YR	370.91	370.91	0.00				88.00		137.26	0.00
Plumtree	6663	2-YR	371.97	371.97	0.00				144.00		146.72	0.00
Plumtree	6663	10-YR	376.02	376.02	0.00			2.47	285.78	0.75	208.07	0.00
Plumtree	6663	50-YR	378.72	378.71	0.00			27.65	732.54	17.81	331.59	0.00
Plumtree	6663	100-YR	379.16	379.15	0.01			49.33	1120.44	33.24	339.66	0.01
Plumtree	6663	200-YR	379.69	379.68	0.01			77.92	1512.39	54.69	349.93	0.01
Plumtree	6600 Weir 3		Inl Struct									
Plumtree	6568	1-YR	370.88	370.86	0.02	0.04	0.00		92.00		33.17	0.04
Plumtree	6568	2-YR	371.92	371.89	0.02	0.04	0.00		149.00		39.37	0.05
Plumtree	6568	10-YR	376.00	375.99	0.01	0.01	0.00	45.42	244.42	17.17	204.88	0.02
Plumtree	6568	50-YR	378.71	378.70	0.02	0.01	0.00	213.62	490.43	93.95	283.92	0.03
Plumtree	6568	100-YR	379.15	379.13	0.03	0.01	0.00	320.69	671.55	141.75	294.18	0.06
Plumtree	6568	200-YR	379.67	379.63	0.04	0.02	0.00	464.66	889.01	208.33	307.50	0.09
Plumtree	6454	1-YR	370.83	370.80	0.03	0.10	0.01		92.00		27.79	0.08
Plumtree	6454	2-YR	371.87	371.83	0.04	0.08	0.01		149.00		34.01	0.08
Plumtree	6454	10-YR	376.00	375.99	0.01	0.01	0.00	28.86	231.31	46.83	187.55	0.02
Plumtree	6454	50-YR	378.71	378.69	0.02	0.01	0.00	106.25	461.21	230.54	240.46	0.04
Plumtree	6454	100-YR	379.14	379.11	0.03	0.02	0.01	157.89	634.66	341.44	256.09	0.07
Plumtree	6454	200-YR	379.65	379.60	0.05	0.03	0.01	229.11	843.60	489.30	273.77	0.11
Plumtree	6350	1-YR	370.72	370.63	0.09	0.18	0.01		92.00		19.09	0.23
Plumtree	6350	2-YR	371.78	371.69	0.10	0.11	0.01		149.00		23.09	0.22
Plumtree	6350	10-YR	375.99	375.95	0.04	0.01	0.00	16.80	283.04	7.16	89.15	0.06
Plumtree	6350	50-YR	378.69	378.63	0.06	0.02	0.00	152.16	591.76	54.07	227.81	0.12
Plumtree	6350	100-YR	379.11	379.01	0.10	0.03	0.01	235.50	809.97	88.53	244.70	0.21
Plumtree	6350	200-YR	379.61	379.45	0.16	0.05	0.01	355.82	1065.96	140.22	263.68	0.32
Plumtree	6296	1-YR	370.53	370.29	0.24			1.45	90.55		18.31	0.60
Plumtree	6296	2-YR	371.66	371.48	0.18			14.59	134.41		23.68	0.43
Plumtree	6296	10-YR	375.97	375.91	0.06			79.74	213.20	14.06	78.83	0.12
Plumtree	6296	50-YR	378.67	378.57	0.10			301.47	435.51	61.02	163.52	0.25
Plumtree	6296	100-YR	379.08	378.91	0.17			453.26	593.46	87.28	177.52	0.43
Plumtree	6296	200-YR	379.55	379.28	0.27			670.08	792.97	98.95	231.92	0.71
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	369.66	369.63	0.03	0.08	0.09		92.00		26.75	0.06
Plumtree	6197	2-YR	370.40	370.36	0.04	0.10	0.17	0.02	148.97	0.01	28.80	0.09
Plumtree	6197	10-YR	371.87	371.78	0.09	0.12	0.23	1.24	305.18	0.57	32.83	0.16
Plumtree	6197	50-YR	374.22	373.96	0.26	0.20	0.35	13.46	777.90	6.64	39.03	0.41
Plumtree	6197	100-YR	375.19	374.78	0.41	0.24	0.30	22.85	1099.70	11.45	48.07	0.63
Plumtree	6197	200-YR	376.22	375.62	0.61	0.29	0.31	38.01	1498.49	25.50	70.09	0.92
Plumtree	6122	1-YR	369.49	369.14	0.34	0.53	0.06		92.00		10.59	0.86
Plumtree	6122	2-YR	370.13	369.51	0.62	0.53	0.14		149.00		11.12	1.51
Plumtree	6122	10-YR	371.51	370.65	0.86	0.25	0.23	0.11	306.68	0.21	29.39	2.02
Plumtree	6122	50-YR	373.68	372.27	1.41	0.25	0.39	26.36	713.36	58.28	45.70	3.05
Plumtree	6122	100-YR	374.65	373.25	1.40	0.27	0.38	84.08	928.95	120.98	71.34	3.05
Plumtree	6122	200-YR	375.62	373.98	1.65	0.30	0.44	175.77	1191.70	194.53	79.49	3.62
Plumtree	6028	1-YR	368.89	368.76	0.13	0.46	0.01	1.55	90.45		42.00	0.35
Plumtree	6028	2-YR	369.45	369.32	0.14	0.40	0.01	17.22	131.36	0.41	61.68	0.36
Plumtree	6028	10-YR	371.02	370.94	0.08	0.14	0.01	93.44	201.31	12.26	100.91	0.22
Plumtree	6028	50-YR	373.01	372.89	0.11	0.14	0.01	317.07	406.01	74.91	165.27	0.34
Plumtree	6028	100-YR	373.65	373.50	0.15	0.18	0.02	489.92	523.79	120.29	202.06	0.45
Plumtree	6028	200-YR	374.36	374.18	0.18	0.22	0.03	716.78	661.04	184.18	216.72	0.56

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5926	1-YR	368.43	368.22	0.21	1.02	0.04	12.08	79.92		23.95	0.57
Plumtree	5926	2-YR	369.04	368.78	0.26	1.01	0.04	30.31	118.64	0.05	28.15	0.71
Plumtree	5926	10-YR	370.88	370.72	0.16	0.14	0.02	96.16	186.17	24.67	96.78	0.45
Plumtree	5926	50-YR	372.85	372.64	0.22	0.15	0.02	250.63	351.40	195.97	158.06	0.69
Plumtree	5926	100-YR	373.45	373.13	0.32	0.20	0.03	350.16	467.83	316.02	163.09	1.02
Plumtree	5926	200-YR	374.12	373.68	0.44	0.25	0.04	472.73	604.15	485.11	168.66	1.42
Plumtree	5824	1-YR	367.37	366.79	0.58	1.08	0.09		92.00		13.29	1.64
Plumtree	5824	2-YR	367.98	367.29	0.70	0.55	0.16		149.00		16.15	1.85
Plumtree	5824	10-YR	370.72	370.62	0.11	0.05	0.01	5.84	295.44	5.72	71.47	0.21
Plumtree	5824	50-YR	372.69	372.53	0.16	0.07	0.00	82.65	613.48	101.87	161.86	0.35
Plumtree	5824	100-YR	373.23	373.00	0.23	0.11	0.01	139.50	812.71	181.79	166.75	0.50
Plumtree	5824	200-YR	373.83	373.53	0.30	0.15	0.02	220.38	1043.29	298.33	172.27	0.68
Plumtree	5745	1-YR	365.97	365.69	0.28	0.15	0.05		92.00		14.78	0.74
Plumtree	5745	2-YR	367.15	366.97	0.18	0.07	0.02		149.00		20.07	0.41
Plumtree	5745	10-YR	370.66	370.59	0.07	0.01	0.00	2.81	290.85	13.34	77.55	0.12
Plumtree	5745	50-YR	372.62	372.44	0.18	0.03	0.01	59.39	682.01	56.60	105.18	0.32
Plumtree	5745	100-YR	373.11	372.81	0.30	0.04	0.02	100.82	948.96	84.22	115.32	0.55
Plumtree	5745	200-YR	373.66	373.17	0.48	0.06	0.03	160.84	1280.80	120.36	134.75	0.89
Plumtree	5711	1-YR	365.77	365.64	0.13				92.00		16.43	0.30
Plumtree	5711	2-YR	367.05	366.95	0.11				149.00		21.40	0.23
Plumtree	5711	10-YR	370.64	370.59	0.05			2.97	281.08	22.95	69.20	0.09
Plumtree	5711	50-YR	372.58	372.43	0.15			36.97	666.80	94.22	145.97	0.27
Plumtree	5711	100-YR	373.05	372.80	0.25			66.34	919.54	148.11	165.13	0.46
Plumtree	5711	200-YR	373.57	373.17	0.39			111.29	1226.38	224.33	179.58	0.74
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	365.29	365.25	0.04	0.05	0.01		92.00		24.69	0.10
Plumtree	5614	2-YR	366.11	366.05	0.06	0.06	0.01		149.00		27.74	0.13
Plumtree	5614	10-YR	367.74	367.64	0.09	0.06	0.01	3.01	304.00		51.21	0.18
Plumtree	5614	50-YR	372.02	371.96	0.06	0.01	0.01	134.31	590.54	73.15	200.44	0.11
Plumtree	5614	100-YR	372.55	372.46	0.09	0.02	0.02	200.41	799.35	134.24	212.23	0.18
Plumtree	5614	200-YR	373.14	373.01	0.13	0.02	0.03	279.10	1052.79	230.11	235.37	0.27
Plumtree	5560	1-YR	365.23	365.17	0.07	0.12	0.02		92.00		20.12	0.15
Plumtree	5560	2-YR	366.05	365.96	0.09	0.12	0.02		149.00		23.38	0.20
Plumtree	5560	10-YR	367.67	367.53	0.13	0.11	0.03	0.42	305.60	0.97	51.02	0.27
Plumtree	5560	50-YR	372.00	371.96	0.04	0.02	0.01	221.69	469.91	106.40	302.09	0.10
Plumtree	5560	100-YR	372.51	372.46	0.06	0.02	0.01	352.16	610.05	171.79	310.84	0.14
Plumtree	5560	200-YR	373.09	373.01	0.07	0.03	0.01	519.86	775.90	266.24	332.55	0.20
Plumtree	5510	1-YR	365.09	364.83	0.26	0.07	0.01		92.00		13.27	0.66
Plumtree	5510	2-YR	365.90	365.59	0.31	0.06	0.01		149.00		15.60	0.73
Plumtree	5510	10-YR	367.53	367.13	0.39	0.05	0.01		307.00		20.36	0.83
Plumtree	5510	50-YR	371.98	371.88	0.10	0.01	0.02	144.66	506.84	146.50	239.40	0.23
Plumtree	5510	100-YR	372.48	372.34	0.14	0.01	0.03	224.47	669.95	239.58	248.46	0.34
Plumtree	5510	200-YR	373.05	372.86	0.19	0.01	0.05	332.01	854.29	375.70	255.80	0.48
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	364.84	364.73	0.11	0.13	0.01		92.00		15.74	0.25
Plumtree	5474	2-YR	365.66	365.51	0.15	0.14	0.01		149.00		18.05	0.33
Plumtree	5474	10-YR	367.28	367.04	0.23	0.16	0.02		307.00		22.60	0.47
Plumtree	5474	50-YR	371.91	371.83	0.08	0.02	0.00	172.16	536.03	89.81	192.62	0.18
Plumtree	5474	100-YR	372.38	372.25	0.13	0.04	0.00	264.38	718.08	151.54	201.94	0.29
Plumtree	5474	200-YR	372.91	372.73	0.18	0.05	0.00	387.90	926.51	247.58	207.68	0.42
Plumtree	5419	1-YR	364.70	364.57	0.13	0.31	0.00		92.00		14.73	0.32
Plumtree	5419	2-YR	365.51	365.32	0.19	0.32	0.00		149.00		16.50	0.41
Plumtree	5419	10-YR	367.10	366.80	0.30	0.29	0.02		307.00		19.97	0.60
Plumtree	5419	50-YR	371.88	371.80	0.08	0.03	0.01	177.58	487.76	132.66	212.39	0.19
Plumtree	5419	100-YR	372.34	372.22	0.12	0.05	0.02	272.00	655.48	206.52	220.08	0.30
Plumtree	5419	200-YR	372.86	372.68	0.18	0.07	0.02	398.89	848.63	314.48	225.49	0.45
Plumtree	5323	1-YR	364.39	364.23	0.16	0.61	0.01		92.00		15.03	0.40
Plumtree	5323	2-YR	365.19	364.98	0.21	0.59	0.02		149.00		16.90	0.48
Plumtree	5323	10-YR	366.79	366.56	0.24	0.35	0.01	23.55	283.34	0.11	60.71	0.51
Plumtree	5323	50-YR	371.84	371.80	0.04	0.03	0.00	315.74	383.72	98.54	159.49	0.11
Plumtree	5323	100-YR	372.28	372.21	0.07	0.04	0.00	458.62	526.93	148.44	165.57	0.19
Plumtree	5323	200-YR	372.77	372.66	0.11	0.06	0.01	647.52	700.69	213.80	173.30	0.30
Plumtree	5209	1-YR	363.77	363.47	0.30	0.79	0.00		92.00		11.84	0.76
Plumtree	5209	2-YR	364.58	364.21	0.37	0.91	0.01		149.00		13.58	0.88
Plumtree	5209	10-YR	366.44	366.13	0.31	0.30	0.02	23.95	277.08	5.97	67.60	0.67
Plumtree	5209	50-YR	371.81	371.78	0.03	0.02	0.00	318.09	306.42	173.50	183.69	0.10

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5209	100-YR	372.23	372.18	0.05	0.04	0.01	461.14	419.54	253.32	194.28	0.17
Plumtree	5209	200-YR	372.70	372.62	0.08	0.06	0.01	638.24	561.01	362.75	206.28	0.27
Plumtree	5107	1-YR	362.97	362.66	0.31	0.85	0.04		92.00		10.84	0.77
Plumtree	5107	2-YR	363.66	363.17	0.50	0.77	0.00		149.00		13.08	1.20
Plumtree	5107	10-YR	366.12	365.88	0.24	0.13	0.03		304.69	2.31	34.35	0.49
Plumtree	5107	50-YR	371.78	371.71	0.08	0.02	0.00	82.52	561.68	153.79	258.21	0.15
Plumtree	5107	100-YR	372.18	372.06	0.13	0.03	0.01	144.86	769.95	219.19	273.14	0.26
Plumtree	5107	200-YR	372.62	372.42	0.20	0.05	0.01	233.62	1024.19	304.19	299.58	0.42
Plumtree	5040	1-YR	362.09	361.41	0.68				92.00		10.27	1.86
Plumtree	5040	2-YR	362.88	362.40	0.48				149.00		14.91	1.20
Plumtree	5040	10-YR	365.96	365.81	0.15				307.00		27.18	0.30
Plumtree	5040	50-YR	371.76	371.70	0.07			136.64	614.60	46.76	266.11	0.12
Plumtree	5040	100-YR	372.15	372.04	0.11			227.93	830.13	75.94	282.55	0.21
Plumtree	5040	200-YR	372.57	372.40	0.16			354.87	1088.59	118.54	304.35	0.32
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	361.24	360.92	0.32	0.38	0.10		92.00		16.03	0.86
Plumtree	4932	2-YR	362.01	361.71	0.30	0.31	0.08		149.00		18.59	0.72
Plumtree	4932	10-YR	363.96	363.72	0.24	0.17	0.04	0.00	307.00		38.26	0.50
Plumtree	4932	50-YR	371.56	371.50	0.07	0.01	0.02	128.59	631.63	37.78	200.32	0.11
Plumtree	4932	100-YR	372.02	371.91	0.11	0.02	0.03	199.95	865.80	68.25	219.23	0.19
Plumtree	4932	200-YR	372.47	372.30	0.17	0.03	0.04	301.96	1147.40	112.64	239.20	0.31
Plumtree	4845	1-YR	360.75	360.64	0.11	0.28	0.00		92.00		16.79	0.26
Plumtree	4845	2-YR	361.62	361.48	0.14	0.23	0.00		149.00		18.89	0.31
Plumtree	4845	10-YR	363.74	363.58	0.16	0.12	0.02	0.00	307.00		25.73	0.32
Plumtree	4845	50-YR	371.54	371.51	0.03	0.00	0.01	239.90	501.59	56.51	165.69	0.06
Plumtree	4845	100-YR	371.97	371.92	0.05	0.01	0.01	346.46	699.25	88.29	174.08	0.10
Plumtree	4845	200-YR	372.40	372.31	0.09	0.01	0.02	484.47	945.75	131.78	183.32	0.17
Plumtree	4745	1-YR	360.47	360.34	0.13	0.23	0.02		92.00		19.21	0.33
Plumtree	4745	2-YR	361.39	361.26	0.13	0.18	0.01		149.00		23.86	0.30
Plumtree	4745	10-YR	363.60	363.51	0.10	0.08	0.01	6.99	299.74	0.27	88.17	0.20
Plumtree	4745	50-YR	371.52	371.52	0.00	0.00	0.00	179.00	310.73	308.27	316.87	0.01
Plumtree	4745	100-YR	371.95	371.94	0.01	0.00	0.00	257.34	430.54	446.12	324.49	0.02
Plumtree	4745	200-YR	372.37	372.35	0.01	0.00	0.00	360.00	580.03	621.97	332.91	0.04
Plumtree	4636	1-YR	360.23	360.16	0.07	0.13	0.00		92.00		20.60	0.16
Plumtree	4636	2-YR	361.20	361.11	0.08	0.10	0.00		149.00		22.72	0.18
Plumtree	4636	10-YR	363.52	363.44	0.07	0.05	0.00	3.06	277.01	26.94	171.02	0.15
Plumtree	4636	50-YR	371.52	371.52	0.00	0.00	0.00	105.12	223.25	469.64	503.55	0.01
Plumtree	4636	100-YR	371.94	371.94	0.00	0.00	0.00	156.91	305.54	671.55	516.34	0.02
Plumtree	4636	200-YR	372.36	372.35	0.01	0.00	0.00	225.28	406.60	930.11	528.50	0.03
Plumtree	4550	1-YR	360.10	360.02	0.08				92.00		20.69	0.19
Plumtree	4550	2-YR	361.09	361.01	0.09				149.00		24.83	0.19
Plumtree	4550	10-YR	363.47	363.39	0.08			0.22	300.12	6.66	183.13	0.15
Plumtree	4550	50-YR	371.52	371.52	0.00			91.84	238.02	468.14	479.90	0.01
Plumtree	4550	100-YR	371.94	371.94	0.00			136.95	328.95	668.11	495.74	0.01
Plumtree	4550	200-YR	372.36	372.35	0.01			196.35	439.69	925.96	521.45	0.02
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	358.79	358.78	0.01	0.00	0.00		92.00		26.67	0.02
Plumtree	4344	2-YR	359.55	359.54	0.02	0.01	0.00		149.00		27.83	0.03
Plumtree	4344	10-YR	360.87	360.82	0.05	0.01	0.00		306.89	0.11	34.63	0.08
Plumtree	4344	50-YR	362.13	361.91	0.22	0.05	0.03	1.21	790.46	6.33	60.87	0.36
Plumtree	4344	100-YR	362.85	362.49	0.36	0.07	0.05	8.07	1106.50	19.44	95.79	0.58
Plumtree	4344	200-YR	363.69	363.17	0.52	0.09	0.09	29.61	1469.07	63.32	120.93	0.84
Plumtree	4289	1-YR	358.79	358.78	0.01	0.03	0.02		92.00		31.18	0.02
Plumtree	4289	2-YR	359.55	359.53	0.02	0.05	0.02		149.00		33.96	0.03
Plumtree	4289	10-YR	360.85	360.81	0.04	0.08	0.04		306.92	0.08	45.41	0.07
Plumtree	4289	50-YR	362.05	361.88	0.17	0.18	0.03	3.73	783.45	10.82	119.52	0.29
Plumtree	4289	100-YR	362.73	362.47	0.25	0.20	0.02	25.12	1074.95	33.93	145.10	0.43
Plumtree	4289	200-YR	363.51	363.17	0.33	0.20	0.01	74.91	1397.06	90.03	166.23	0.58
Plumtree	4185	1-YR	358.74	358.54	0.20	0.56	0.01		133.00		19.89	0.48
Plumtree	4185	2-YR	359.48	359.23	0.25	0.56	0.01		206.00		22.17	0.55
Plumtree	4185	10-YR	360.73	360.33	0.40	0.53	0.05	3.48	400.52		79.32	0.85
Plumtree	4185	50-YR	361.84	361.34	0.50	0.47	0.09	124.37	648.08	1.55	140.47	1.13
Plumtree	4185	100-YR	362.51	362.10	0.41	0.36	0.07	283.04	754.92	28.03	206.82	1.01
Plumtree	4185	200-YR	363.30	362.99	0.31	0.30	0.04	502.18	852.61	110.21	243.01	0.86
Plumtree	4033	1-YR	358.17	358.00	0.17	0.49	0.02		133.00		19.08	0.38

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	4033	2-YR	358.91	358.69	0.22	0.48	0.02		206.00		21.07	0.48
Plumtree	4033	10-YR	360.15	359.92	0.23	0.40	0.03	0.47	343.05	60.48	139.20	0.54
Plumtree	4033	50-YR	361.28	361.08	0.20	0.21	0.00	20.41	481.62	271.97	181.48	0.55
Plumtree	4033	100-YR	362.08	361.91	0.17	0.15	0.01	60.70	556.48	448.82	227.05	0.50
Plumtree	4033	200-YR	362.95	362.78	0.18	0.14	0.02	136.60	692.42	635.99	294.39	0.56
Plumtree	3930	1-YR	357.66	357.32	0.34	0.63	0.04		133.00		15.94	0.84
Plumtree	3930	2-YR	358.42	358.01	0.41	0.57	0.05	0.31	205.69		20.98	0.93
Plumtree	3930	10-YR	359.71	359.15	0.56	0.47	0.08	13.33	378.86	11.81	104.46	1.20
Plumtree	3930	50-YR	361.07	360.88	0.19	0.19	0.01	60.89	430.93	282.18	204.89	0.58
Plumtree	3930	100-YR	361.92	361.78	0.14	0.14	0.00	111.08	470.86	484.06	224.93	0.47
Plumtree	3930	200-YR	362.80	362.68	0.13	0.13	0.00	185.51	544.42	735.07	243.26	0.45
Plumtree	3816	1-YR	356.99	356.78	0.21	0.43	0.01		132.99	0.01	17.82	0.49
Plumtree	3816	2-YR	357.81	357.55	0.26	0.42	0.00		201.12	4.88	34.16	0.56
Plumtree	3816	10-YR	359.16	358.87	0.29	0.35	0.00	9.82	339.27	54.91	104.63	0.65
Plumtree	3816	50-YR	360.87	360.71	0.16	0.18	0.00	69.11	437.09	267.80	165.33	0.45
Plumtree	3816	100-YR	361.77	361.63	0.14	0.16	0.00	120.70	506.19	439.11	192.28	0.43
Plumtree	3816	200-YR	362.68	362.54	0.14	0.15	0.01	205.21	592.00	667.79	215.50	0.44
Plumtree	3688	1-YR	356.55	356.38	0.17	0.48	0.00		133.00		15.26	0.39
Plumtree	3688	2-YR	357.38	357.14	0.24	0.45	0.01	1.42	204.26	0.32	30.73	0.50
Plumtree	3688	10-YR	358.81	358.50	0.31	0.36	0.01	23.52	347.79	32.69	82.75	0.65
Plumtree	3688	50-YR	360.68	360.48	0.20	0.20	0.00	105.41	469.05	199.54	139.77	0.52
Plumtree	3688	100-YR	361.61	361.42	0.19	0.18	0.00	174.08	554.16	337.77	162.83	0.53
Plumtree	3688	200-YR	362.52	362.33	0.19	0.18	0.01	279.46	659.53	526.02	183.74	0.58
Plumtree	3550	1-YR	356.07	355.86	0.21	0.44	0.00		133.00		18.23	0.49
Plumtree	3550	2-YR	356.93	356.71	0.22	0.41	0.00	0.56	205.44		27.56	0.49
Plumtree	3550	10-YR	358.43	358.16	0.27	0.35	0.01	18.56	377.95	7.49	61.27	0.55
Plumtree	3550	50-YR	360.48	360.27	0.21	0.21	0.02	110.70	577.67	85.63	123.30	0.46
Plumtree	3550	100-YR	361.43	361.21	0.21	0.21	0.02	204.86	705.66	155.48	143.01	0.49
Plumtree	3550	200-YR	362.34	362.09	0.24	0.23	0.03	325.87	879.60	259.54	158.30	0.58
Plumtree	3428	1-YR	355.62	355.43	0.19	0.40	0.00	0.00	133.00		14.87	0.42
Plumtree	3428	2-YR	356.52	356.27	0.25	0.42	0.00	2.17	203.83		22.99	0.53
Plumtree	3428	10-YR	358.07	357.68	0.38	0.53	0.01	28.12	375.31	0.57	38.88	0.77
Plumtree	3428	50-YR	360.25	359.88	0.37	0.35	0.01	137.94	597.06	39.00	74.82	0.77
Plumtree	3428	100-YR	361.20	360.76	0.44	0.38	0.02	222.35	757.98	85.66	90.83	0.93
Plumtree	3428	200-YR	362.07	361.50	0.57	0.48	0.03	330.77	974.66	159.57	104.43	1.24
Plumtree	3296	1-YR	355.22	355.04	0.18	0.35	0.01		133.00		15.18	0.40
Plumtree	3296	2-YR	356.10	355.86	0.24	0.36	0.03		206.00		16.95	0.51
Plumtree	3296	10-YR	357.53	357.09	0.44	0.40	0.08		404.00		22.48	0.89
Plumtree	3296	50-YR	359.89	359.43	0.47	0.16	0.11	3.23	765.19	5.59	49.65	0.85
Plumtree	3296	100-YR	360.80	360.20	0.60	0.16	0.14	10.80	1022.03	33.17	89.41	1.08
Plumtree	3296	200-YR	361.57	360.70	0.87	0.21	0.20	21.79	1354.60	88.61	108.73	1.55
Plumtree	3179	1-YR	354.86	354.73	0.13	0.33	0.00		133.00		22.53	0.33
Plumtree	3179	2-YR	355.71	355.56	0.15	0.32	0.00		206.00		30.55	0.35
Plumtree	3179	10-YR	357.05	356.88	0.16	0.16	0.02	0.73	403.27		52.53	0.36
Plumtree	3179	50-YR	359.63	359.52	0.11	0.04	0.02	21.45	707.01	45.54	130.65	0.21
Plumtree	3179	100-YR	360.50	360.36	0.13	0.05	0.03	39.33	924.96	101.71	152.55	0.25
Plumtree	3179	200-YR	361.15	360.96	0.19	0.06	0.04	64.11	1229.43	171.46	160.68	0.36
Plumtree	3077	1-YR	354.53	354.36	0.17	0.30	0.00		133.00		18.29	0.40
Plumtree	3077	2-YR	355.39	355.22	0.17	0.34	0.00	2.69	203.31		75.50	0.41
Plumtree	3077	10-YR	356.86	356.77	0.09	0.16	0.01	87.18	291.56	25.26	153.84	0.23
Plumtree	3077	50-YR	359.57	359.53	0.03	0.04	0.01	267.49	367.68	138.83	194.04	0.10
Plumtree	3077	100-YR	360.42	360.38	0.04	0.05	0.02	376.88	478.79	210.32	212.44	0.12
Plumtree	3077	200-YR	361.05	360.99	0.06	0.07	0.02	520.62	639.85	304.53	233.82	0.18
Plumtree	2978	1-YR	354.22	354.07	0.16	0.18	0.00		133.00		16.84	0.36
Plumtree	2978	2-YR	355.04	354.84	0.20	0.22	0.00		206.00		24.01	0.45
Plumtree	2978	10-YR	356.69	356.46	0.23	0.16	0.00	0.11	398.16	5.72	46.23	0.47
Plumtree	2978	50-YR	359.51	359.36	0.16	0.05	0.00	43.61	642.62	87.78	103.98	0.30
Plumtree	2978	100-YR	360.36	360.16	0.20	0.05	0.01	91.87	833.26	140.87	136.38	0.38
Plumtree	2978	200-YR	360.96	360.67	0.29	0.07	0.03	158.86	1098.85	207.30	156.59	0.57
Plumtree	2917	1-YR	354.04	353.87	0.17				133.00		16.93	0.40
Plumtree	2917	2-YR	354.82	354.59	0.23				206.00		20.31	0.52
Plumtree	2917	10-YR	356.53	356.28	0.25			1.43	402.04	0.53	41.16	0.51
Plumtree	2917	50-YR	359.46	359.30	0.16			58.12	670.86	45.02	201.50	0.30
Plumtree	2917	100-YR	360.29	360.14	0.15			189.76	795.22	81.01	249.95	0.31
Plumtree	2917	200-YR	360.86	360.67	0.19			341.03	1005.10	118.86	272.93	0.42
Plumtree	2900 Frederick Rd		Culvert									

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

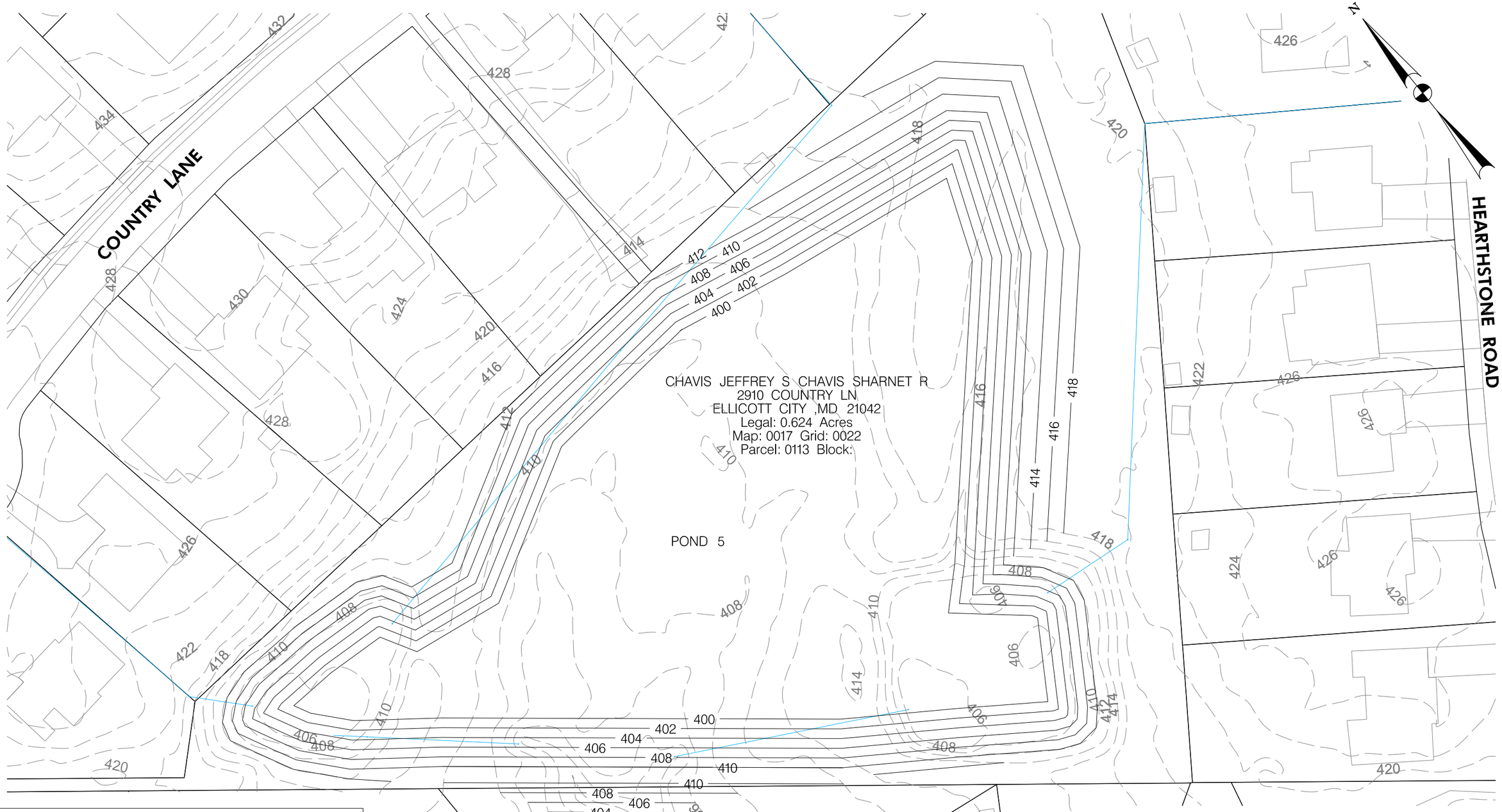
Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	2827	1-YR	353.91	353.64	0.27	0.23	0.07		133.00		22.71	0.72
Plumtree	2827	2-YR	354.58	354.32	0.25	0.25	0.03	0.57	205.43	0.00	37.75	0.64
Plumtree	2827	10-YR	355.63	355.28	0.35	0.26	0.03	10.20	390.80	3.00	87.58	0.78
Plumtree	2827	50-YR	356.61	356.17	0.44	0.27	0.06	118.03	639.59	16.39	128.72	1.04
Plumtree	2827	100-YR	357.19	356.69	0.50	0.27	0.09	222.09	809.28	34.63	149.09	1.20
Plumtree	2827	200-YR	357.86	357.34	0.52	0.25	0.12	387.84	1005.00	72.16	170.07	1.30
Plumtree	2759	1-YR	353.61	353.48	0.13	0.42	0.00	0.21	132.79		19.11	0.27
Plumtree	2759	2-YR	354.30	354.10	0.20	0.44	0.02	4.10	201.56	0.34	43.98	0.42
Plumtree	2759	10-YR	355.34	355.05	0.29	0.50	0.04	53.18	330.25	20.58	141.18	0.67
Plumtree	2759	50-YR	356.27	355.96	0.31	0.60	0.03	187.94	469.97	116.09	187.32	0.90
Plumtree	2759	100-YR	356.82	356.51	0.31	0.61	0.03	304.84	546.96	214.21	213.03	0.98
Plumtree	2759	200-YR	357.49	357.21	0.27	0.61	0.00	483.89	618.95	362.15	237.78	0.97
Plumtree	2589	1-YR	353.19	353.04	0.15	0.71	0.05		93.04	39.96	58.06	0.47
Plumtree	2589	2-YR	353.83	353.71	0.12	0.59	0.07		116.46	89.54	70.15	0.44
Plumtree	2589	10-YR	354.79	354.65	0.14	0.48	0.05	5.43	178.60	219.97	126.00	0.56
Plumtree	2589	50-YR	355.64	355.44	0.20	0.49	0.02	45.34	271.89	456.77	155.27	0.86
Plumtree	2589	100-YR	356.19	355.96	0.22	0.46	0.01	92.68	328.91	644.41	170.39	1.00
Plumtree	2589	200-YR	356.87	356.60	0.27	0.46	0.00	193.84	427.18	843.97	233.86	1.29
Plumtree	2485	1-YR	352.42	351.76	0.67	1.16	0.14	0.58	132.42		14.75	1.68
Plumtree	2485	2-YR	353.17	352.36	0.81	1.05	0.17	7.95	198.04	0.00	24.91	1.97
Plumtree	2485	10-YR	354.26	353.66	0.60	0.79	0.08	72.72	299.55	31.73	111.09	1.61
Plumtree	2485	50-YR	355.13	354.70	0.43	0.67	0.02	221.06	384.31	168.63	154.78	1.48
Plumtree	2485	100-YR	355.71	355.36	0.36	0.61	0.00	335.74	432.58	297.68	176.28	1.38
Plumtree	2485	200-YR	356.41	356.10	0.31	0.56	0.01	493.31	491.45	480.24	197.84	1.32
Plumtree	2331	1-YR	351.12	350.91	0.21	0.43	0.03		133.00		17.56	0.50
Plumtree	2331	2-YR	351.95	351.70	0.26	0.48	0.02		205.55	0.45	22.54	0.56
Plumtree	2331	10-YR	353.27	352.93	0.34	0.54	0.02	25.82	368.24	9.94	95.42	0.73
Plumtree	2331	50-YR	354.44	354.07	0.37	0.56	0.02	162.32	554.99	56.69	127.15	0.89
Plumtree	2331	100-YR	355.10	354.72	0.39	0.56	0.02	288.63	676.16	101.21	138.45	0.99
Plumtree	2331	200-YR	355.84	355.41	0.43	0.59	0.02	462.13	832.05	170.82	151.39	1.14
Plumtree	2153	1-YR	350.67	350.55	0.12	0.29	0.00	1.13	131.87		19.01	0.25
Plumtree	2153	2-YR	351.45	351.27	0.18	0.38	0.00	6.21	199.79		22.62	0.38
Plumtree	2153	10-YR	352.71	352.44	0.26	0.48	0.01	70.24	333.76		92.83	0.60
Plumtree	2153	50-YR	353.87	353.56	0.31	0.52	0.00	272.24	490.33	11.43	124.97	0.83
Plumtree	2153	100-YR	354.52	354.19	0.33	0.53	0.00	446.10	587.06	32.83	137.21	0.95
Plumtree	2153	200-YR	355.23	354.87	0.36	0.53	0.00	690.49	703.41	71.10	144.41	1.10
Plumtree	1994	1-YR	350.37	350.23	0.14	0.24	0.00	0.00	133.00		15.58	0.31
Plumtree	1994	2-YR	351.07	350.84	0.23	0.30	0.00	2.67	203.33		31.62	0.48
Plumtree	1994	10-YR	352.23	351.90	0.33	0.33	0.01	55.39	342.78	5.83	102.98	0.73
Plumtree	1994	50-YR	353.34	352.99	0.36	0.34	0.02	215.79	500.71	57.50	137.48	0.94
Plumtree	1994	100-YR	353.99	353.63	0.36	0.33	0.02	350.05	597.64	118.30	158.16	1.04
Plumtree	1994	200-YR	354.70	354.33	0.36	0.34	0.01	539.60	705.93	219.46	172.96	1.13
Plumtree	1888	1-YR	350.13	349.95	0.17	0.05	0.00	2.75	128.88	1.37	34.88	0.38
Plumtree	1888	2-YR	350.78	350.55	0.23	0.05	0.01	12.47	184.88	8.65	56.82	0.51
Plumtree	1888	10-YR	351.88	351.60	0.28	0.06	0.01	71.00	294.29	38.71	112.39	0.71
Plumtree	1888	50-YR	352.99	352.70	0.29	0.05	0.01	202.72	417.80	153.48	138.36	0.86
Plumtree	1888	100-YR	353.64	353.35	0.30	0.06	0.01	312.31	499.74	253.95	151.31	0.95
Plumtree	1888	200-YR	354.35	354.02	0.32	0.06	0.02	464.85	604.87	395.29	164.23	1.10
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	349.96	349.89	0.07	0.28	0.01	26.31	106.69		65.29	0.20
Plumtree	1830	2-YR	350.57	350.48	0.09	0.34	0.03	56.95	149.05		82.41	0.24
Plumtree	1830	10-YR	351.62	351.53	0.10	0.37	0.06	164.68	231.17	8.15	135.50	0.30
Plumtree	1830	50-YR	352.76	352.64	0.12	0.39	0.06	343.02	355.67	75.31	153.30	0.40
Plumtree	1830	100-YR	353.41	353.26	0.14	0.40	0.06	477.83	444.46	143.70	155.56	0.48
Plumtree	1830	200-YR	354.08	353.90	0.18	0.46	0.06	660.52	563.86	240.63	157.87	0.60
Plumtree	1641	1-YR	349.67	349.55	0.12	0.14	0.02	12.88	120.12		27.74	0.28
Plumtree	1641	2-YR	350.19	349.99	0.20	0.20	0.04	24.81	180.55	0.64	43.64	0.46
Plumtree	1641	10-YR	351.20	350.90	0.29	0.25	0.07	69.01	297.22	37.78	102.67	0.74
Plumtree	1641	50-YR	352.30	351.97	0.34	0.31	0.07	163.01	439.10	171.88	137.11	0.99
Plumtree	1641	100-YR	352.94	352.61	0.34	0.33	0.06	238.51	518.79	308.70	148.33	1.07
Plumtree	1641	200-YR	353.55	353.16	0.39	0.41	0.06	342.45	636.10	486.44	157.50	1.32
Plumtree	1463	1-YR	349.50	349.47	0.04	0.29	0.01	2.25	128.80	1.95	95.93	0.08
Plumtree	1463	2-YR	349.94	349.89	0.05	0.35	0.01	13.04	186.20	6.75	117.57	0.12
Plumtree	1463	10-YR	350.88	350.80	0.08	0.38	0.01	67.21	304.37	32.42	143.18	0.19
Plumtree	1463	50-YR	351.92	351.80	0.12	0.36	0.00	188.88	491.75	93.37	172.17	0.31
Plumtree	1463	100-YR	352.55	352.41	0.14	0.34	0.00	298.61	618.46	148.93	189.03	0.38
Plumtree	1463	200-YR	353.08	352.90	0.19	0.33	0.01	445.48	790.40	229.12	198.00	0.52

HEC-RAS Plan: F River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	1291	1-YR	349.20	349.03	0.17	0.64	0.01	156.10	246.90		219.14	0.55
Plumtree	1291	2-YR	349.58	349.39	0.19	0.59	0.01	276.49	312.45	0.07	239.82	0.68
Plumtree	1291	10-YR	350.49	350.30	0.19	0.50	0.02	716.37	450.64	3.99	304.82	0.82
Plumtree	1291	50-YR	351.56	351.39	0.17	0.40	0.01	1427.22	578.21	21.57	367.80	0.80
Plumtree	1291	100-YR	352.21	352.05	0.16	0.36	0.01	1931.46	653.17	39.37	409.24	0.78
Plumtree	1291	200-YR	352.74	352.60	0.15	0.32	0.00	2419.28	697.93	56.79	415.54	0.73
Plumtree	1124	1-YR	348.56	348.34	0.22	0.46	0.03	140.11	262.89		242.82	0.68
Plumtree	1124	2-YR	348.98	348.83	0.15	0.37	0.01	301.95	287.05		261.72	0.58
Plumtree	1124	10-YR	349.97	349.85	0.12	0.31	0.00	789.89	380.67	0.44	277.97	0.56
Plumtree	1124	50-YR	351.15	351.03	0.12	0.26	0.00	1506.61	511.52	8.87	303.41	0.57
Plumtree	1124	100-YR	351.84	351.71	0.13	0.25	0.00	2002.09	598.29	23.62	318.37	0.60
Plumtree	1124	200-YR	352.41	352.28	0.14	0.24	0.01	2454.32	675.08	44.61	328.36	0.62
Plumtree	994	1-YR	348.07	347.94	0.13	0.26	0.00	140.73	262.27		181.36	0.42
Plumtree	994	2-YR	348.60	348.49	0.11	0.19	0.00	269.75	319.25		206.84	0.39
Plumtree	994	10-YR	349.66	349.53	0.13	0.18	0.00	654.21	515.81	0.97	229.15	0.47
Plumtree	994	50-YR	350.88	350.73	0.16	0.16	0.00	1238.85	776.11	12.03	262.24	0.56
Plumtree	994	100-YR	351.59	351.42	0.17	0.16	0.00	1648.77	944.87	30.36	278.91	0.61
Plumtree	994	200-YR	352.17	351.99	0.19	0.15	0.01	2026.17	1094.85	52.98	292.48	0.66
Plumtree	911	1-YR	347.81	347.63	0.17	0.55	0.01	149.12	253.88		192.83	0.55
Plumtree	911	2-YR	348.41	348.29	0.12	0.47	0.03	309.96	279.04		214.17	0.44
Plumtree	911	10-YR	349.48	349.36	0.13	0.36	0.01	758.57	410.19	2.24	234.76	0.52
Plumtree	911	50-YR	350.72	350.57	0.15	0.31	0.01	1429.20	581.27	16.53	265.16	0.62
Plumtree	911	100-YR	351.43	351.27	0.16	0.29	0.01	1903.01	687.75	33.25	280.24	0.67
Plumtree	911	200-YR	352.01	351.84	0.17	0.28	0.01	2339.25	782.12	52.63	292.60	0.72
Plumtree	762	1-YR	347.25	346.98	0.27	0.18	0.04	95.86	307.14		61.15	0.72
Plumtree	762	2-YR	347.92	347.54	0.37	0.21	0.07	140.95	445.08	2.97	162.52	0.98
Plumtree	762	10-YR	349.11	348.86	0.25	0.17	0.03	487.93	602.46	80.62	235.25	0.82
Plumtree	762	50-YR	350.40	350.18	0.22	0.15	0.02	978.58	799.72	248.70	270.34	0.80
Plumtree	762	100-YR	351.13	350.91	0.23	0.14	0.02	1318.35	930.47	375.18	290.03	0.83
Plumtree	762	200-YR	351.73	351.50	0.23	0.14	0.02	1633.21	1045.84	494.95	305.21	0.86
Plumtree	658	1-YR	347.02	346.90	0.12	0.14	0.00	7.69	388.24	7.07	172.74	0.23
Plumtree	658	2-YR	347.64	347.50	0.14	0.13	0.02	38.75	509.32	40.94	227.82	0.29
Plumtree	658	10-YR	348.91	348.76	0.15	0.12	0.02	208.93	752.80	209.26	296.21	0.36
Plumtree	658	50-YR	350.23	350.08	0.15	0.12	0.02	511.85	1009.36	505.78	321.01	0.41
Plumtree	658	100-YR	350.97	350.82	0.15	0.12	0.02	729.26	1174.65	720.09	335.47	0.45
Plumtree	658	200-YR	351.56	351.40	0.16	0.12	0.02	937.05	1325.35	911.59	349.84	0.49
Plumtree	526	1-YR	346.87	346.76	0.11	0.26	0.01	19.60	323.46	59.95	263.81	0.27
Plumtree	526	2-YR	347.49	347.40	0.09	0.21	0.01	58.74	369.46	160.80	279.29	0.25
Plumtree	526	10-YR	348.76	348.68	0.08	0.17	0.01	185.81	514.05	471.14	306.43	0.27
Plumtree	526	50-YR	350.09	350.01	0.09	0.16	0.01	386.72	705.38	934.89	333.26	0.32
Plumtree	526	100-YR	350.83	350.74	0.09	0.16	0.01	541.72	829.15	1253.14	345.73	0.35
Plumtree	526	200-YR	351.43	351.32	0.10	0.16	0.01	687.46	940.10	1546.44	355.82	0.38
Plumtree	380	1-YR	346.60	346.36	0.24	1.37	0.09	25.00	376.82	1.18	131.73	0.52
Plumtree	380	2-YR	347.27	347.07	0.20	1.08	0.11	96.19	458.22	34.60	192.48	0.49
Plumtree	380	10-YR	348.58	348.40	0.18	0.80	0.10	324.27	659.16	187.57	216.16	0.52
Plumtree	380	50-YR	349.92	349.72	0.20	0.76	0.12	658.24	922.01	446.75	232.10	0.60
Plumtree	380	100-YR	350.66	350.45	0.21	0.76	0.13	888.55	1094.17	641.28	238.66	0.67
Plumtree	380	200-YR	351.25	351.02	0.23	0.77	0.13	1099.67	1248.56	825.77	243.01	0.73
Plumtree	146	1-YR	345.14	343.96	1.18	0.58	0.28		403.00		19.90	2.66
Plumtree	146	2-YR	346.09	344.83	1.26	0.53	0.29	5.80	581.90	1.31	45.12	2.62
Plumtree	146	10-YR	347.69	346.51	1.17	0.45	0.20	174.17	952.38	44.45	105.18	2.54
Plumtree	146	50-YR	349.04	347.68	1.36	0.45	0.20	511.19	1381.05	134.76	133.58	3.20
Plumtree	146	100-YR	349.77	348.29	1.48	0.46	0.21	779.76	1644.79	199.45	146.77	3.62
Plumtree	146	200-YR	350.34	348.77	1.57	0.46	0.21	1048.38	1866.25	259.37	156.00	3.94
Plumtree	63	1-YR	343.76	343.53	0.23				403.00		43.43	0.51
Plumtree	63	2-YR	344.50	344.20	0.30			0.06	588.91	0.03	50.40	0.61
Plumtree	63	10-YR	346.12	345.62	0.50			14.98	1149.01	7.01	76.57	0.91
Plumtree	63	50-YR	347.79	347.10	0.69			93.27	1878.09	55.65	118.52	1.22
Plumtree	63	100-YR	348.69	347.89	0.79			179.20	2329.96	114.85	133.29	1.39
Plumtree	63	200-YR	349.40	348.53	0.87			272.98	2718.98	182.04	142.15	1.53

Appendix H-8

Plumtree Branch: Option G Hydraulic Modeling


COUNTRY LANE
HEARTHSTONE ROAD
CHAVIS JEFFREY S CHAVIS SHARNET R
2910 COUNTRY LN
ELLICOTT CITY ,MD 21042
Legal: 0.624 Acres
Map: 0017 Grid: 0022
Parcel: 0113 Block:
POND 5
N
LEGEND
STORM DRAIN
GIS STREAM CENTERLINE
EXISTING FEMA 100–YR FLOODPLAIN
PROPOSED CONTOUR
EXISTING CONTOUR
60' 0 60' 120'
SCALE: 1" = 60'
Valley Mede Flood Study
Option G: Pond 5

Project:	*Valley Mede Proposed Storage Areas*	*Designed By:*	*CEL*
County:	*Howard*	*Checked By:*	*ALH*
Watershed:	*Plumtree Branch*	*Approved By:*	
SHA Project Number:	*HO122A11*	*Date:*	*9/25/2017*
MDE Project Number:	*N/A*	***Study Area:***	***Pond 5***
Design Phase:		***BMP ID:***	***N/A***

Stage -Storage Data Table

POND 5
Country Ln

Storage Volume Using Average-End-Area Method						
(1) Contour Elevation (ft.)	(2) Elevation Area ($ft.^2$)	(3) Average Area ($ft.^2$)	(4) Incremental Height (ft.)	(5) Elevation Storage ($ft.^3$)	(6) Cumulative Storage ($ft.^3$)	(7) Cumulative Storage (acre-ft)
400.00	77,733	0	0.00	0	0	0.00
402.00	86,247	81,990	2.00	163,981	163,981	3.76
404.00	95,039	90,643	2.00	181,286	345,266	7.93
406.00	104,041	99,540	2.00	199,080	544,346	12.50
408.00	113,255	108,648	2.00	217,297	761,643	17.48
410.00	122,692	117,974	2.00	235,947	997,590	22.90

COUNTRY LANE POND		
ELEVATION DISCHARGE BASED ON 36" RCP THROUGH DAM USING HY-8 7.50		
ELEVATION (ft)	**DISCHARGE (cfs)**	**STORAGE (ac-ft)**
400.00	0	0.000 ac-ft
401.30	9	2.447 ac-ft
401.96	18	3.689 ac-ft
402.52	27	4.847 ac-ft
403.05	36	5.949 ac-ft
403.63	45	7.156 ac-ft
403.99	50	7.905 ac-ft
405.13	63	10.508 ac-ft
406.10	72	12.746 ac-ft
407.20	81	15.490 ac-ft
408.44	90	18.677 ac-ft

HY-8 Culvert Analysis Report

Project Notes

Project Title: Valley Mede Flood Study

Designer: CEL

Project Date: Monday, September 25, 2017

Notes: HY-8 for Country Lane pond (Pond #5) concept barrel.

Project Units: U.S. Customary Units

Outlet Control Option: Profiles

Exit Loss Option: Standard Method

Crossing Notes: Pond 5 - Country Ln

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

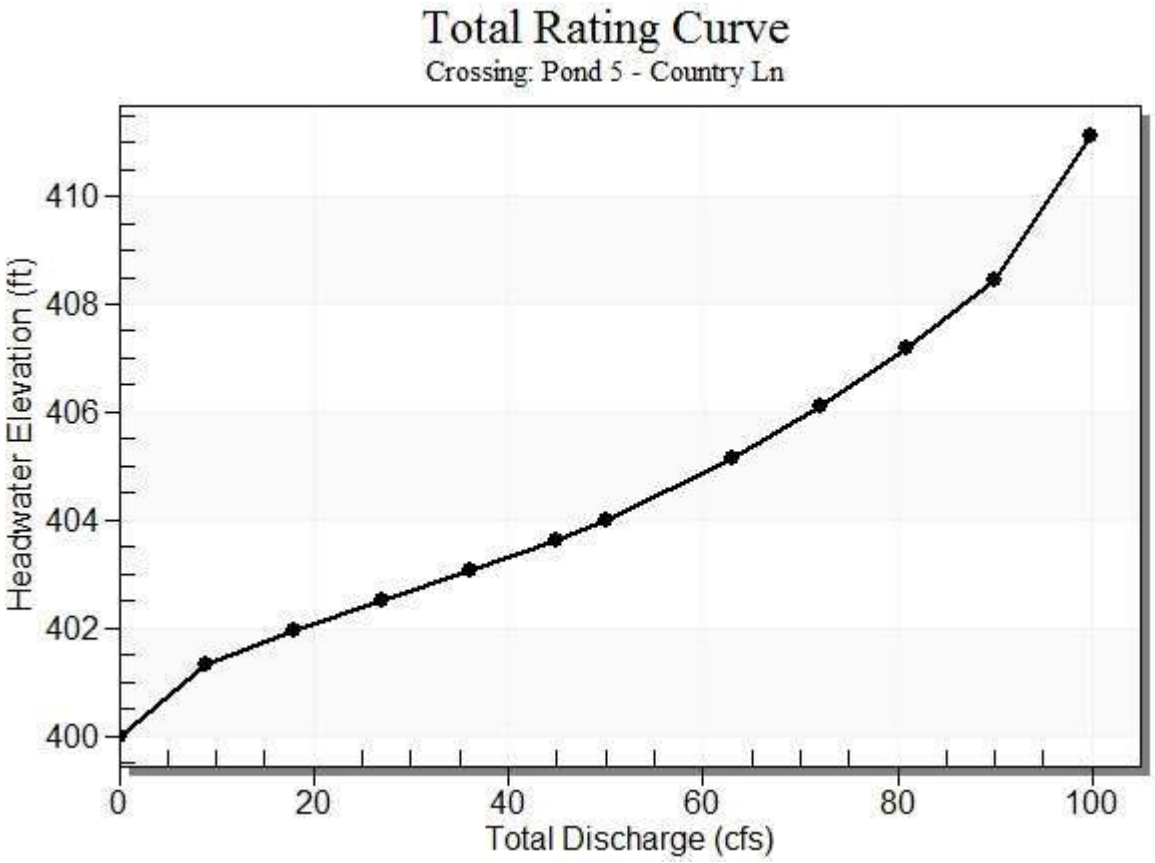
Design Flow: 50 cfs

Maximum Flow: 90 cfs

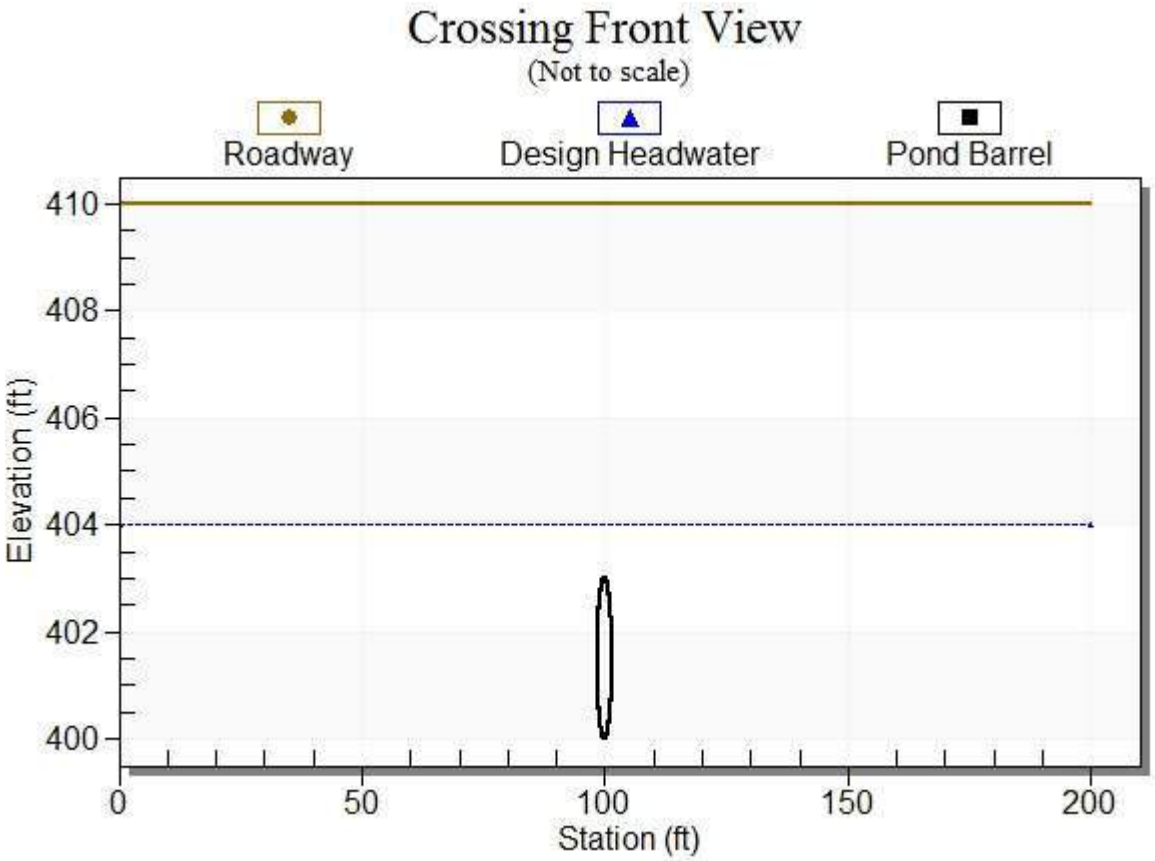
Table 1 - Summary of Culvert Flows at Crossing: Pond 5 - Country Ln

Headwater Elevation (ft)	Total Discharge (cfs)	Pond Barrel Discharge (cfs)	Roadway Discharge (cfs)	Iterations
400.00	0.00	0.00	0.00	1
401.30	9.00	9.00	0.00	1
401.96	18.00	18.00	0.00	1
402.52	27.00	27.00	0.00	1
403.05	36.00	36.00	0.00	1
403.63	45.00	45.00	0.00	1
403.99	50.00	50.00	0.00	1
405.13	63.00	63.00	0.00	1
406.10	72.00	72.00	0.00	1
407.20	81.00	81.00	0.00	1
408.44	90.00	90.00	0.00	1
410.00	99.89	99.89	0.00	Overtopping

Rating Curve Plot for Crossing: Pond 5 - Country Ln



Crossing Front View (Roadway Profile): Pond 5 - Country Ln



Culvert Notes: Pond Barrel

Table 2 - Culvert Summary Table: Pond Barrel

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	400.00	0.000	0.000	0-NF	0.000	0.000	0.500	0.000	0.000	0.000
9.00	9.00	401.30	1.300	0.494	1-S2n	0.795	0.944	0.795	0.306	5.790	1.849
18.00	18.00	401.96	1.962	1.061	1-S2n	1.145	1.358	1.185	0.461	6.699	2.386
27.00	27.00	402.52	2.518	1.634	1-S2n	1.438	1.677	1.490	0.584	7.455	2.758
36.00	36.00	403.05	3.046	2.261	5-S2n	1.714	1.947	1.773	0.691	8.023	3.051
45.00	45.00	403.63	3.626	2.955	5-S2n	1.997	2.183	2.057	0.787	8.465	3.295
50.00	50.00	403.99	3.992	0.836	5-S2n	2.169	2.298	2.229	0.836	8.643	3.416
63.00	63.00	405.13	5.133	4.767	7-M2c	3.000	2.552	2.552	0.955	9.832	3.692
72.00	72.00	406.10	6.097	5.604	7-M2c	3.000	2.683	2.683	1.031	10.794	3.860
81.00	81.00	407.20	7.202	6.526	7-M2c	3.000	2.777	2.777	1.103	11.857	4.012
90.00	90.00	408.44	8.440	7.533	7-M2c	3.000	2.842	2.842	1.171	12.994	4.153

****

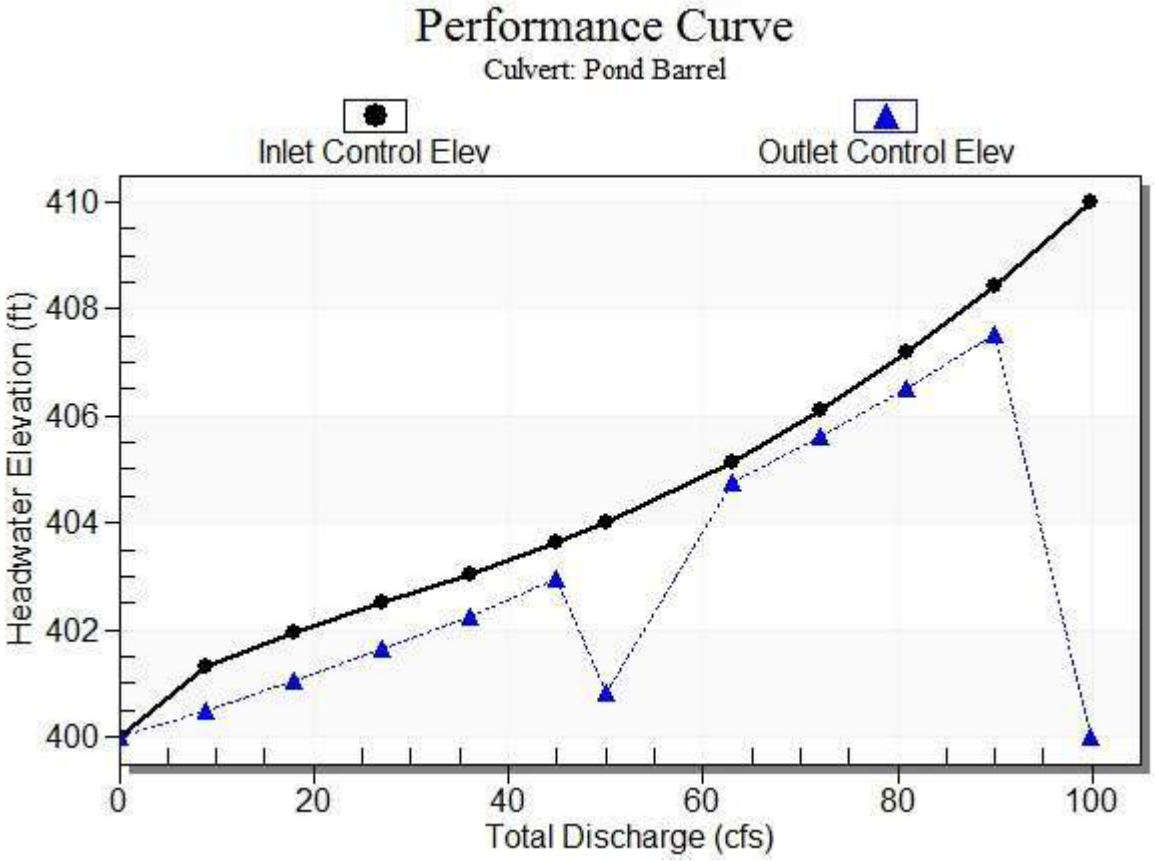
Straight Culvert

Inlet Elevation (invert): 400.00 ft, Outlet Elevation (invert): 399.50 ft

Culvert Length: 85.00 ft, Culvert Slope: 0.0059

****

Culvert Performance Curve Plot: Pond Barrel



Water Surface Profile Plot for Culvert: Pond Barrel

Site Data - Pond Barrel

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 400.00 ft

Outlet Station: 85.00 ft

Outlet Elevation: 399.50 ft

Number of Barrels: 1

Culvert Data Summary - Pond Barrel

Barrel Shape: Circular

Barrel Diameter: 3.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 3 - Downstream Channel Rating Curve (Crossing: Pond 5 - Country Ln)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	400.00	0.00	0.00	0.00	0.00
9.00	400.31	0.31	1.85	0.19	0.61
18.00	400.46	0.46	2.39	0.29	0.65
27.00	400.58	0.58	2.76	0.36	0.67
36.00	400.69	0.69	3.05	0.43	0.68
45.00	400.79	0.79	3.30	0.49	0.70
50.00	400.84	0.84	3.42	0.52	0.70
63.00	400.96	0.96	3.69	0.60	0.72
72.00	401.03	1.03	3.86	0.64	0.72
81.00	401.10	1.10	4.01	0.69	0.73
90.00	401.17	1.17	4.15	0.73	0.74

Tailwater Channel Data - Pond 5 - Country Ln

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 15.00 ft

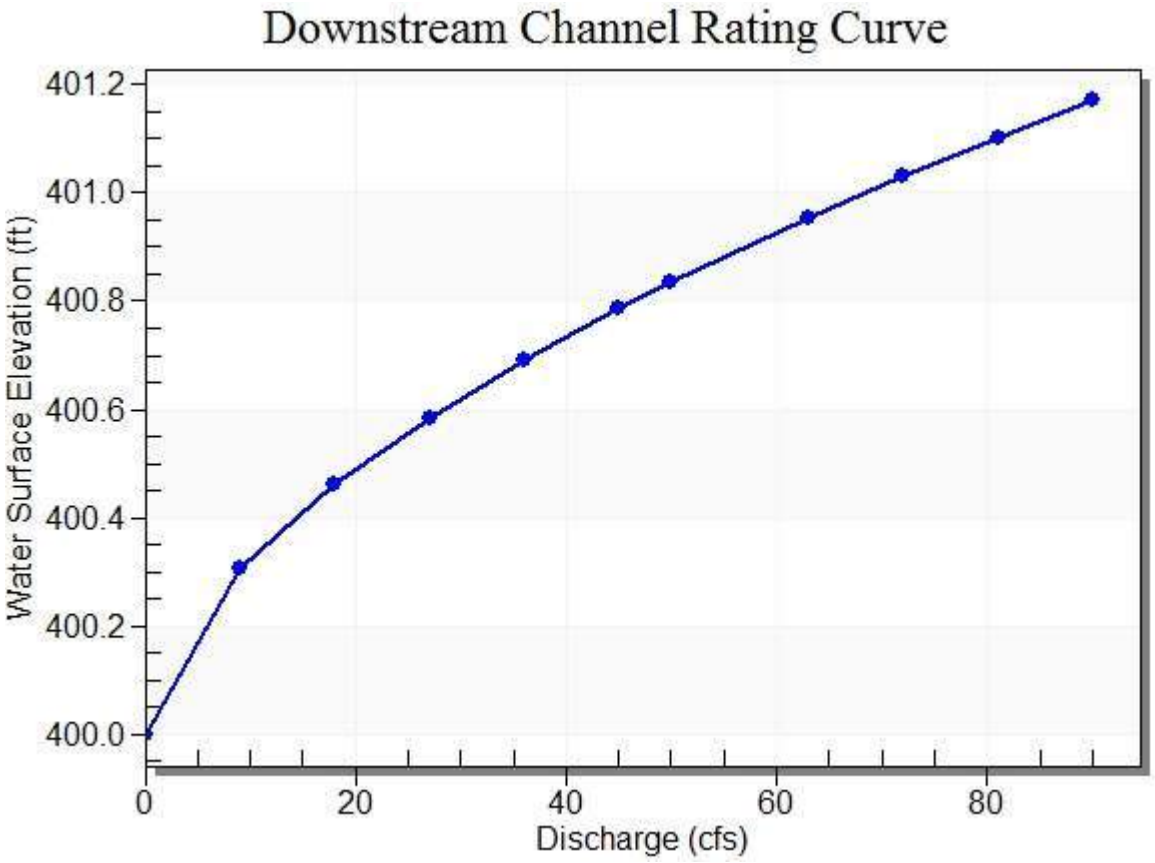
Side Slope (H:V): 3.00 (_:1)

Channel Slope: 0.0100

Channel Manning's n: 0.0350

Channel Invert Elevation: 400.00 ft

Tailwater Rating Curve Plot for Crossing: Pond 5 - Country Ln



Roadway Data for Crossing: Pond 5 - Country Ln

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 200.00 ft

Crest Elevation: 410.00 ft

Roadway Surface: Gravel

Roadway Top Width: 10.00 ft

1

```
 ******************80-80 LIST OF INPUT DATA FOR TR-20
 HYDROLOGY******************

 JOB TR-20                                                        NOPLOTS
 TITLE     Valley Mede Ultimate LU, Fair Cond, Subdivided
 TITLE     Option G, Pond 5
  2 XSECTN   002                  1.0      382.34
  8                            380.31        0.00        0.00
  8                            380.51        1.96        2.20
  8                            380.71        6.69        4.68
  8                            381.01       17.58        8.61
  8                            381.31       32.39       14.88
  8                            381.71       57.72       18.68
  8                            381.81       65.01       20.22
  8                            382.41       87.42       30.14
  8                            383.11      104.50       69.28
  8                            383.81      263.75      127.12
  8                            384.51      485.21      191.79
  8                            385.21      756.68      264.06
  8                            385.91     1097.04      343.49
  8                            386.61     1504.59      429.14
  8                            387.31     1935.42      521.71
  8                            388.01     2404.29      624.39
  9 ENDTBL
  2 XSECTN   007                  1.0      368.32
  8                            365.53        0.00        0.00
  8                            366.13        2.41        1.85
  8                            366.73       13.26        5.96
  8                            367.33       32.81       11.12
  8                            367.93       56.86       17.33
  8                            368.53       58.83       27.09
  8                            369.13       87.92       53.94
  8                            369.73      182.33       92.49
  8                            370.33      312.70      139.48
  8                            370.93      486.35      195.36
  8                            371.53      699.83      260.83
  8                            372.13      968.75      336.90
  8                            372.73     1275.43      425.26
  8                            373.33     1614.79      529.26
  8                            373.93     2124.43      651.29
  8                            374.53     2756.14      782.07
  8                            375.13     3501.54      920.13
  8                            375.73     4298.02     1065.04
  9 ENDTBL
  2 XSECTN   010                  1.0      356.35
  8                            348.10        0.00        0.00
  8                            348.70        5.42        4.43
  8                            349.30       24.01       11.59
  8                            349.90       53.17       19.81
  8                            350.50       92.55       29.09
  8                            351.10      142.34       39.42
  8                            351.70      165.15       51.53
  8                            352.90      175.05      116.35
1


 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************
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  8                              353.50      306.92      180.56
  8                              354.10      516.89      254.74
  8                              354.70      768.52      334.49
  8                              355.30     1065.05      420.62
  8                              355.90     1408.22      513.66
  8                              356.50     1807.31      613.67
  8                              357.10     2263.93      719.75
  8                              357.70     2774.44      831.81
  8                              358.30     3358.23      949.51
  9 ENDTBL
  2 XSECTN   014                    1.0      379.93
  8                              376.15        0.00        0.00
  8                              377.05        8.36        4.84
  8                              377.95       50.12       15.58
  8                              378.85      120.19       28.42
  8                              380.65      159.08       88.20
  8                              381.55      355.19      161.67
  8                              382.45      675.00      251.36
  8                              383.35     1104.38      349.36
  8                              384.25     1615.02      456.11
  8                              385.15     2234.68      571.32
  8                              386.05     2973.63      693.77
  8                              386.95     3792.19      822.71
  8                              387.85     4704.26      958.82
  8                              388.75     5747.20     1101.81
  8                              389.65     6882.68     1250.71
  8                              390.55     8093.30     1406.32
  8                              391.45     9366.77     1569.98
  8                              392.35    10762.79     1742.42
  9 ENDTBL
  2 XSECTN   019                    1.0      357.27
  8                              353.42        0.00        0.00
  8                              354.17        5.09        3.18
  8                              354.92       23.50        9.02
  8                              355.67       54.37       16.42
  8                              357.17       67.66       39.26
  8                              357.92      141.61       78.64
  8                              358.67      290.86      152.96
  8                              359.42      578.12      249.05
  8                              360.17      989.10      363.75
  8                              360.92     1520.99      494.51
  8                              361.67     2178.56      640.80
  8                              362.42     2981.64      802.19
  8                              363.17     3939.75      976.51
  8                              363.92     5049.66     1162.33
  8                              364.67     6325.86     1358.62
  8                              365.42     7734.95     1564.62
  9 ENDTBL
  2 XSECTN   023                    1.0      344.26
  8                              340.73        0.00        0.00
1
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**********80-80 LIST OF INPUT DATA (CONTINUED)**********

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  8                              341.48        9.64        6.59
  8                              342.23       39.11       16.56
  8                              342.98       85.34       28.29
  8                              344.48      146.45       57.99
  8                              345.23      162.66       92.62
  8                              345.98      273.72      148.97
  8                              346.73      453.62      224.13
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  8                          347.48      714.72      314.46
  8                          348.23     1049.51      417.50
  8                          348.98     1470.76      532.23
  8                          349.73     1960.34      657.45
  8                          350.48     2559.41      793.58
  8                          351.23     3222.20      938.75
  8                          351.98     3947.27     1094.98
  9 ENDTBL
  3 STRUCT      01
  8                    387.74      0.00        0.000
  8                    389.41      62.00       3.834
  8                    390.20      124.00      5.852
  8                    390.83      186.00      7.566
  8                    391.39      248.00      9.089
  8                    391.82      300.00      10.259
  8                    392.39      372.00      11.898
  8                    392.86      434.00      13.284
  8                    393.33      496.00      14.669
  8                    393.82      558.00      16.114
  8                    394.31      620.00      17.612
  8                    394.81      752.00      19.173
  8                    395.05      884.00      19.928
  8                    395.14      950.00      20.220
  8                    395.33      1100.00     20.835
  8                    395.36      1125.00     20.932
  8                    395.71      1500.00     22.066
  8                    396.00      1890.00     22.700
  9 ENDTBL
  3 STRUCT      02
  8                    369.00      0.00        0.000
  8                    373.22      187.00      6.34
  8                    374.49      290.00      8.68
  8                    377.92      633.00      16.10
  8                    381.60      1120.0      26.34
  8                    383.00      1438.0      30.93
  8                    384.33      1804.0      35.55
  9 ENDTBL
  3 STRUCT      03
  8                    368.00      0.000       0.000
  8                    371.06      105.00      9.69
  8                    372.14      164.00      13.33
  8                    376.06      350.00      27.97
  8                    378.66      864.00      39.11
1


 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

  8                    379.22      1289.0      41.76
  8                    379.72      1689.0      44.13
  9 ENDTBL
  3 STRUCT      04
  8                    367.00      0.000       0.000
  8                    370.91      87.00       5.33
  8                    371.97      143.00      6.96
  8                    376.05      291.00      14.42
  8                    378.64      781.00      21.39
  8                    379.18      1208.0      23.16
  8                    379.68      1632.0      24.80
  9 ENDTBL
  3 STRUCT      05
  8                    400.00      0.000       0.000
```

```
  8                     401.30      9.          2.447
  8                     401.96      18.         3.689
  8                     402.52      27.         4.847
  8                     403.05      36.         5.949
  8                     403.63      45.         7.156
  8                     403.99      50.         7.905
  8                     405.13      63.         10.508
  8                     406.10      72.         12.746
  8                     408.44      90.         18.677
  9 ENDTBL
  5 RAINFL 5             .1
  8          0.0000     0.0013      0.0023      0.0034      0.0044
  8          0.0055     0.0065      0.0076      0.0087      0.0098
  8          0.0109     0.0121      0.0132      0.0143      0.0155
  8          0.0167     0.0178      0.0190      0.0202      0.0214
  8          0.0226     0.0238      0.0251      0.0263      0.0276
  8          0.0288     0.0301      0.0314      0.0327      0.0340
  8          0.0353     0.0366      0.0379      0.0393      0.0406
  8          0.0420     0.0434      0.0447      0.0461      0.0475
  8          0.0489     0.0504      0.0518      0.0532      0.0547
  8          0.0562     0.0576      0.0591      0.0606      0.0621
  8          0.0636     0.0651      0.0667      0.0682      0.0697
  8          0.0713     0.0729      0.0745      0.0760      0.0776
  8          0.0793     0.0809      0.0826      0.0843      0.0861
  8          0.0879     0.0898      0.0916      0.0936      0.0955
  8          0.0975     0.0996      0.1017      0.1038      0.1060
  8          0.1082     0.1104      0.1127      0.1150      0.1174
  8          0.1198     0.1223      0.1247      0.1273      0.1298
  8          0.1324     0.1351      0.1378      0.1405      0.1432
  8          0.1461     0.1490      0.1521      0.1554      0.1588
  8          0.1623     0.1660      0.1699      0.1739      0.1780
  8          0.1823     0.1868      0.1914      0.1961      0.2010
  8          0.2061     0.2117      0.2179      0.2247      0.2321
  8          0.2400     0.2490      0.2591      0.2702      0.2825
  8          0.2955     0.3157      0.3370      0.3662      0.4067
  8          0.4766     0.5933      0.6338      0.6630      0.6843
1
```

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 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************

  8          0.7045     0.7176      0.7298      0.7409      0.7510
  8          0.7600     0.7679      0.7753      0.7821      0.7883
  8          0.7939     0.7990      0.8039      0.8086      0.8132
  8          0.8177     0.8220      0.8261      0.8301      0.8340
  8          0.8377     0.8412      0.8446      0.8479      0.8510
  8          0.8540     0.8568      0.8595      0.8622      0.8649
  8          0.8676     0.8702      0.8727      0.8753      0.8778
  8          0.8802     0.8826      0.8850      0.8873      0.8896
  8          0.8918     0.8940      0.8962      0.8983      0.9004
  8          0.9025     0.9045      0.9064      0.9084      0.9103
  8          0.9121     0.9139      0.9157      0.9174      0.9191
  8          0.9208     0.9224      0.9240      0.9256      0.9271
  8          0.9287     0.9303      0.9318      0.9334      0.9349
  8          0.9364     0.9379      0.9394      0.9409      0.9424
  8          0.9439     0.9453      0.9468      0.9482      0.9496
  8          0.9511     0.9525      0.9539      0.9553      0.9566
  8          0.9580     0.9594      0.9607      0.9621      0.9634
  8          0.9647     0.9660      0.9673      0.9686      0.9699
  8          0.9712     0.9724      0.9737      0.9749      0.9762
  8          0.9774     0.9786      0.9798      0.9810      0.9822
  8          0.9834     0.9845      0.9857      0.9868      0.9879
```

```
  8          0.9891      0.9902      0.9913      0.9924      0.9935
  8          0.9945      0.9956      0.9967      0.9977      0.9987
  8          1.0000      1.0000      1.0000      1.0000      1.0000
  9 ENDTBL
  6 RUNOFF 1 001       1 0.4053      83.135       0.444      1        1  DA5
  6 REACH  3  02   1   2 3113                                 1        1
  6 RUNOFF 1 003       3 0.0673      77.021       0.303      1        1  DA6
  6 RESVOR 2    05 3   4 400.                                 1        1  Pond
  6 REACH  3  02   4   1 1954                                 1        1
  6 ADDHYD 4  04   2 1 5                                      1        1
  6 RUNOFF 1 005       2 0.1867      76.388       0.530      1        1  DA4
  6 ADDHYD 4  06   5 2 4                                      1        1
  6 REACH  3  07   4   1 2088                                 1        1
  6 RUNOFF 1 008       2 0.2020      75.944       0.428      1        1  DA3
  6 ADDHYD 4 009   1 2 3                                      1        1
  6 REACH  3  10   3   1 3852                                 1        1
  6 RUNOFF 1 011       2 0.2366      76.760       0.443      1        1  DA2
  6 ADDHYD 4 012   1 2 6                                      1        1
  6 RUNOFF 1 013       1 0.3775      78.713       0.667      1        1  DA10
  6 REACH  3  14   1   2 2484                                 1        1
  6 RUNOFF 1 015       3 0.0886      84.806       0.443      1        1  DA9
  6 ADDHYD 4 016   2 3 4                                      1        1
  6 RUNOFF 1 017       3 0.0693      94.066       0.151      1        1  DA8
  6 ADDHYD 4 018   4 3 2                                      1        1
  6 REACH  3 019   2   1 4092                                 1        1
  6 RUNOFF 1 020       2 0.3284      87.933       0.277      1        1  DA7
  6 ADDHYD 4 021   1 2 7                                      1        1
  6 ADDHYD 4 022   6 7 1                                      1        1
  6 REACH  3  23   1   2 586                                  1        1
1


 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

  6 RUNOFF 1 024       3 0.0200      72.029       0.277      1        1  DA1
  6 ADDHYD 4 025   2 3 4                                      1        1
    ENDATA
  7 INCREM 6                    0.05
  7 COMPUT 7 001   025            0.0        2.64         1.05 2  1   1
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        3.19         1.05 2  1   2
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        4.91         1.05 2  1   10
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        7.23         1.05 2  1   50
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        8.47         1.05 2  1   98
    ENDCMP 1
  7 COMPUT 7 001   025            0.0        9.88         1.05 2  1   99
    ENDCMP 1
    ENDJOB 2

 ******************************END OF 80-80
 LIST*****************************
1
 TR20 ------------------------------------------------------------------- SCS
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EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .050 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 25
STARTING TIME = .00 RAIN DEPTH = 2.64 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .050 HOURS
ALTERNATE NO. = 1 STORM NO. = 1 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
12.33	222.9		(RUNOFF)
20.13	7.5		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.17 WATERSHED INCHES; 306 CFS-HRS; 25.3 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.68	156.4	383.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.17 WATERSHED INCHES; 306 CFS-HRS; 25.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
12.25	29.6		(RUNOFF)
20.10	1.0 *		(RUNOFF)

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.83 WATERSHED INCHES; 36 CFS-HRS; 3.0 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.39	4.7	400.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.82 WATERSHED INCHES; 36 CFS-HRS; 2.9 ACRE-FEET.

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OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.75	4.6 *	380.62

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.82 WATERSHED INCHES; 35 CFS-HRS; 2.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.69	159.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.12 WATERSHED INCHES; 341 CFS-HRS; 28.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.41	60.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.80 WATERSHED INCHES; 96 CFS-HRS; 8.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	204.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 437 CFS-HRS; 36.2 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.89	179.2	369.71

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 437 CFS-HRS; 36.1 ACRE-FEET.

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OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	70.2	(RUNOFF)
23.13	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.78 WATERSHED INCHES; 101 CFS-HRS; 8.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.81	208.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.97 WATERSHED INCHES; 539 CFS-HRS; 44.5 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	171.5	352.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.97 WATERSHED INCHES; 539 CFS-HRS; 44.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	86.0	(RUNOFF)
20.13	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.82 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.15	194.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.94 WATERSHED INCHES; 663 CFS-HRS; 54.8 ACRE-FEET.
1

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OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.50	128.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 223 CFS-HRS; 18.5 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.64	121.2	378.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 223 CFS-HRS; 18.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	53.2	(RUNOFF)
20.13	1.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.28 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	154.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.99 WATERSHED INCHES; 296 CFS-HRS; 24.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	99.0	(RUNOFF)
17.34	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.00 WATERSHED INCHES; 89 CFS-HRS; 7.4 ACRE-FEET.

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OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	166.7	(NULL)
12.53	176.8	(NULL)
20.00	9.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.10 WATERSHED INCHES; 381 CFS-HRS; 31.5 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.10	131.5	357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.09 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	288.1	(RUNOFF)
18.66	7.5	(RUNOFF)
21.98	6.0	(RUNOFF)
24.03	5.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.50 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	317.4	(NULL)
12.88	179.8	(NULL)
20.04	17.1	(NULL)
20.58	16.4	(NULL)
23.71	13.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.24 WATERSHED INCHES; 693 CFS-HRS; 57.3 ACRE-

FEET.

OPERATION ADDHYD XSECTION 22

1

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	425.5	(NULL)
13.05	369.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.06 WATERSHED INCHES; 1338 CFS-HRS; 110.6 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	404.2	346.52
13.14	368.7	346.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.05 WATERSHED INCHES; 1335 CFS-HRS; 110.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	6.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.60 WATERSHED INCHES; 8 CFS-HRS; .6 ACRE-FEET.

OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	409.1	(NULL)
13.14	370.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.05 WATERSHED INCHES; 1343 CFS-HRS; 111.0 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 25

```
   STARTING TIME =   .00       RAIN DEPTH =  3.19       RAIN DURATION =  1.00
   ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
   ALTERNATE NO. = 1           STORM NO. = 2            RAIN TABLE NO. = 5
1
 TR20 ------------------------------------------------------------------- SCS
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 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                          306.8                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.61 WATERSHED INCHES;     421 CFS-HRS;      34.8 ACRE-
                   FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.65                          228.3                         383.65

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.61 WATERSHED INCHES;     421 CFS-HRS;      34.8 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.24                           44.4                       (RUNOFF)
       24.03                            1.1                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.21 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
                   FEET.


 OPERATION RESVOR   STRUCTURE  5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       13.29                            7.0                         401.02

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.18 WATERSHED INCHES;      51 CFS-HRS;       4.3 ACRE-
                   FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
```

```
      13.60                          6.9 *                        380.72
                                         * FIRST POINT OF FLAT PEAK

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.18 WATERSHED INCHES;      51 CFS-HRS;       4.2 ACRE-
                FEET.
1
 TR20 ------------------------------------------------------------------- SCS
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 OPERATION ADDHYD   XSECTION   4

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.66                         233.0                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.55 WATERSHED INCHES;     471 CFS-HRS;      39.0 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.40                          91.9                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.17 WATERSHED INCHES;     141 CFS-HRS;      11.6 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   6

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.59                         302.5                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.44 WATERSHED INCHES;     612 CFS-HRS;      50.6 ACRE-
                FEET.


 OPERATION REACH    XSECTION   7

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.83                         268.7                       370.13

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.44 WATERSHED INCHES;     612 CFS-HRS;      50.6 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   8
```

```
    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                          106.9                       (RUNOFF)
       20.14                            4.0                       (RUNOFF)
       23.13                            3.3                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.14 WATERSHED INCHES;     149 CFS-HRS;      12.3 ACRE-
                  FEET.
1
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 OPERATION ADDHYD   XSECTION   9

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.76                          315.2                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.37 WATERSHED INCHES;     761 CFS-HRS;      62.9 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  10

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       13.23                          249.2                        353.24

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.37 WATERSHED INCHES;     760 CFS-HRS;      62.8 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  11

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.34                          128.7                       (RUNOFF)
       20.13                            4.8                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.19 WATERSHED INCHES;     182 CFS-HRS;      15.0 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  12

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       13.16                          280.6                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.33 WATERSHED INCHES;     942 CFS-HRS;      77.8 ACRE-
                  FEET.
```

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	188.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.31 WATERSHED INCHES; 319 CFS-HRS; 26.4 ACRE-FEET.

OPERATION REACH XSECTION 14
1
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.74	153.2	380.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.31 WATERSHED INCHES; 319 CFS-HRS; 26.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	72.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.73 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.65	189.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.39 WATERSHED INCHES; 418 CFS-HRS; 34.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	123.7	(RUNOFF)
15.84	3.5	(RUNOFF)
19.43	2.1	(RUNOFF)
19.74	2.0	(RUNOFF)

```
      20.05                          2.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.51 WATERSHED INCHES;     112 CFS-HRS;       9.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  18

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.17                        212.0                        (NULL)
      12.56                        213.2                        (NULL)
      20.00                         12.6                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.50 WATERSHED INCHES;     518 CFS-HRS;      42.8 ACRE-
                FEET.
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 OPERATION REACH    XSECTION  19

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.10                        169.9                         358.06

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.48 WATERSHED INCHES;     512 CFS-HRS;      42.3 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  20

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                        380.2                        (RUNOFF)
      18.66                          9.4                        (RUNOFF)
      20.66                          8.3                        (RUNOFF)
      21.98                          7.6                        (RUNOFF)
      24.03                          6.5                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.98 WATERSHED INCHES;     420 CFS-HRS;      34.7 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  21

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                        436.7                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.66 WATERSHED INCHES;     926 CFS-HRS;      76.5 ACRE-
```

FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	602.1	(NULL)
13.05	506.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.44 WATERSHED INCHES; 1828 CFS-HRS; 151.1 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	580.1	347.09
13.14	505.5	346.88

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.44 WATERSHED INCHES; 1825 CFS-HRS; 150.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	10.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	588.0	(NULL)
13.13	507.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.44 WATERSHED INCHES; 1837 CFS-HRS; 151.8 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 25

```
    STARTING TIME =   .00       RAIN DEPTH =  4.91       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =10            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.32                         595.7                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  3.10 WATERSHED INCHES;     812 CFS-HRS;      67.1 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.56                         472.6                        384.47
1
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  3.10 WATERSHED INCHES;     812 CFS-HRS;      67.1 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.23                          96.3                       (RUNOFF)
       21.97                           2.2                       (RUNOFF)
       23.12                           2.0                       (RUNOFF)
       24.03                           1.9                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  2.55 WATERSHED INCHES;     111 CFS-HRS;       9.1 ACRE-
                  FEET.


 OPERATION RESVOR   STRUCTURE  5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.91                          20.6                        402.12

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  2.48 WATERSHED INCHES;     108 CFS-HRS;       8.9 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   2
```

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
13.17 20.2 381.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.47 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.57 486.3 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.01 WATERSHED INCHES; 917 CFS-HRS; 75.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.38 202.4 (RUNOFF)
1
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.49 WATERSHED INCHES; 300 CFS-HRS; 24.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.51 659.6 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.86 WATERSHED INCHES; 1218 CFS-HRS; 100.6 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.71 592.6 371.23

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.86 WATERSHED INCHES; 1217 CFS-HRS; 100.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                        238.2                      (RUNOFF)
      20.13                          7.4                      (RUNOFF)
      23.13                          5.9                      (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.45 WATERSHED INCHES;     320 CFS-HRS;      26.4 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.64                        715.9                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.77 WATERSHED INCHES;    1537 CFS-HRS;     127.0 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.00                        599.8                      354.30
1
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   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.76 WATERSHED INCHES;    1536 CFS-HRS;     126.9 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  11

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                        283.4                      (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.53 WATERSHED INCHES;     386 CFS-HRS;      31.9 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  12

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.92                        684.5                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.71 WATERSHED INCHES;    1922 CFS-HRS;     158.8 ACRE-
                FEET.
```

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	397.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 658 CFS-HRS; 54.3 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.70	331.9	381.44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 658 CFS-HRS; 54.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	135.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.26 WATERSHED INCHES; 187 CFS-HRS; 15.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	403.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 844 CFS-HRS; 69.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	199.4	(RUNOFF)
15.84	5.5	(RUNOFF)
17.34	4.3	(RUNOFF)
20.05	3.2	(RUNOFF)

```
      20.61                          3.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.12 WATERSHED INCHES;     184 CFS-HRS;      15.2 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  18

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.18                        397.3                       (NULL)
      12.56                        441.9                       (NULL)
      19.98                         21.9                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.87 WATERSHED INCHES;     991 CFS-HRS;      81.9 ACRE-
                FEET.


 OPERATION REACH    XSECTION  19

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.98                        361.2                        358.85

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.84 WATERSHED INCHES;     981 CFS-HRS;      81.1 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  20
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                        670.8                       (RUNOFF)
      18.66                         15.4                       (RUNOFF)
      20.11                         14.2                       (RUNOFF)
      20.66                         13.5                       (RUNOFF)
      21.98                         12.3                       (RUNOFF)
      23.11                         11.3                       (RUNOFF)
      24.03                         10.5                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                3.57 WATERSHED INCHES;     757 CFS-HRS;      62.6 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  21

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                        824.2                       (NULL)
```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.08 WATERSHED INCHES; 1716 CFS-HRS; 141.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.27	1269.3	(NULL)
12.86	1163.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.79 WATERSHED INCHES; 3537 CFS-HRS; 292.3 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	1248.2	348.58
12.93	1162.5	348.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.79 WATERSHED INCHES; 3532 CFS-HRS; 291.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	24.7	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.13 WATERSHED INCHES; 27 CFS-HRS; 2.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	1266.7	(NULL)
12.92	1167.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.78 WATERSHED INCHES; 3558 CFS-HRS; 294.0 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

```
 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  7.23       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =50            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                         995.0                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.25 WATERSHED INCHES;    1374 CFS-HRS;     113.5 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.49                         817.3                         385.33

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.24 WATERSHED INCHES;    1370 CFS-HRS;     113.2 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION   3
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    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.23                         172.1                        (RUNOFF)
       20.12                           4.1                        (RUNOFF)
       23.77                           3.0                        (RUNOFF)
       24.03                           3.0                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.57 WATERSHED INCHES;     199 CFS-HRS;      16.4 ACRE-
                  FEET.


 OPERATION RESVOR   STRUCTURE  5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.77                          44.2                         403.58

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.38 WATERSHED INCHES;     190 CFS-HRS;      15.7 ACRE-
                  FEET.
```

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.96	43.6	381.49

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.37 WATERSHED INCHES; 190 CFS-HRS; 15.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.49	850.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.10 WATERSHED INCHES; 1555 CFS-HRS; 128.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	365.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.50 WATERSHED INCHES; 542 CFS-HRS; 44.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.46	1190.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.93 WATERSHED INCHES; 2096 CFS-HRS; 173.2 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.63	1074.9	372.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.91 WATERSHED INCHES; 2091 CFS-HRS; 172.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
12.31	432.9		(RUNOFF)
20.13	12.0		(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.45 WATERSHED INCHES; 580 CFS-HRS; 47.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
12.56	1330.3		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.80 WATERSHED INCHES; 2670 CFS-HRS; 220.7 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.83	1138.9	355.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.78 WATERSHED INCHES; 2658 CFS-HRS; 219.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
12.32	509.4		(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.54 WATERSHED INCHES; 694 CFS-HRS; 57.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)	
12.72	1344.7		(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.73 WATERSHED INCHES; 3351 CFS-HRS; 276.9 ACRE-

FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.46	698.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.76 WATERSHED INCHES; 1160 CFS-HRS; 95.9 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.65	615.0	382.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.76 WATERSHED INCHES; 1160 CFS-HRS; 95.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	222.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.41 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.58	740.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.84 WATERSHED INCHES; 1455 CFS-HRS; 120.2 ACRE-FEET.

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OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	300.6	(RUNOFF)
15.84	8.2	(RUNOFF)
17.34	6.3	(RUNOFF)

```
      18.61                          5.1                        (RUNOFF)
      18.84                          5.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.29 WATERSHED INCHES;     281 CFS-HRS;      23.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  18

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.54                         803.4                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.85 WATERSHED INCHES;    1675 CFS-HRS;     138.4 ACRE-
                FEET.


 OPERATION REACH    XSECTION  19

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.92                         690.9                         359.63

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.81 WATERSHED INCHES;    1663 CFS-HRS;     137.5 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  20

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                        1066.0                        (RUNOFF)
      18.66                          23.4                        (RUNOFF)
      20.11                          21.4                        (RUNOFF)
      20.66                          20.5                        (RUNOFF)
      21.98                          18.6                        (RUNOFF)
      23.11                          17.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.72 WATERSHED INCHES;    1213 CFS-HRS;     100.2 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  21
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                        1338.7                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.11 WATERSHED INCHES;    2846 CFS-HRS;     235.2 ACRE-
```

FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	2311.9	(NULL)
12.66	2250.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.76 WATERSHED INCHES; 6032 CFS-HRS; 498.5 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	2301.1	350.16
12.72	2249.0	350.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.76 WATERSHED INCHES; 6025 CFS-HRS; 497.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	47.3	(RUNOFF)
20.66	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.03 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	2334.0	(NULL)
12.71	2261.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 6074 CFS-HRS; 502.0 ACRE-FEET.

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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

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 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  8.47       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =98            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                        1200.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   6.39 WATERSHED INCHES;    1672 CFS-HRS;     138.2 ACRE-
                   FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.48                        1001.7                         385.71

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   6.37 WATERSHED INCHES;    1667 CFS-HRS;     137.8 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.23                         212.8                        (RUNOFF)
       18.67                           5.3                        (RUNOFF)
       21.98                           4.2                        (RUNOFF)
       24.03                           3.6                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   5.70 WATERSHED INCHES;     248 CFS-HRS;      20.5 ACRE-
                   FEET.


 OPERATION RESVOR   STRUCTURE  5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.76                          54.4                         404.38

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   5.43 WATERSHED INCHES;     236 CFS-HRS;      19.5 ACRE-
                   FEET.
1
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 OPERATION REACH    XSECTION   2
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```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.92                        54.1                        381.65

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.42 WATERSHED INCHES;     235 CFS-HRS;      19.5 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   4

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.49                       1046.7                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.21 WATERSHED INCHES;    1895 CFS-HRS;     156.6 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.37                        457.4                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.63 WATERSHED INCHES;     679 CFS-HRS;      56.1 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   6

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.45                       1473.7                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.04 WATERSHED INCHES;    2568 CFS-HRS;     212.2 ACRE-
                FEET.


 OPERATION REACH    XSECTION   7

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.62                       1330.2                       372.83

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.02 WATERSHED INCHES;    2561 CFS-HRS;     211.7 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   8
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```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.31                        539.7                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.57 WATERSHED INCHES;     727 CFS-HRS;      60.0 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.55                       1650.8                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.91 WATERSHED INCHES;    3282 CFS-HRS;     271.3 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.80                       1429.5                        355.93

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.88 WATERSHED INCHES;    3268 CFS-HRS;     270.0 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  11

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                        630.0                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.67 WATERSHED INCHES;     866 CFS-HRS;      71.6 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  12

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.70                       1693.7                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.82 WATERSHED INCHES;    4127 CFS-HRS;     341.1 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  13

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.45                        862.2                       (RUNOFF)
1
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.91 WATERSHED INCHES; 1440 CFS-HRS; 119.0 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.63	771.1	382.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.91 WATERSHED INCHES; 1439 CFS-HRS; 118.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	270.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.56 WATERSHED INCHES; 375 CFS-HRS; 31.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	926.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.94 WATERSHED INCHES; 1787 CFS-HRS; 147.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	353.6	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.4	(RUNOFF)
20.84	5.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.47 WATERSHED INCHES; 334 CFS-HRS; 27.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	1002.2	(NULL)

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1
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.95 WATERSHED INCHES;    2057 CFS-HRS;     170.0 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  19

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.85                          872.5                        359.96

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.92 WATERSHED INCHES;    2044 CFS-HRS;     168.9 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  20

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.21                         1270.7                       (RUNOFF)
       18.66                           27.6                       (RUNOFF)
       20.11                           25.3                       (RUNOFF)
       20.66                           24.2                       (RUNOFF)
       21.98                           22.0                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  6.87 WATERSHED INCHES;    1456 CFS-HRS;     120.3 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  21

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.23                         1683.8                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  6.23 WATERSHED INCHES;    3470 CFS-HRS;     286.8 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  22

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                         2938.2                       (NULL)
       12.62                         2866.1                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.86 WATERSHED INCHES;    7416 CFS-HRS;     612.9 ACRE-
                  FEET.
```

```
 OPERATION REACH    XSECTION  23
1
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    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.37                          2928.0                          350.90
       12.68                          2865.9                          350.83

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   5.85 WATERSHED INCHES;    7407 CFS-HRS;     612.2 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION  24

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.21                           59.9                       (RUNOFF)
       24.03                            1.0                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   5.11 WATERSHED INCHES;      66 CFS-HRS;       5.4 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION  25

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.37                          2969.1                       (NULL)
       12.66                          2882.7                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   5.84 WATERSHED INCHES;    7470 CFS-HRS;     617.3 ACRE-
                   FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   5


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  9.88       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =99            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                          1440.5                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   7.69 WATERSHED INCHES;    2012 CFS-HRS;     166.3 ACRE-
```

FEET.

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OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.52	1218.2	386.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.67 WATERSHED INCHES; 2006 CFS-HRS; 165.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	260.1	(RUNOFF)
18.67	6.3	(RUNOFF)
21.96	5.0	(RUNOFF)
24.03	4.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.02 WATERSHED INCHES; 305 CFS-HRS; 25.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.77	64.5	405.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.63 WATERSHED INCHES; 288 CFS-HRS; 23.8 ACRE-FEET.

OPERATION REACH XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.91	64.2	381.80

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.61 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)

```
      12.53                        1274.8                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                7.50 WATERSHED INCHES;    2286 CFS-HRS;     188.9 ACRE-
                FEET.
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 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.37                         558.6                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.94 WATERSHED INCHES;     836 CFS-HRS;      69.1 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   6

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.48                        1767.0                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                7.31 WATERSHED INCHES;    3110 CFS-HRS;     257.0 ACRE-
                FEET.


 OPERATION REACH    XSECTION   7

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.65                        1607.5                        373.32

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                7.29 WATERSHED INCHES;    3101 CFS-HRS;     256.3 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   8

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.30                         662.1                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.88 WATERSHED INCHES;     897 CFS-HRS;      74.1 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
```

```
   ELEVATION(FEET)
      12.58                        1970.7                          (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.17 WATERSHED INCHES;    3986 CFS-HRS;     329.4 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  10
1
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.87                        1738.7                          356.40

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.14 WATERSHED INCHES;    3968 CFS-HRS;     327.9 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  11

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.31                         775.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  6.98 WATERSHED INCHES;    1067 CFS-HRS;      88.1 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  12

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.78                        2009.9                          (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.09 WATERSHED INCHES;    5021 CFS-HRS;     414.9 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  13

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.45                        1050.5                          (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  7.22 WATERSHED INCHES;    1760 CFS-HRS;     145.4 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  14
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```
    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.62                          951.3                        383.03

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   7.21 WATERSHED INCHES;    1756 CFS-HRS;     145.1 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION  15

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                          321.2                        (RUNOFF)
1
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   7.85 WATERSHED INCHES;     449 CFS-HRS;      37.1 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION  16

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.56                         1141.9                        (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   7.21 WATERSHED INCHES;    2167 CFS-HRS;     179.1 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION  17

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.14                          413.8                        (RUNOFF)
       15.84                           11.3                        (RUNOFF)
       17.34                            8.7                        (RUNOFF)
       20.05                            6.4                        (RUNOFF)
       20.61                            6.1                        (RUNOFF)
       20.84                            6.0                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   8.80 WATERSHED INCHES;     393 CFS-HRS;      32.5 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION  18

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.53                         1231.8                        (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
```

7.22 WATERSHED INCHES; 2494 CFS-HRS; 206.1 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.83	1081.0	360.30

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.17 WATERSHED INCHES; 2479 CFS-HRS; 204.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 20
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	1503.9	(RUNOFF)
18.66	32.4	(RUNOFF)
20.11	29.7	(RUNOFF)
20.66	28.3	(RUNOFF)
21.98	25.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.19 WATERSHED INCHES; 1737 CFS-HRS; 143.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.24	2029.0	(NULL)
20.03	78.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.50 WATERSHED INCHES; 4183 CFS-HRS; 345.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	3459.9	(NULL)
12.70	3414.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.11 WATERSHED INCHES; 9001 CFS-HRS; 743.8 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	3449.6	351.47
12.76	3412.7	351.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.10 WATERSHED INCHES; 8991 CFS-HRS; 743.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	74.1	(RUNOFF)
24.03	1.2	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.38 WATERSHED INCHES; 82 CFS-HRS; 6.8 ACRE-FEET.

OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	3501.7	(NULL)
12.76	3430.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.09 WATERSHED INCHES; 9069 CFS-HRS; 749.5 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 6
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 2.64 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 5, ARC 2
MAIN TIME INCREMENT .050 HOURS

ALTERNATE 1 STORM 1

XSECTION	1	RUNOFF	.41	1.17	---	12.33	223	543.9
XSECTION	2	REACH	.41	1.17	383.34	12.68	156	380.5
XSECTION	3	RUNOFF	.07	.83	---	12.25	30	428.6
STRUCTURE	5	RESVOR	.07	.82	400.67	13.39	5	71.4
XSECTION	2	REACH	.07	.82	380.62	13.75F	5F	71.4
XSECTION	4	ADDHYD	.47	1.12	---	12.69	159	338.3
XSECTION	5	RUNOFF	.19	.80	---	12.41	60	315.8
XSECTION	6	ADDHYD	.66	1.03	---	12.62	204	309.1
XSECTION	7	REACH	.66	1.03	369.71	12.89	179	271.2
XSECTION	8	RUNOFF	.20	.78	---	12.34	70	350.0
XSECTION	9	ADDHYD	.86	.97	---	12.81	208	241.9
XSECTION	10	REACH	.86	.97	352.47	13.24	172	200.0
XSECTION	11	RUNOFF	.24	.82	---	12.35	86	358.3
XSECTION	12	ADDHYD	1.10	.94	---	13.15	194	176.4
XSECTION	13	RUNOFF	.38	.92	---	12.50	129	339.5
XSECTION	14	REACH	.38	.92	378.90	12.64	121	318.4
XSECTION	15	RUNOFF	.09	1.28	---	12.33	53	588.9
XSECTION	16	ADDHYD	.47	.99	---	12.57	154	327.7
XSECTION	17	RUNOFF	.07	2.00	---	12.14	99	1414.3
XSECTION	18	ADDHYD	.54	1.10	---	12.53	177	327.8
XSECTION	19	REACH	.54	1.09	357.82	13.10	132	244.4
XSECTION	20	RUNOFF	.33	1.50	---	12.22	288	872.7
XSECTION	21	ADDHYD	.86	1.24	---	12.22	317	368.6
XSECTION	22	ADDHYD	1.96	1.06	---	12.26	426	217.3
XSECTION	23	REACH	1.96	1.05	346.52	12.36	404	206.1
XSECTION	24	RUNOFF	.02	.60	---	12.24	6	300.0
XSECTION	25	ADDHYD	1.98	1.05	---	12.36	409	206.6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STANDARD PEAK DISCHARGE

STRUCTURE ID	CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 1 STORM 2							
XSECTION 1	RUNOFF	.41	1.61	---	12.33	307	748.8
XSECTION 2	REACH	.41	1.61	383.65	12.65	228	556.1
XSECTION 3	RUNOFF	.07	1.21	---	12.24	44	628.6
STRUCTURE 5	RESVOR	.07	1.18	401.02	13.29	7	100.0
XSECTION 2	REACH	.07	1.18	380.72	13.60F	7F	100.0
XSECTION 4	ADDHYD	.47	1.55	---	12.66	233	495.7
XSECTION 5	RUNOFF	.19	1.17	---	12.40	92	484.2
XSECTION 6	ADDHYD	.66	1.44	---	12.59	303	459.1
XSECTION 7	REACH	.66	1.44	370.13	12.83	269	407.6
XSECTION 8	RUNOFF	.20	1.14	---	12.33	107	535.0
XSECTION 9	ADDHYD	.86	1.37	---	12.76	315	366.3
XSECTION 10	REACH	.86	1.37	353.24	13.23	249	289.5
XSECTION 11	RUNOFF	.24	1.19	---	12.34	129	537.5
XSECTION 12	ADDHYD	1.10	1.33	---	13.16	281	255.5
XSECTION 13	RUNOFF	.38	1.31	---	12.48	189	497.4
XSECTION 14	REACH	.38	1.31	380.38	12.74	153	402.6
XSECTION 15	RUNOFF	.09	1.73	---	12.32	73	811.1
XSECTION 16	ADDHYD	.47	1.39	---	12.65	190	404.3
XSECTION 17	RUNOFF	.07	2.51	---	12.14	124	1771.4
XSECTION 18	ADDHYD	.54	1.50	---	12.56	213	394.4
XSECTION 19	REACH	.54	1.48	358.06	13.10	170	314.8
XSECTION 20	RUNOFF	.33	1.98	---	12.21	380	1151.5
XSECTION 21	ADDHYD	.86	1.66	---	12.23	437	508.1
XSECTION 22	ADDHYD	1.96	1.44	---	12.26	602	307.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)

ALTERNATE 1 STORM 2

XSECTION	23	REACH	1.96	1.44	347.09	12.36	580	295.9
XSECTION	24	RUNOFF	.02	.92	---	12.23	10	500.0
XSECTION	25	ADDHYD	1.98	1.44	---	12.35	588	297.0

RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 10

XSECTION	1	RUNOFF	.41	3.10	---	12.32	596	1453.7
XSECTION	2	REACH	.41	3.10	384.47	12.56	473	1153.7
XSECTION	3	RUNOFF	.07	2.55	---	12.23	96	1371.4
STRUCTURE	5	RESVOR	.07	2.48	402.12	12.91	21	300.0
XSECTION	2	REACH	.07	2.47	381.06	13.17	20	285.7
XSECTION	4	ADDHYD	.47	3.01	---	12.57	486	1034.0
XSECTION	5	RUNOFF	.19	2.49	---	12.38	202	1063.2
XSECTION	6	ADDHYD	.66	2.86	---	12.51	660	1000.0
XSECTION	7	REACH	.66	2.86	371.23	12.71	593	898.5
XSECTION	8	RUNOFF	.20	2.45	---	12.32	238	1190.0
XSECTION	9	ADDHYD	.86	2.77	---	12.64	716	832.6
XSECTION	10	REACH	.86	2.76	354.30	13.00	600	697.7
XSECTION	11	RUNOFF	.24	2.53	---	12.32	283	1179.2
XSECTION	12	ADDHYD	1.10	2.71	---	12.92	684	621.8
XSECTION	13	RUNOFF	.38	2.70	---	12.47	397	1044.7
XSECTION	14	REACH	.38	2.70	381.44	12.70	332	873.7
XSECTION	15	RUNOFF	.09	3.26	---	12.32	136	1511.1
XSECTION	16	ADDHYD	.47	2.81	---	12.62	403	857.4
XSECTION	17	RUNOFF	.07	4.12	---	12.14	199	2842.9
XSECTION	18	ADDHYD	.54	2.87	---	12.56	442	818.5
XSECTION	19	REACH	.54	2.84	358.85	12.98	361	668.5
XSECTION	20	RUNOFF	.33	3.57	---	12.21	671	2033.3
XSECTION	21	ADDHYD	.86	3.08	---	12.23	824	958.1

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 10

XSECTION	22	ADDHYD	1.96	2.79	---	12.27	1269	647.4
XSECTION	23	REACH	1.96	2.79	348.58	12.36	1248	636.7
XSECTION	24	RUNOFF	.02	2.13	---	12.22	25	1250.0
XSECTION	25	ADDHYD	1.98	2.78	---	12.35	1267	639.9

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 50

XSECTION	1	RUNOFF	.41	5.25	---	12.31	995	2426.8
XSECTION	2	REACH	.41	5.24	385.33	12.49	817	1992.7
XSECTION	3	RUNOFF	.07	4.57	---	12.23	172	2457.1
STRUCTURE	5	RESVOR	.07	4.38	403.58	12.77	44	628.6
XSECTION	2	REACH	.07	4.37	381.49	12.96	44	628.6
XSECTION	4	ADDHYD	.47	5.10	---	12.49	850	1808.5
XSECTION	5	RUNOFF	.19	4.50	---	12.37	365	1921.1
XSECTION	6	ADDHYD	.66	4.93	---	12.46	1190	1803.0
XSECTION	7	REACH	.66	4.91	372.34	12.63	1075	1628.8
XSECTION	8	RUNOFF	.20	4.45	---	12.31	433	2165.0
XSECTION	9	ADDHYD	.86	4.80	---	12.56	1330	1546.5
XSECTION	10	REACH	.86	4.78	355.43	12.83	1139	1324.4
XSECTION	11	RUNOFF	.24	4.54	---	12.32	509	2120.8
XSECTION	12	ADDHYD	1.10	4.73	---	12.72	1345	1222.7
XSECTION	13	RUNOFF	.38	4.76	---	12.46	698	1836.8
XSECTION	14	REACH	.38	4.76	382.28	12.65	615	1618.4
XSECTION	15	RUNOFF	.09	5.41	---	12.31	223	2477.8
XSECTION	16	ADDHYD	.47	4.84	---	12.58	741	1576.6
XSECTION	17	RUNOFF	.07	6.29	---	12.14	301	4300.0
XSECTION	18	ADDHYD	.54	4.85	---	12.54	803	1487.0
XSECTION	19	REACH	.54	4.81	359.63	12.92	691	1279.6
XSECTION	20	RUNOFF	.33	5.72	---	12.21	1066	3230.3

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 50

XSECTION	21	ADDHYD	.86	5.11	---	12.23	1339	1557.0
XSECTION	22	ADDHYD	1.96	4.76	---	12.30	2312	1179.6
XSECTION	23	REACH	1.96	4.76	350.16	12.37	2301	1174.0
XSECTION	24	RUNOFF	.02	4.03	---	12.21	47	2350.0
XSECTION	25	ADDHYD	1.98	4.75	---	12.36	2334	1178.8

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 98

XSECTION	1	RUNOFF	.41	6.39	---	12.31	1200	2926.8
XSECTION	2	REACH	.41	6.37	385.71	12.48	1002	2443.9
XSECTION	3	RUNOFF	.07	5.70	---	12.23	213	3042.9
STRUCTURE	5	RESVOR	.07	5.43	404.38	12.76	54	771.4
XSECTION	2	REACH	.07	5.42	381.65	12.92	54	771.4
XSECTION	4	ADDHYD	.47	6.21	---	12.49	1047	2227.7
XSECTION	5	RUNOFF	.19	5.63	---	12.37	457	2405.3
XSECTION	6	ADDHYD	.66	6.04	---	12.45	1474	2233.3
XSECTION	7	REACH	.66	6.02	372.83	12.62	1330	2015.2
XSECTION	8	RUNOFF	.20	5.57	---	12.31	540	2700.0
XSECTION	9	ADDHYD	.86	5.91	---	12.55	1651	1919.8
XSECTION	10	REACH	.86	5.88	355.93	12.80	1429	1661.6
XSECTION	11	RUNOFF	.24	5.67	---	12.32	630	2625.0
XSECTION	12	ADDHYD	1.10	5.82	---	12.70	1694	1540.0
XSECTION	13	RUNOFF	.38	5.91	---	12.45	862	2268.4
XSECTION	14	REACH	.38	5.91	382.65	12.63	771	2028.9
XSECTION	15	RUNOFF	.09	6.56	---	12.31	271	3011.1
XSECTION	16	ADDHYD	.47	5.94	---	12.57	927	1972.3
XSECTION	17	RUNOFF	.07	7.47	---	12.14	354	5057.1
XSECTION	18	ADDHYD	.54	5.95	---	12.54	1002	1855.6
XSECTION	19	REACH	.54	5.92	359.96	12.85	872	1614.8

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 98

XSECTION	20	RUNOFF	.33	6.87	---	12.21	1271	3851.5

XSECTION	21	ADDHYD	.86	6.23	---	12.23	1684	1958.1
XSECTION	22	ADDHYD	1.96	5.86	---	12.31	2938	1499.0
XSECTION	23	REACH	1.96	5.85	350.90	12.37	2928	1493.9
XSECTION	24	RUNOFF	.02	5.11	---	12.21	60	3000.0
XSECTION	25	ADDHYD	1.98	5.84	---	12.37	2969	1499.5

RAINFALL OF 9.88 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 99

XSECTION	1	RUNOFF	.41	7.69	---	12.31	1441	3514.6
XSECTION	2	REACH	.41	7.67	386.12	12.52	1218	2970.7
XSECTION	3	RUNOFF	.07	7.02	---	12.23	260	3714.3
STRUCTURE	5	RESVOR	.07	6.63	405.29	12.77	64	914.3
XSECTION	2	REACH	.07	6.61	381.80	12.91	64	914.3
XSECTION	4	ADDHYD	.47	7.50	---	12.53	1275	2712.8
XSECTION	5	RUNOFF	.19	6.94	---	12.37	559	2942.1
XSECTION	6	ADDHYD	.66	7.31	---	12.48	1767	2677.3
XSECTION	7	REACH	.66	7.29	373.32	12.65	1607	2434.8
XSECTION	8	RUNOFF	.20	6.88	---	12.30	662	3310.0
XSECTION	9	ADDHYD	.86	7.17	---	12.58	1971	2291.9
XSECTION	10	REACH	.86	7.14	356.40	12.87	1739	2022.1
XSECTION	11	RUNOFF	.24	6.98	---	12.31	775	3229.2
XSECTION	12	ADDHYD	1.10	7.09	---	12.78	2010	1827.3
XSECTION	13	RUNOFF	.38	7.22	---	12.45	1050	2763.2
XSECTION	14	REACH	.38	7.21	383.03	12.62	951	2502.6
XSECTION	15	RUNOFF	.09	7.85	---	12.31	321	3566.7
XSECTION	16	ADDHYD	.47	7.21	---	12.56	1142	2429.8
XSECTION	17	RUNOFF	.07	8.80	---	12.14	414	5914.3
XSECTION	18	ADDHYD	.54	7.22	---	12.53	1232	2281.5

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 99

XSECTION	19	REACH	.54	7.17	360.30	12.83	1081	2001.9
XSECTION	20	RUNOFF	.33	8.19	---	12.21	1504	4557.6

```
 XSECTION  21  ADDHYD      .86     7.50        ---     12.24     2029   2359.3
 XSECTION  22  ADDHYD     1.96     7.11        ---     12.30     3460   1765.3
 XSECTION  23  REACH      1.96     7.10     351.47     12.36     3450   1760.2

 XSECTION  24  RUNOFF      .02     6.38        ---     12.21       74   3700.0
 XSECTION  25  ADDHYD     1.98     7.09        ---     12.36     3502   1768.7
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                      Option G, Pond 5
 2.04TEST
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                              SUMMARY TABLE 2
                              ---------------
           MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
   QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS
   USED;
                            LENGTH FACTOR - VALUE K* GREATER THAN  1.0;
                            ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

                     HYDROGRAPH INFORMATION          ROUTING PARAMETERS
                    -------------------------
                    -------------------------------
              FLOOD     INFLOW        OUTFLOW       Q-A EQ.            PEAK  ATT-
 XSEC REACH   PLAIN  -----------   -----------  ----------- LENGTH   RATIO  KIN
  ID  LENGTH LENGTH PEAK   TIME    PEAK   TIME   COEFF POWER FACTOR    Q/I
  COEFF
       (FT)   (FT)  (CFS)  (HR)    (CFS)  (HR)    (X)    (M)   (k*)     (Q*)  (C)


 BASEFLOW IS    .0 CFS

    ALTERNATE    1   STORM    1
    ---------------------------
   2   3113           222  12.4     156  12.7    .29   1.40   .208   .704
   .14
   2   1954             5  13.4       5  13.8    .54   1.63   .010   .985
   .17
   7   2088           204  12.6     179  12.9    .71   1.23   .085   .877
   .19
  10   3852           208  12.8     171? 13.3    .50   1.28   .144   .824
  .11
  14   2484           129  12.5     121  12.6    .81   1.47   .033   .940
  .35

  19   4092           176  12.6     132  13.1   1.06   1.12   .247   .746
  .09
  23    586           425  12.3     404  12.4    .94   1.14   .016   .949
  .52

    ALTERNATE    1   STORM    2
    ---------------------------
   2   3113           305  12.4     228  12.6    .24   1.45   .167   .748
   .17
   2   1954             7  13.3       7  13.6    .54   1.63   .008   .988
   .20
   7   2088           302  12.6     268  12.9    .63   1.26   .076   .887
   .21
  10   3852           315  12.8     249  13.3    .41   1.27   .178   .790
```

```
  .10
  14   2484           189  12.5     153  12.8    .75   1.23   .133   .812
  .17

  19   4092           213  12.6     170  13.1   1.08   1.11   .215   .797
  .09
  23    586           601  12.3     580  12.4    .74   1.19   .012   .964
  .57

    ALTERNATE    1   STORM   10
    ----------------------------
   2   3113           594  12.3     472  12.6    .23   1.45   .123   .795
   .20
   2   1954            21  12.9      20  13.1    .60   1.54   .010   .980
   .26
   7   2088           659  12.5     593  12.7    .59   1.27   .066   .899
   .25
  10   3852           716  12.6     600  13.0    .23   1.39   .123   .838
  .14
  14   2484           397  12.4     332  12.7    .57   1.27   .118   .836
  .19

  19   4092           442  12.6     361  13.0    .88   1.16   .192   .817
  .10
  23    586          1263  12.3    1248  12.4    .46   1.28   .007   .988
  .69?

    ALTERNATE    1   STORM   50
    ----------------------------
   2   3113           994  12.3     817  12.5    .26   1.43   .101   .822
   .23
   2   1954            44  12.8      44  12.9    .44   1.63   .007   .986
   .33
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                       Option G, Pond 5
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                              SUMMARY TABLE 2
                              ---------------
           MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
   QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS
   USED;
                            LENGTH FACTOR - VALUE K* GREATER THAN  1.0;
                            ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

                     HYDROGRAPH INFORMATION          ROUTING PARAMETERS
                    -------------------------
                    -------------------------------
             FLOOD    INFLOW        OUTFLOW       Q-A EQ.           PEAK  ATT-
 XSEC REACH  PLAIN  -----------   -----------   ----------- LENGTH  RATIO  KIN
  ID  LENGTH LENGTH PEAK   TIME   PEAK   TIME   COEFF POWER FACTOR   Q/I
  COEFF
       (FT)   (FT)  (CFS)  (HR)   (CFS)  (HR)    (X)   (M)   (k*)    (Q*)  (C)

    ALTERNATE    1   STORM   50
    ----------------------------
   7   2088          1190  12.4    1073  12.6    .64   1.26   .063   .902
```

```
   .28
  10   3852          1330  12.6    1138  12.9    .22   1.40   .103   .855
  .16
  14   2484           698  12.4     615  12.6    .37   1.36   .078   .881
  .24
  19   4092           803  12.6     690  12.9    .47   1.30   .135   .859
  .14
  23    586          2312  12.3    2297  12.4    .36   1.33   .005   .993
  .78?

    ALTERNATE    1   STORM   98
    ----------------------------
   2   3113          1198  12.3    1000  12.5    .26   1.43   .092   .834
   .24
   2   1954            54  12.8      54  12.9    .27   1.83   .003   .994
   .40
   7   2088          1474  12.4    1328  12.6    .74   1.23   .066   .901
   .28
  10   3852          1651  12.6    1429  12.8    .22   1.40   .096   .866
  .17
  14   2484           862  12.4     770  12.6    .33   1.38   .067   .893
  .25

  19   4092          1002  12.6     872  12.9    .40   1.32   .121   .871
  .15
  23    586          2938  12.3    2922  12.4    .33   1.34   .005   .995
  .82?

    ALTERNATE    1   STORM   99
    ----------------------------
   2   3113          1439  12.3    1213  12.5    .26   1.43   .086   .843
   .25
   2   1954            64  12.8      64  12.9    .25   1.85   .002   .996
   .43
   7   2088          1764  12.5    1607  12.6    .76   1.22   .064   .911
   .28
  10   3852          1968  12.6    1737  12.9    .22   1.40   .087   .883
  .18
  14   2484          1050  12.4     950  12.6    .30   1.40   .059   .904
  .27

  19   4092          1230  12.6    1080  12.9    .38   1.34   .111   .878
  .16
  23    586          3460  12.3    3447  12.4    .33   1.34   .005   .996
  .84?
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/**                      Option G, Pond 5
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                            SUMMARY TABLE 3
                            ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.....
   ID               (SQ MI)          1         2        10        50        98
```

STRUCTURE 5 .07

ALTERNATE 1 5 7 21 44
54

XSECTION 1 .41

ALTERNATE 1 223 307 596 995
1200

XSECTION 2 .07

ALTERNATE 1 5 7 20 44
54

XSECTION 3 .07

ALTERNATE 1 30 44 96 172
213

XSECTION 4 .47

ALTERNATE 1 159 233 486 850
1047

XSECTION 5 .19

ALTERNATE 1 60 92 202 365
457

XSECTION 6 .66

ALTERNATE 1 204 303 660 1190
1474

XSECTION 7 .66

ALTERNATE 1 179 269 593 1075
1330

XSECTION 8 .20

ALTERNATE 1 70 107 238 433
540

XSECTION 9 .86

ALTERNATE 1 208 315 716 1330
1651

XSECTION 10 .86

ALTERNATE 1 172 249 600 1139
1429

XSECTION 11 .24

ALTERNATE 1 86 129 283 509
630

XSECTION 12 1.10

ALTERNATE	1	194	281	684	1345	1694

XSECTION 13 .38

1

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	10	50	98
XSECTION 13		.38					
ALTERNATE	1		129	189	397	698	862
XSECTION 14		.38					
ALTERNATE	1		121	153	332	615	771
XSECTION 15		.09					
ALTERNATE	1		53	73	136	223	271
XSECTION 16		.47					
ALTERNATE	1		154	190	403	741	927
XSECTION 17		.07					
ALTERNATE	1		99	124	199	301	354
XSECTION 18		.54					
ALTERNATE	1		177	213	442	803	1002
XSECTION 19		.54					
ALTERNATE	1		132	170	361	691	872
XSECTION 20		.33					
ALTERNATE	1		288	380	671	1066	

1271

XSECTION 21 .86

ALTERNATE 1 317 437 824 1339
1684

XSECTION 22 1.96

ALTERNATE 1 426 602 1269 2312
2938

XSECTION 23 1.96

ALTERNATE 1 404 580 1248 2301
2928

XSECTION 24 .02

ALTERNATE 1 6 10 25 47
60

XSECTION 25 1.98

ALTERNATE 1 409 588 1267 2334
2969

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ DRAINAGE
STRUCTURE AREA STORM NUMBERS.....
ID (SQ MI) 99

STRUCTURE 5 .07

ALTERNATE 1 64
1
TR20 ---------- SCS
-
Valley Mede Ultimate LU, Fair Cond, Subdivided
VERSION
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ DRAINAGE
STRUCTURE AREA STORM NUMBERS.....
ID (SQ MI) 99

XSECTION 1 .41

ALTERNATE 1 1441

```
 XSECTION    2          .07
 ---------------------------
    ALTERNATE    1                  64

 XSECTION    3          .07
 ---------------------------
    ALTERNATE    1                 260

 XSECTION    4          .47
 ---------------------------
    ALTERNATE    1                1275

 XSECTION    5          .19
 ---------------------------
    ALTERNATE    1                 559

 XSECTION    6          .66
 ---------------------------
    ALTERNATE    1                1767

 XSECTION    7          .66
 ---------------------------
    ALTERNATE    1                1607

 XSECTION    8          .20
 ---------------------------
    ALTERNATE    1                 662

 XSECTION    9          .86
 ---------------------------
    ALTERNATE    1                1971

 XSECTION   10          .86
 ---------------------------
    ALTERNATE    1                1739

 XSECTION   11          .24
 ---------------------------
    ALTERNATE    1                 775

 XSECTION   12         1.10
 ---------------------------
    ALTERNATE    1                2010

 XSECTION   13          .38
 ---------------------------
    ALTERNATE    1                1050
1
 TR20 ------------------------------------------------------------------------ SCS
 -
                 Valley Mede Ultimate LU, Fair Cond, Subdivided
                 VERSION
 09/21/**                         Option G, Pond 5
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                              SUMMARY TABLE 3
                              ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.
```

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 14	.38	
ALTERNATE 1		951
XSECTION 15	.09	
ALTERNATE 1		321
XSECTION 16	.47	
ALTERNATE 1		1142
XSECTION 17	.07	
ALTERNATE 1		414
XSECTION 18	.54	
ALTERNATE 1		1232
XSECTION 19	.54	
ALTERNATE 1		1081
XSECTION 20	.33	
ALTERNATE 1		1504
XSECTION 21	.86	
ALTERNATE 1		2029
XSECTION 22	1.96	
ALTERNATE 1		3460
XSECTION 23	1.96	
ALTERNATE 1		3450
XSECTION 24	.02	
ALTERNATE 1		74
XSECTION 25	1.98	
ALTERNATE 1		3502

1
TR20 ---------- SCS
-
Valley Mede Ultimate LU, Fair Cond, Subdivided
VERSION
09/21/** Option G, Pond 5
2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

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INPUT  = optg.dat                                , GIVEN DATA FILE
OUTPUT = optg.OUT                                , DATED 09/21/
**,18:01:14
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FILES GENERATED - DATED 09/21/**,18:01:14

NONE!

TOTAL NUMBER OF WARNINGS = 0, MESSAGES = 0

*** TR-20 RUN COMPLETED ***

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017

Plumtree Plumtree

Elevation (ft)

400
390
380
370
360
350
340

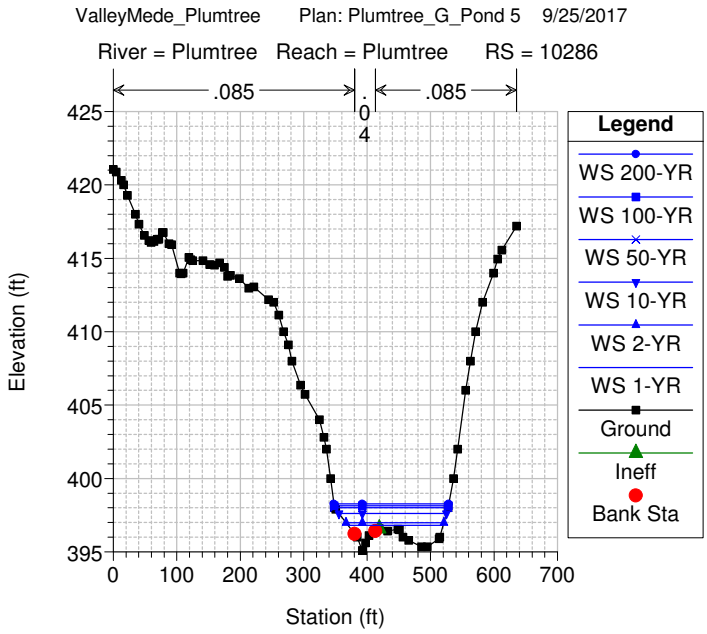
0
2000
4000
6000
8000
10000
12000

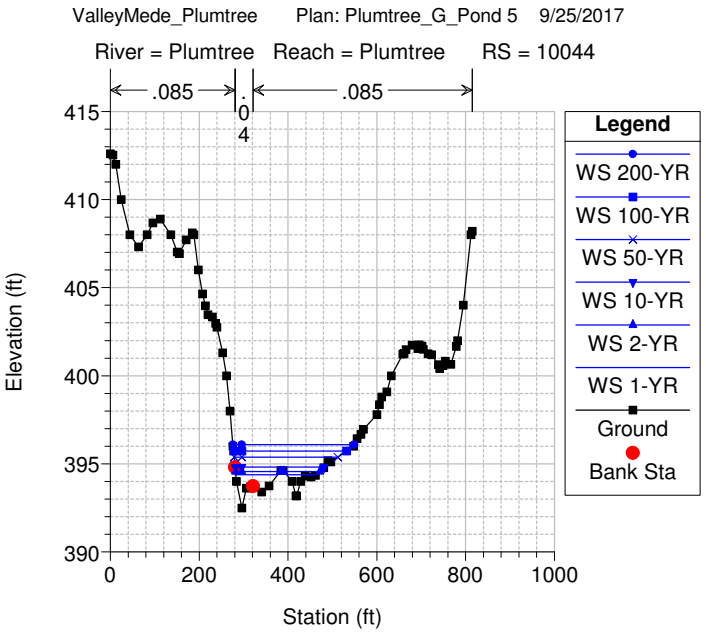
Main Channel Distance (ft)

380 526 762 911 1124 1291 1463 1641 1830 1994 2153 2331 2485 2589 2759 2900 Frederick Rd 2978 3077 3179 3296 3428 3550 3688 3816 3930 4033 4185 4289 4400 US 40 4636 4745 4845 5000 Longview Dr 5107 5209 5323 5419 5560 5650 Brookmede Rd 5824 5926 6028 6122 6250 Hearthstone Rd 6350 6454 6568 6663 6766 6893 7030 7216 7367 7548 7800 7954 8094 8229 8374 8579 8753 8987 9196 9301 9398 9499 9650 Michaels Way 9814 10044 10286

Legend

- WS 200-YR
- WS 100-YR
- WS 50-YR
- WS 10-YR
- WS 2-YR
- WS 1-YR
- Ground
- LOB
- ROB
- Right Levee


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 10286
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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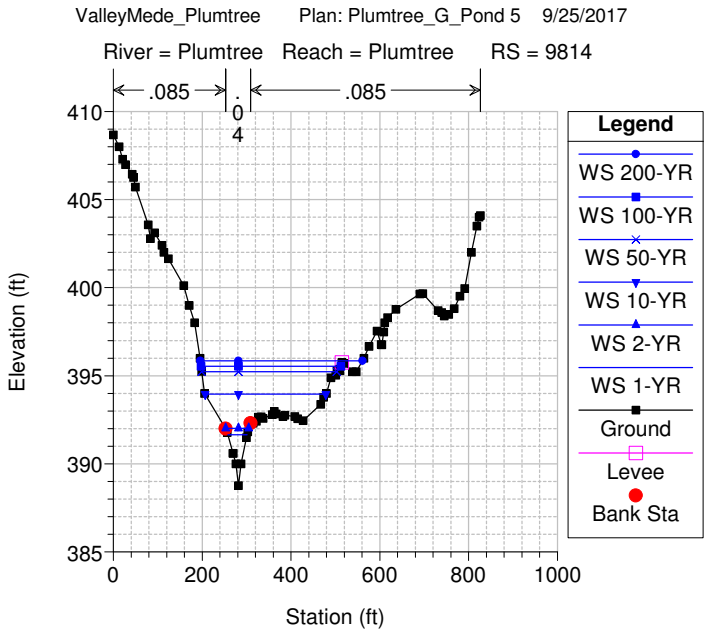
River = Plumtree Reach = Plumtree RS = 10044
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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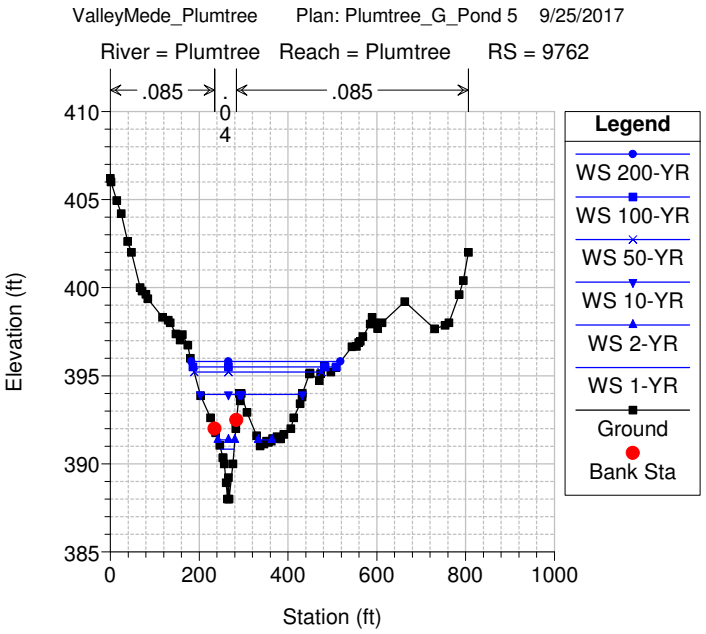
River = Plumtree Reach = Plumtree RS = 9814
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)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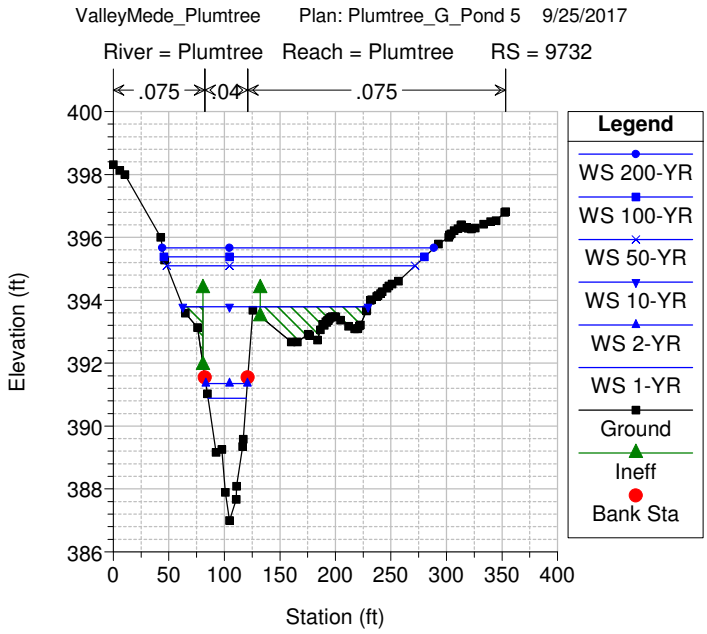
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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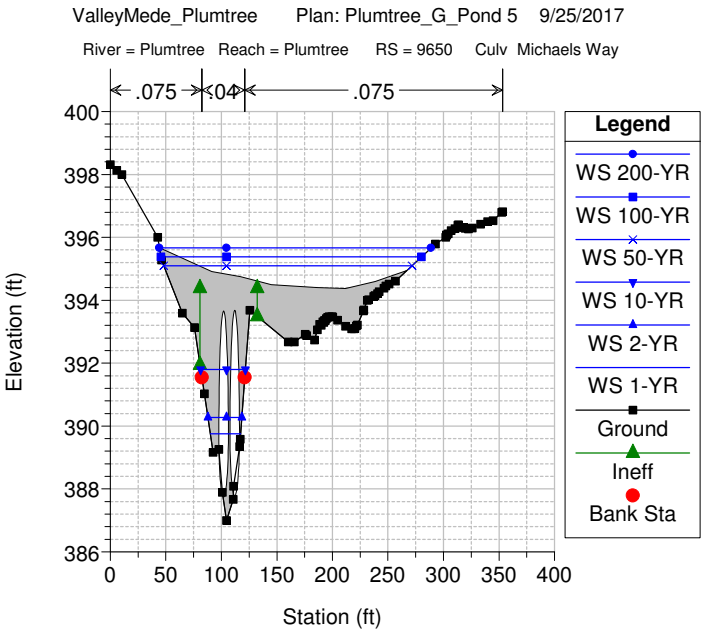
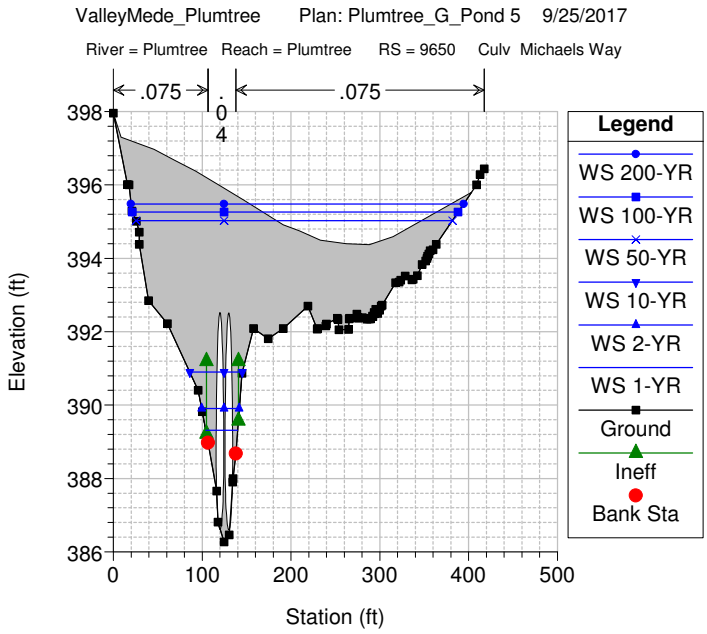
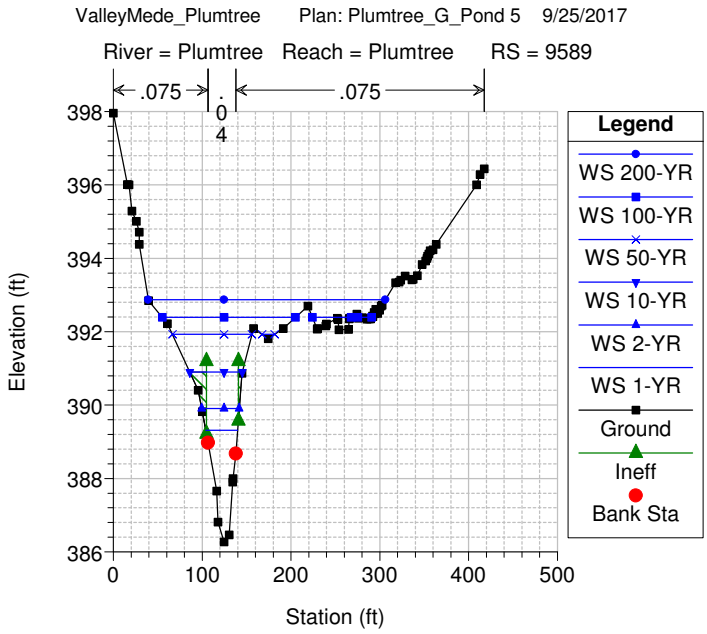
River = Plumtree Reach = Plumtree RS = 9732
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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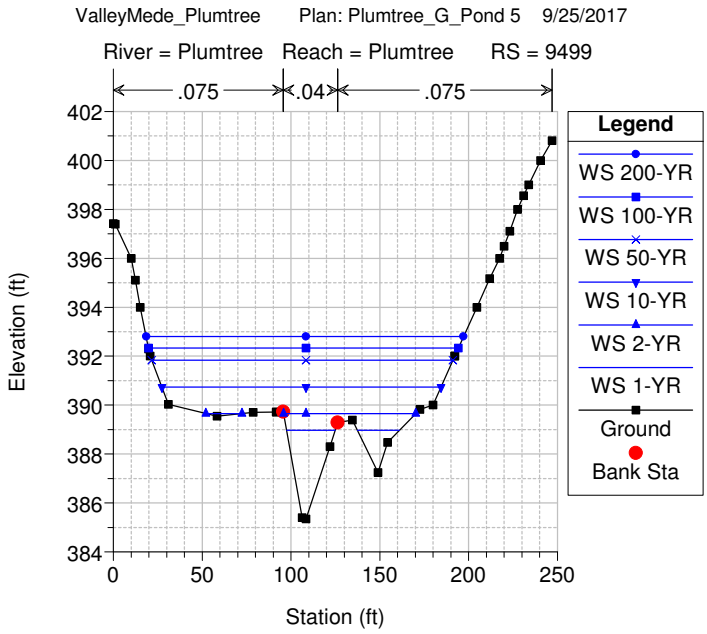
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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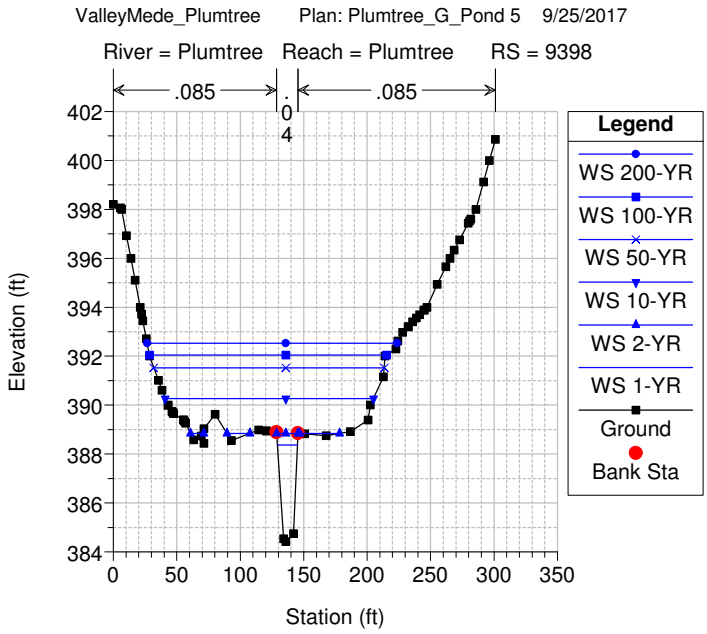
River = Plumtree Reach = Plumtree RS = 9499
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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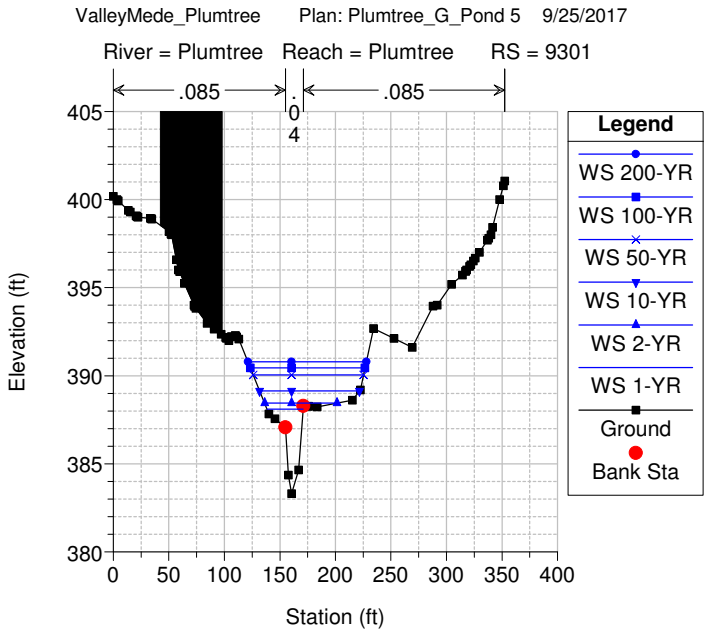
River = Plumtree Reach = Plumtree RS = 9398
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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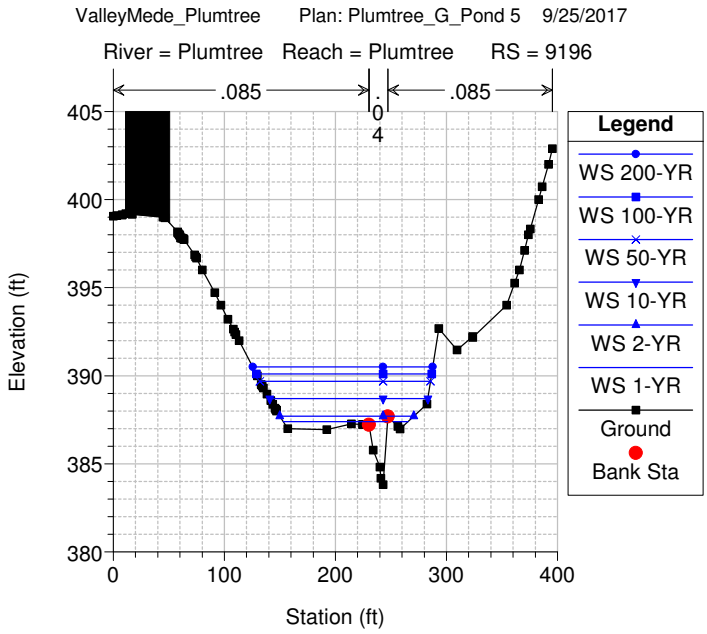
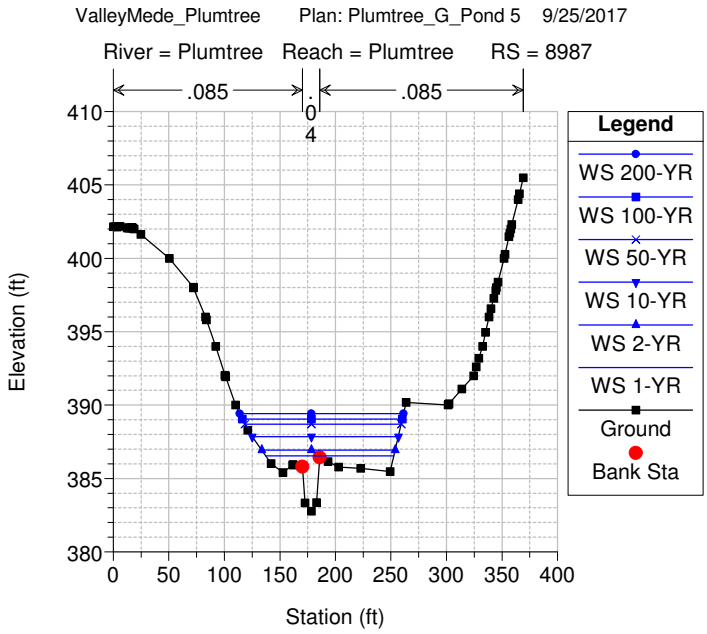
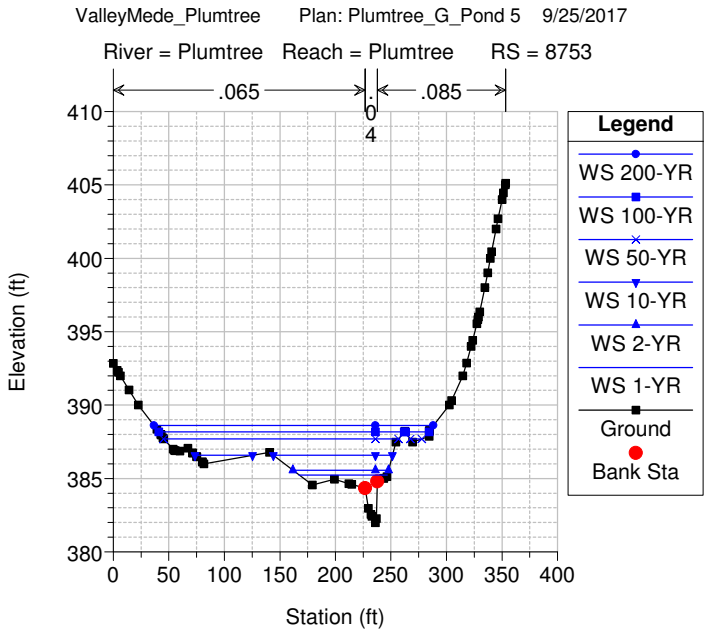
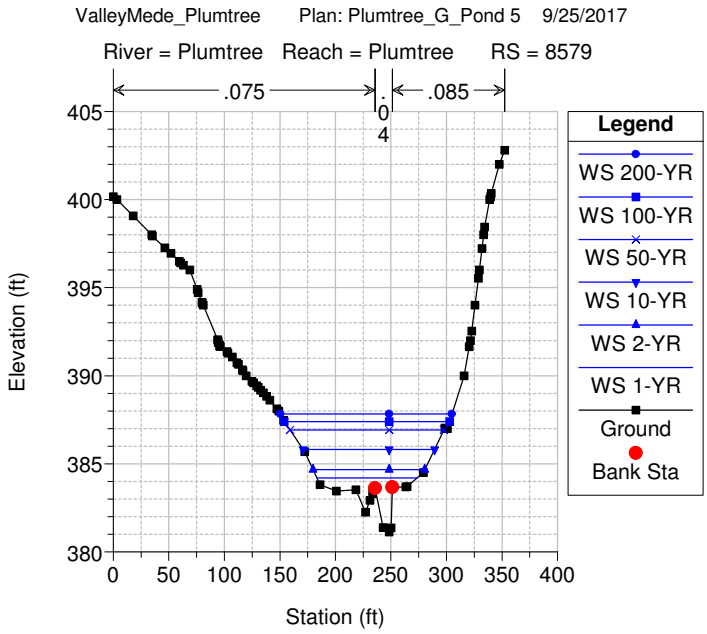
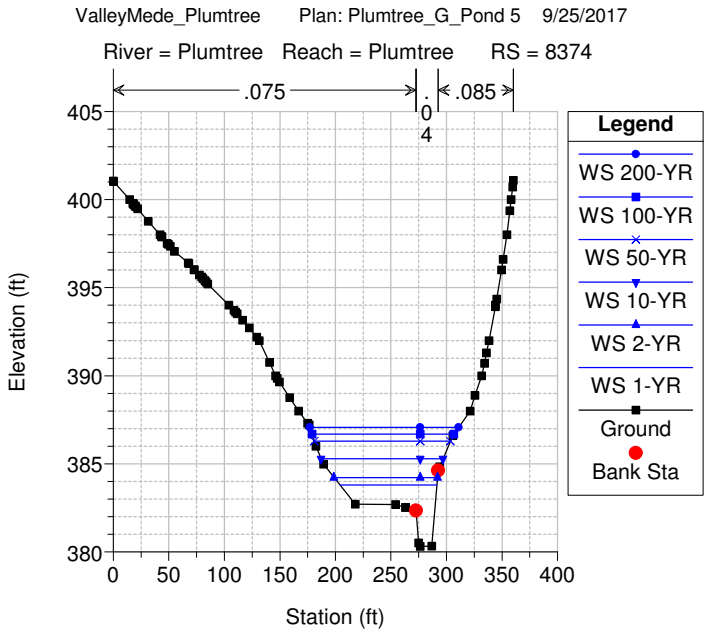
River = Plumtree Reach = Plumtree RS = 9301
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

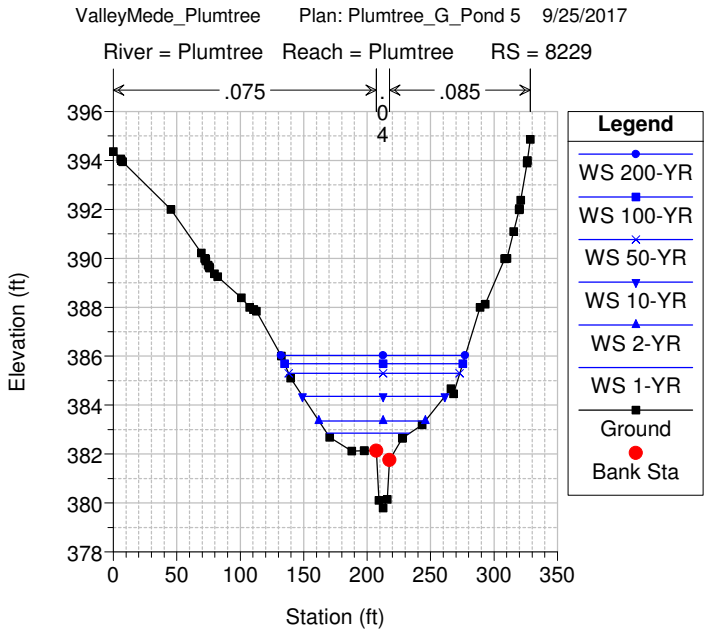

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 9196
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

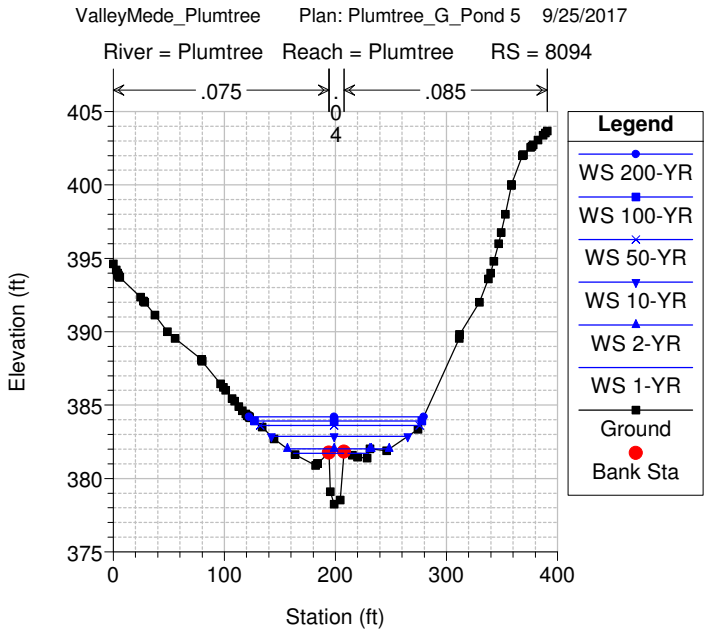

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 8987
.085
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

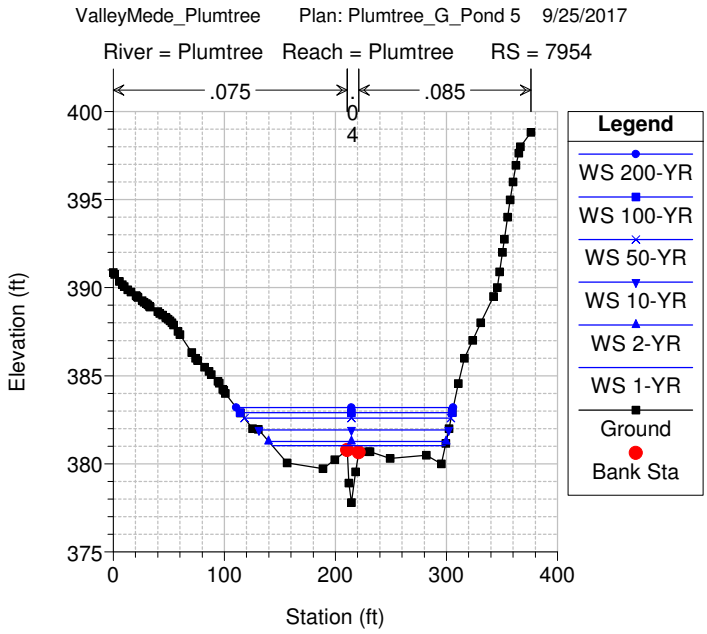

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 8753
.065
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

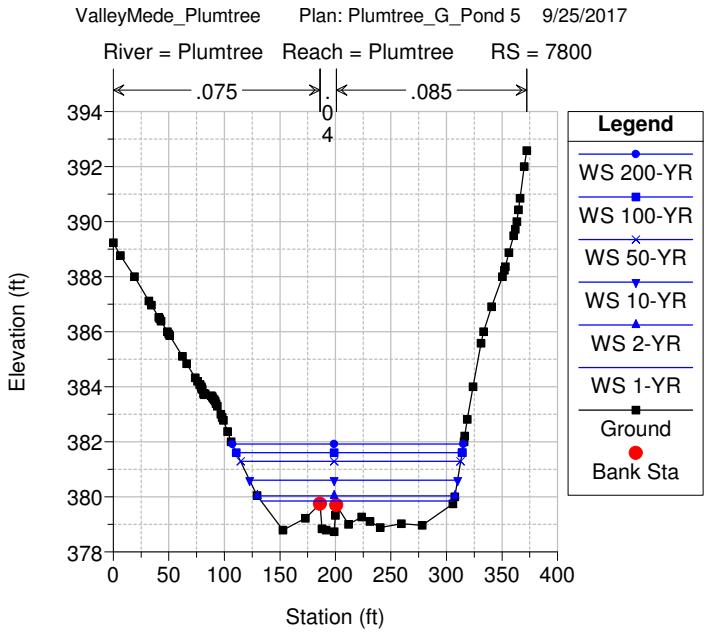

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 8579
.075
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

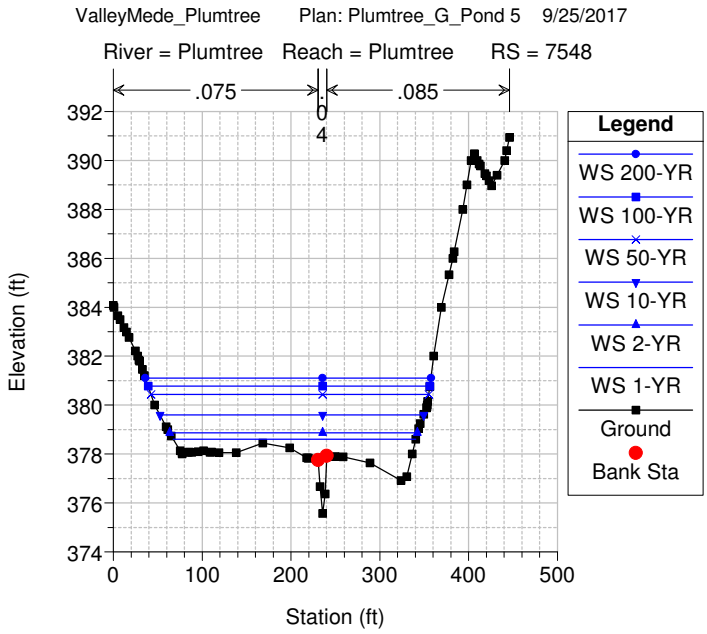

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 8374
.075
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

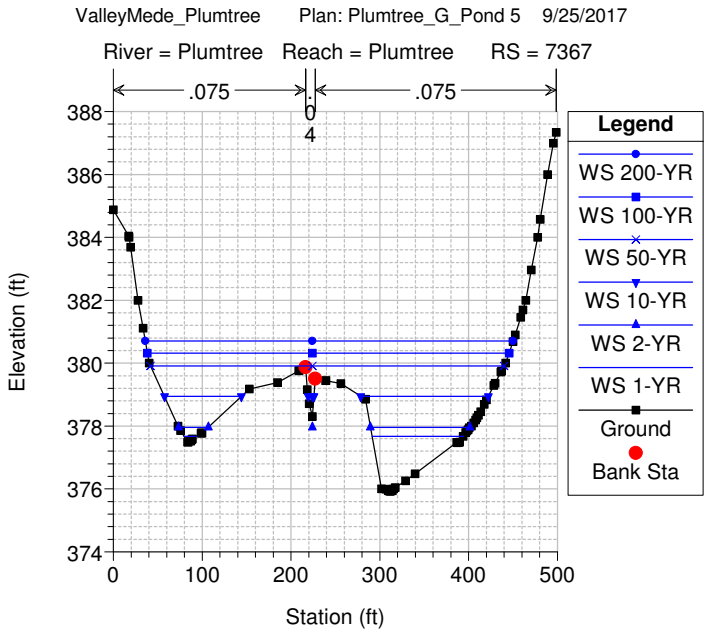

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 8229
.075
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

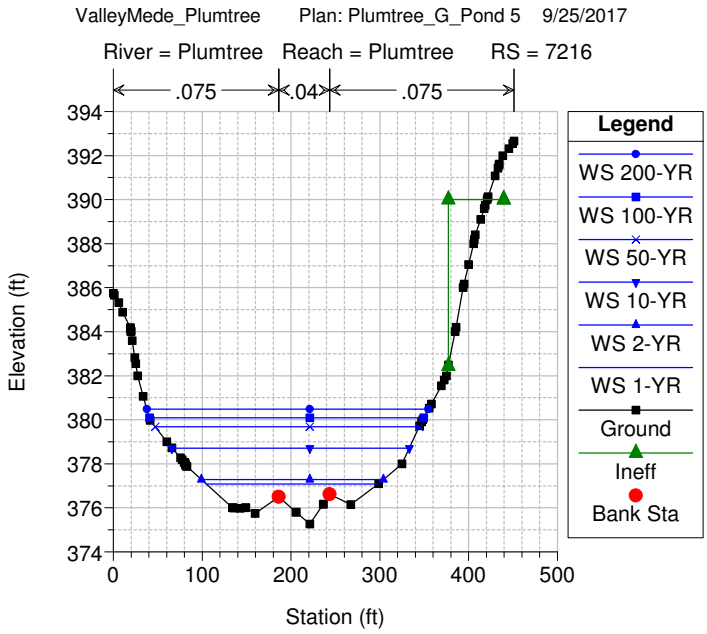

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 8094
.075
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

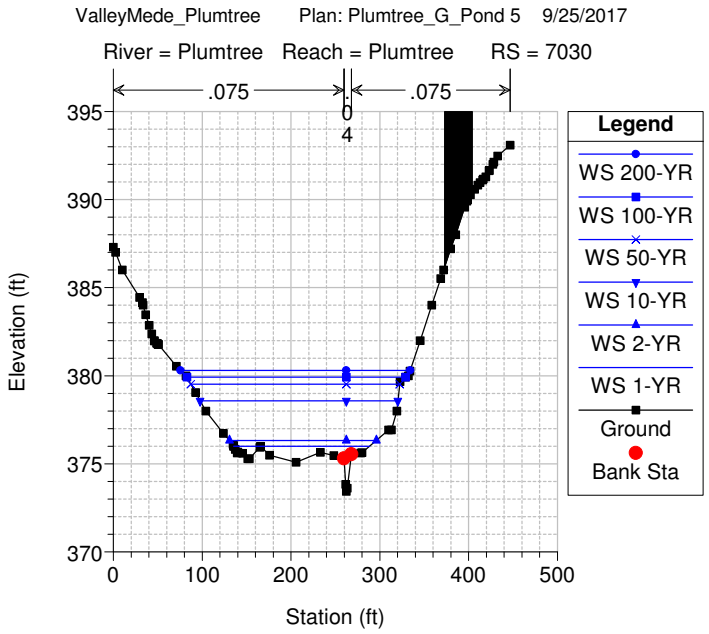

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 7954
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

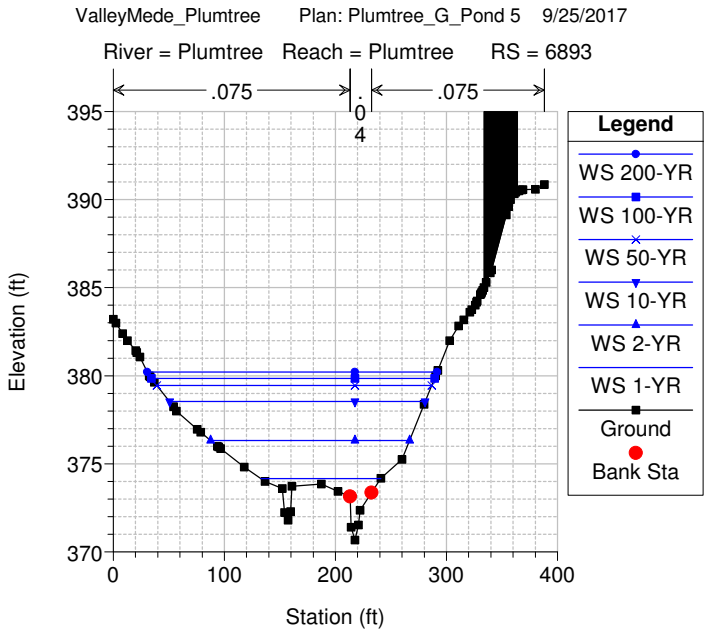

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 7800
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

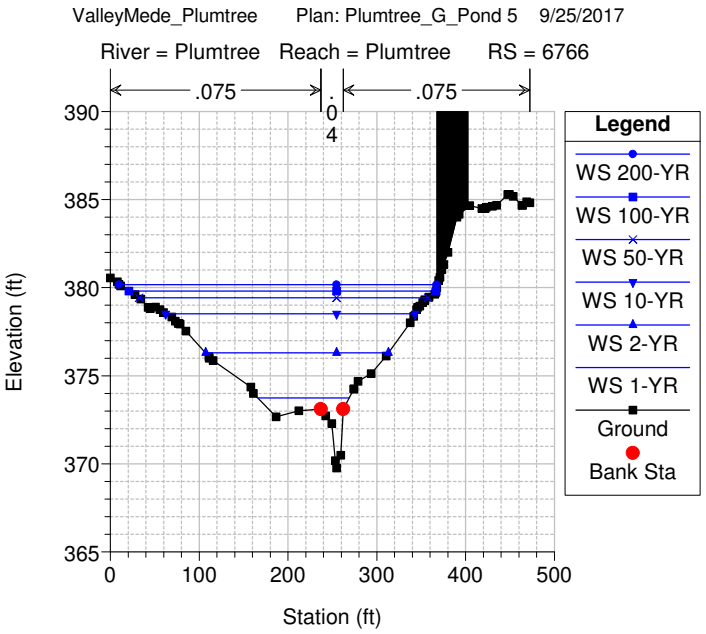

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 7548
.075
.085
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

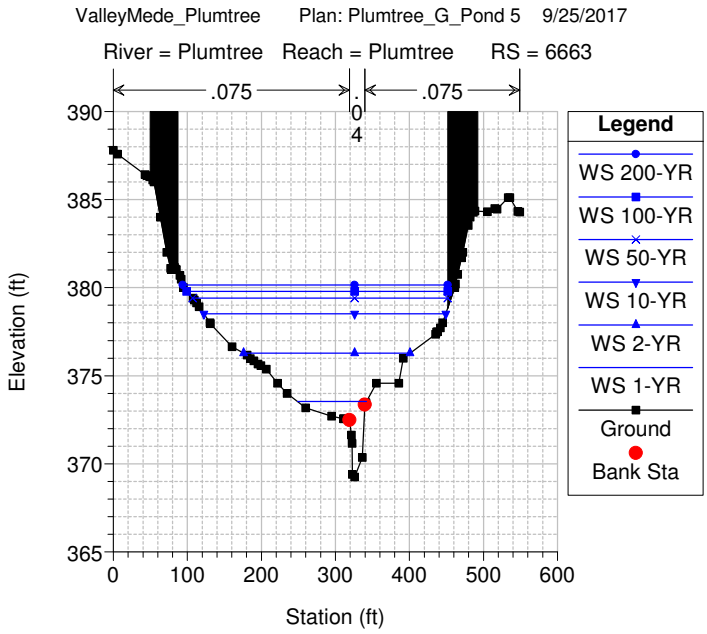

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 7367
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

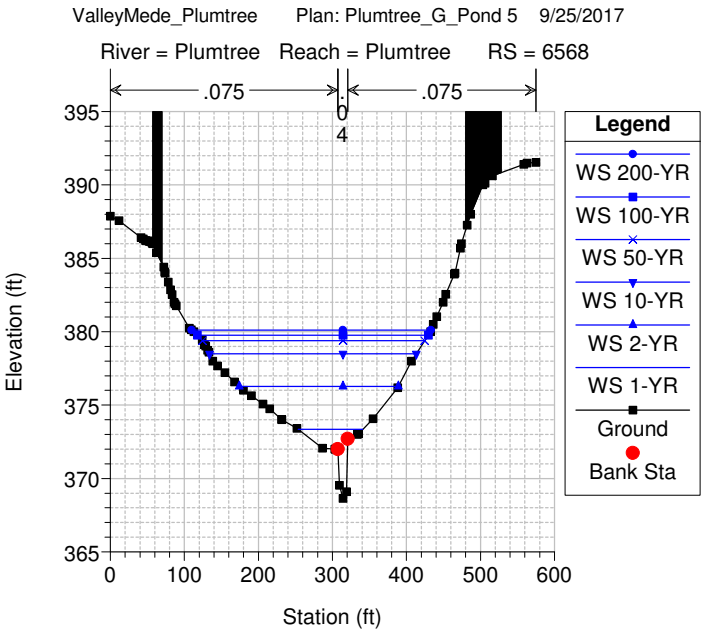

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 7216
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

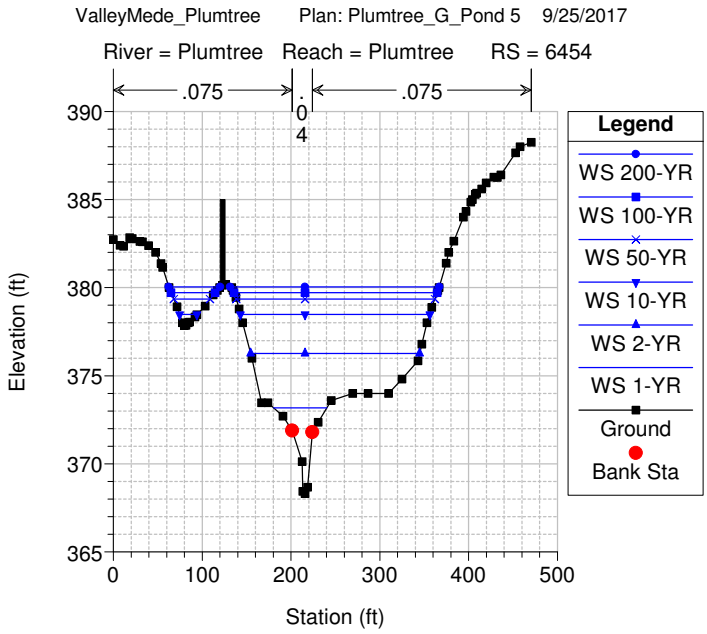

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 7030
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

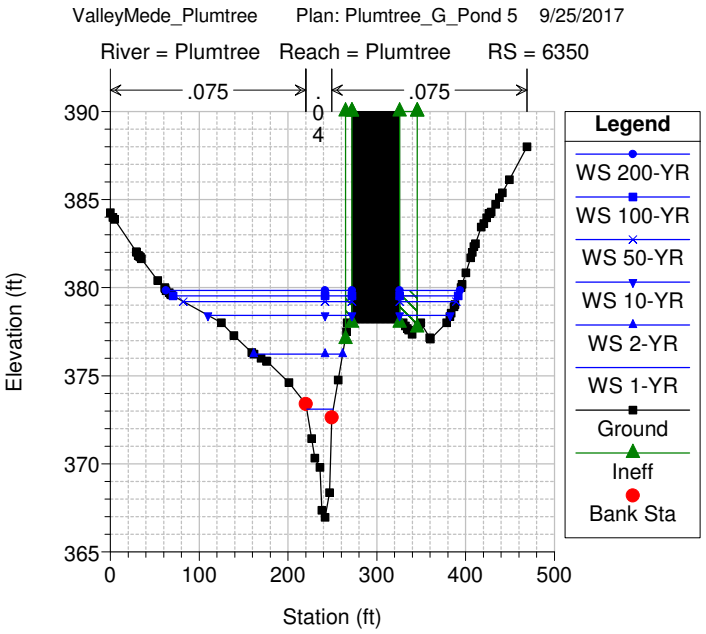

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6893
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

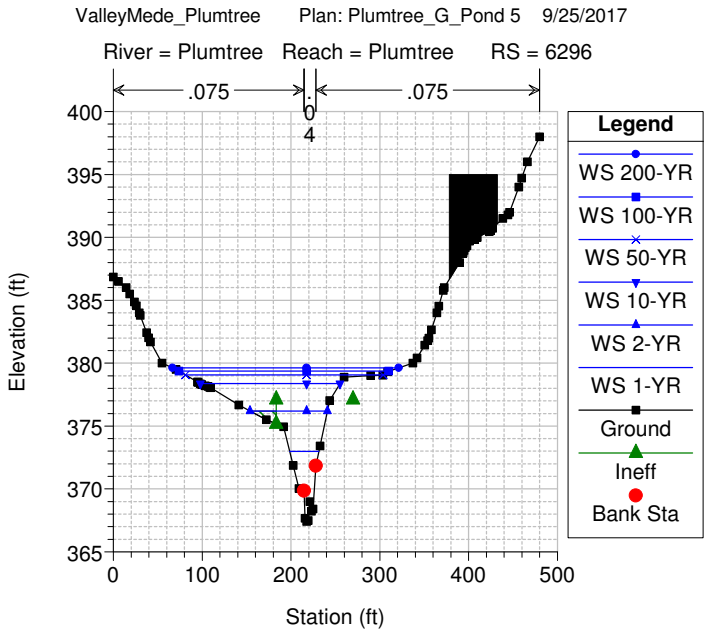

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6766
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

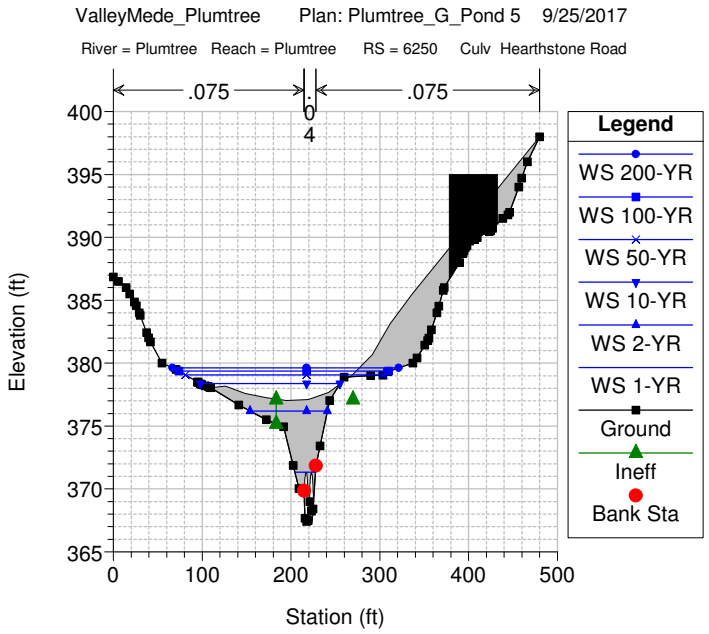

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6663
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

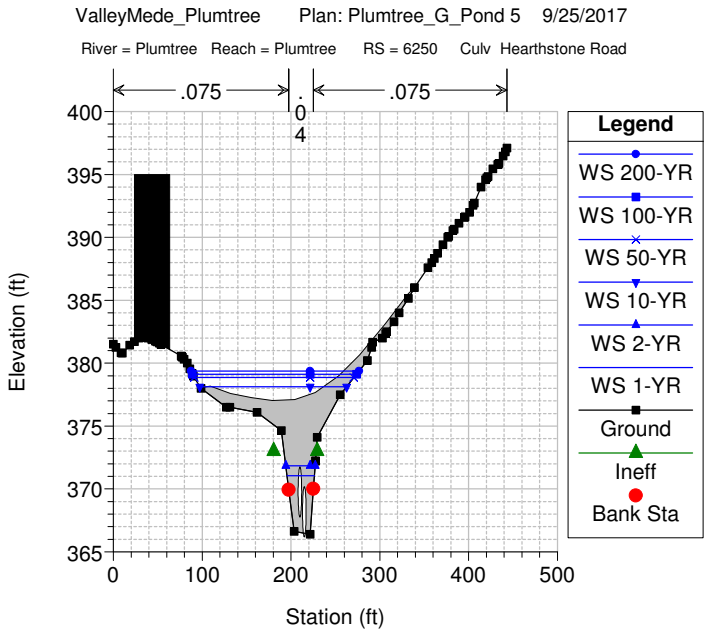

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6568
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

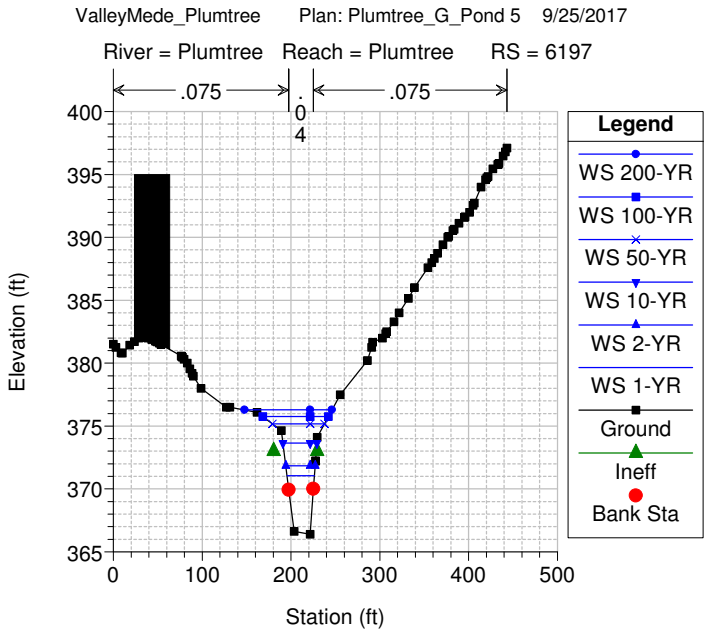

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6454
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

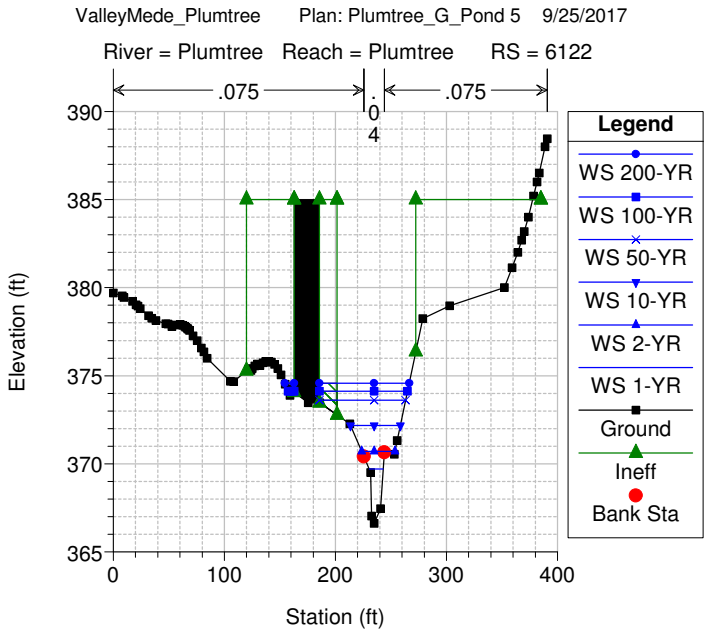

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6350
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

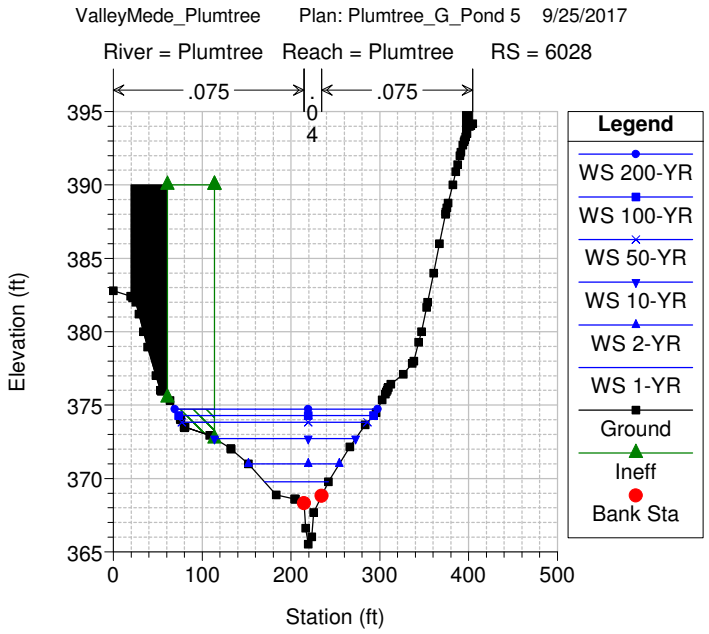

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6296
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

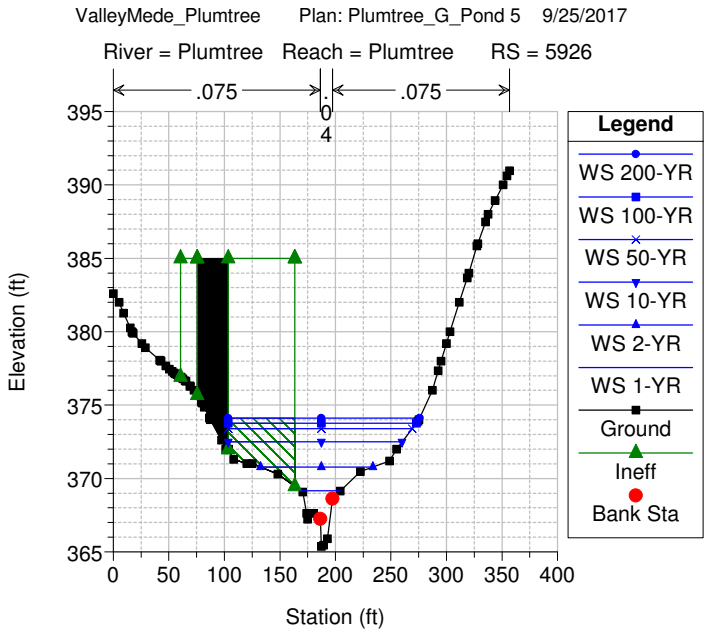

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

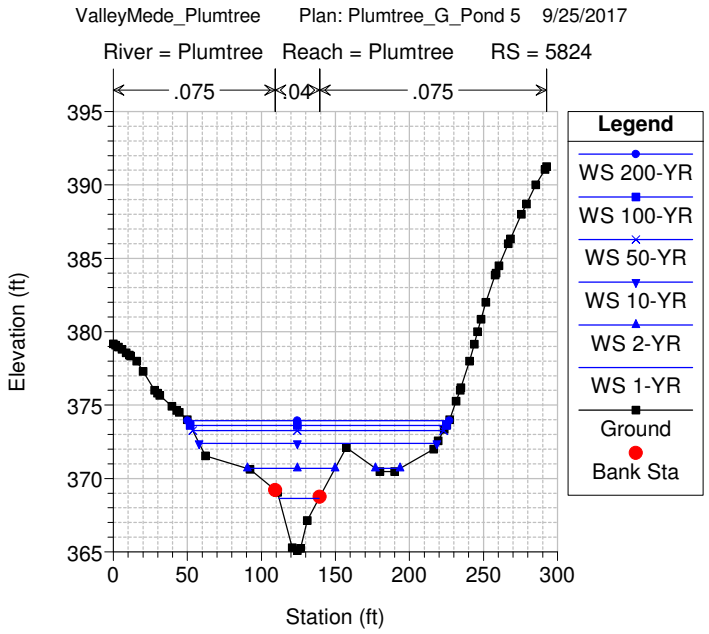

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

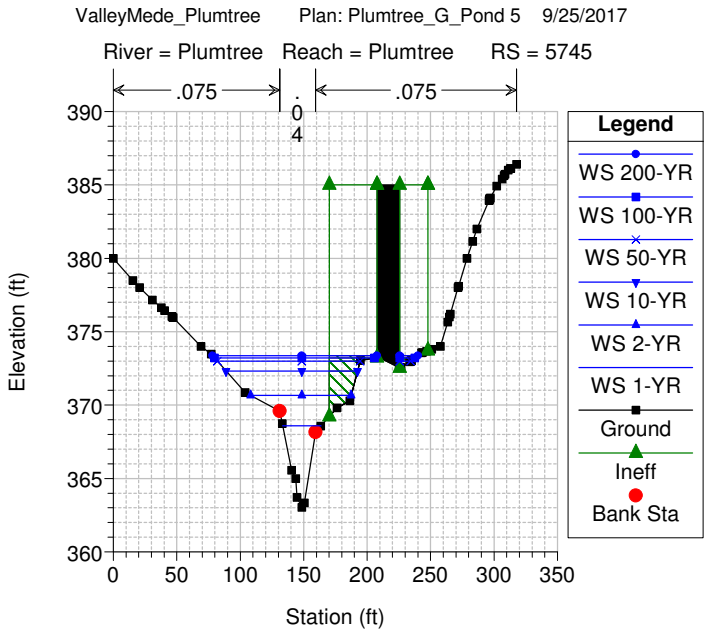

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6197
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

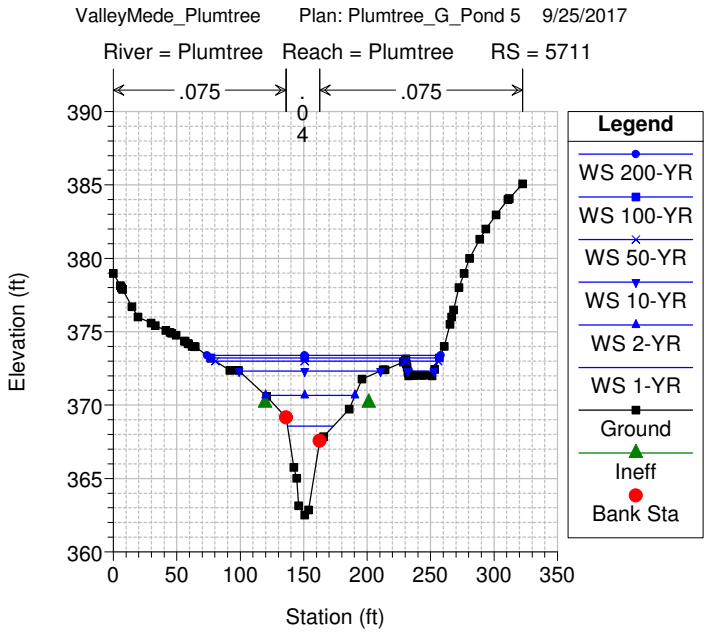

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6122
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

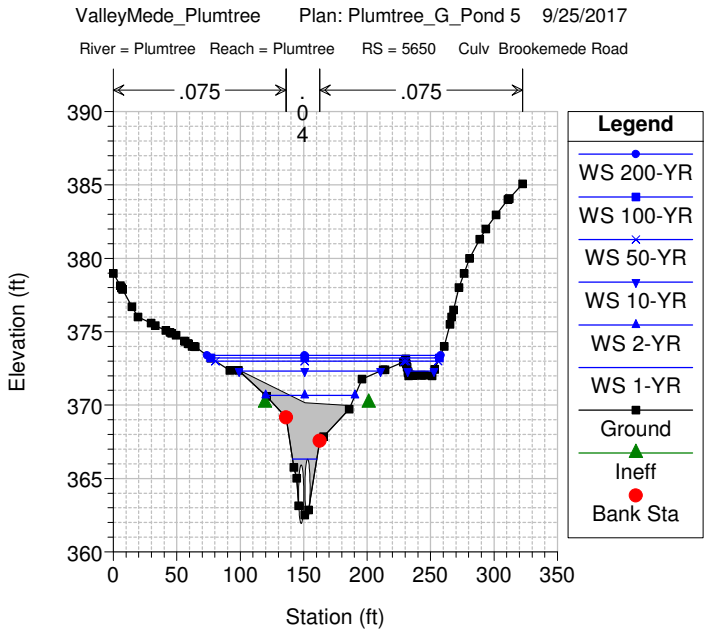

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 6028
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

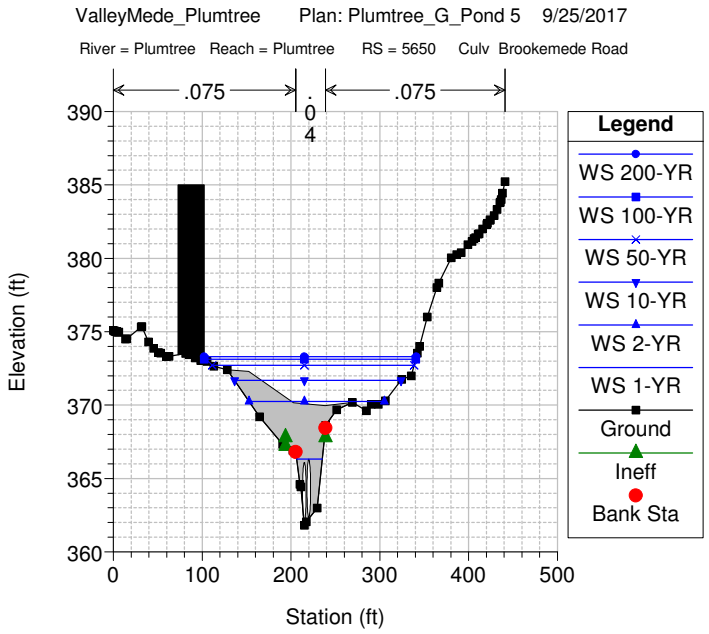

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5926
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

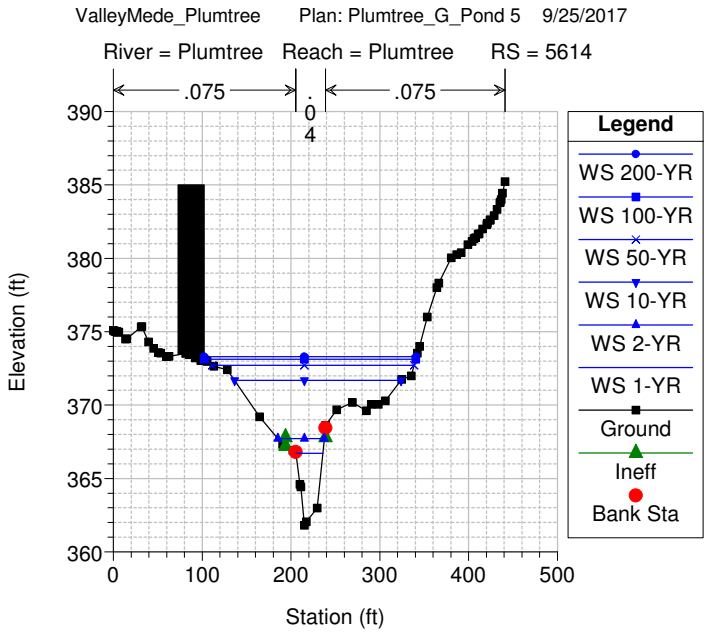

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5824
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

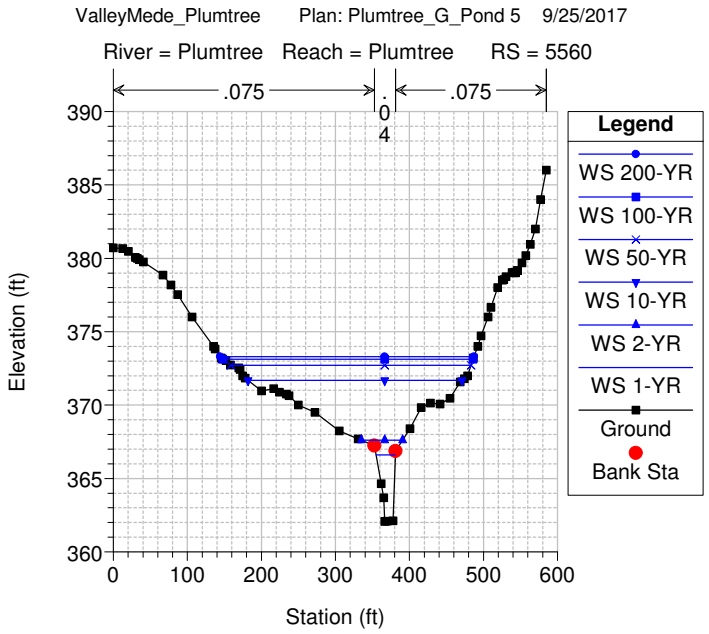

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5745
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

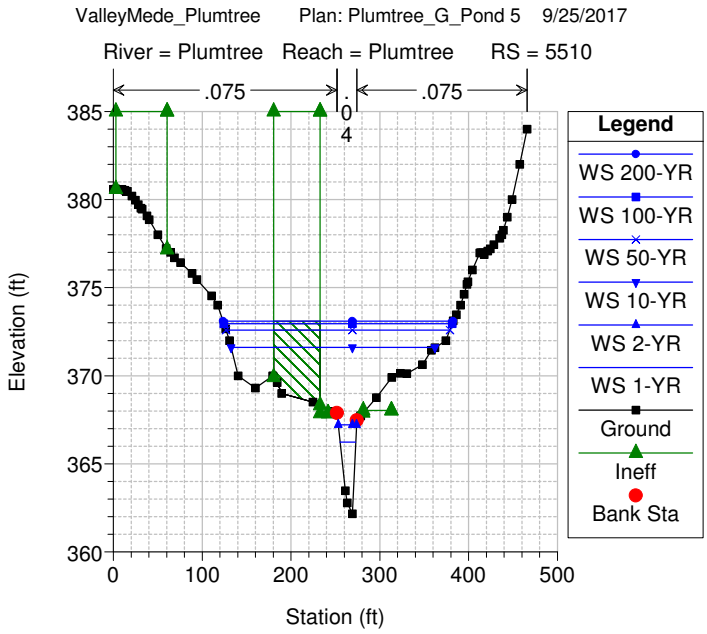

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5711
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

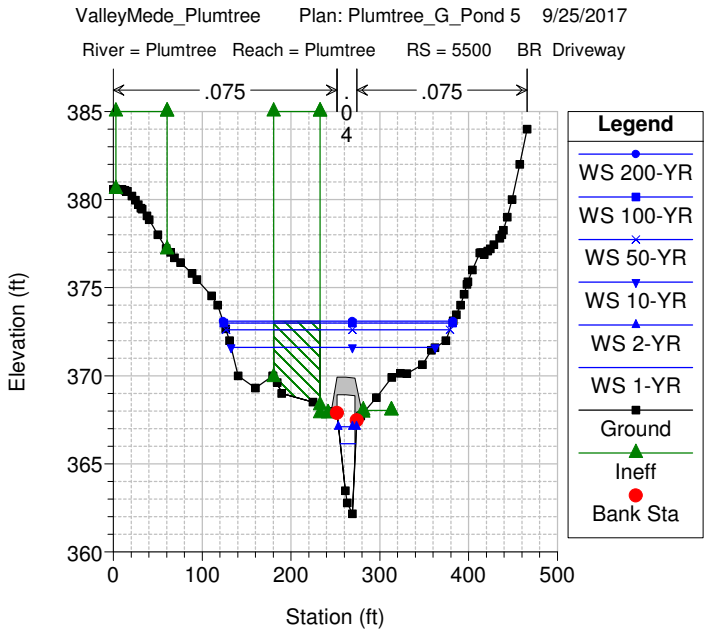

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

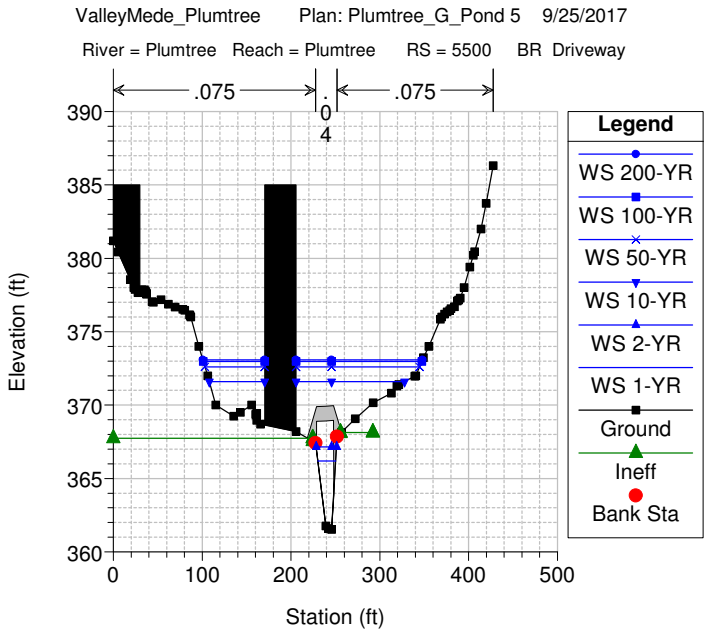

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

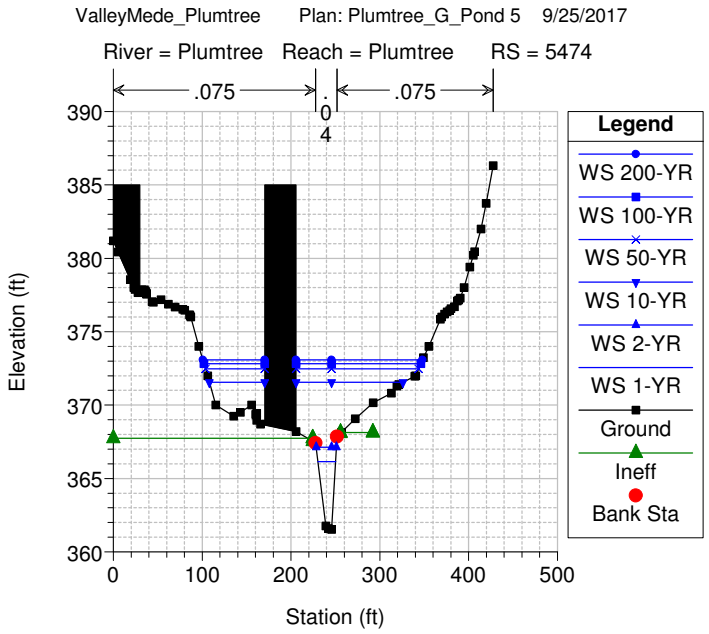

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5614
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

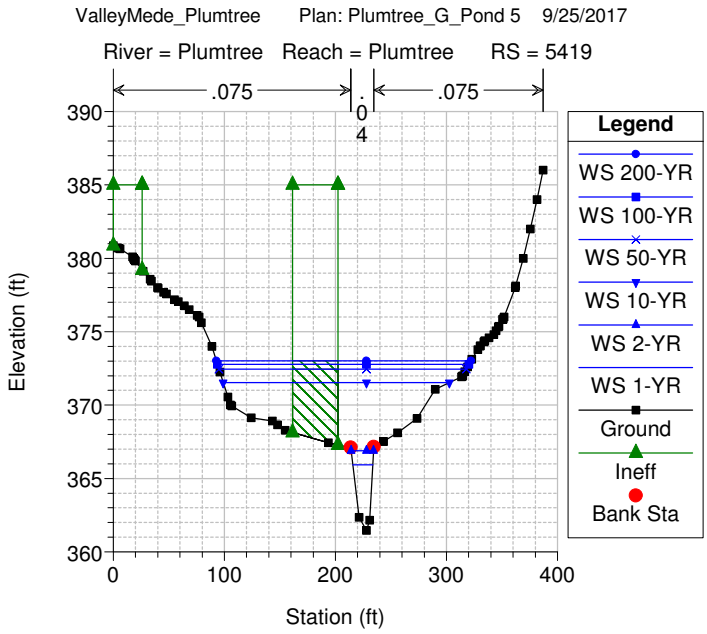

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5560
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

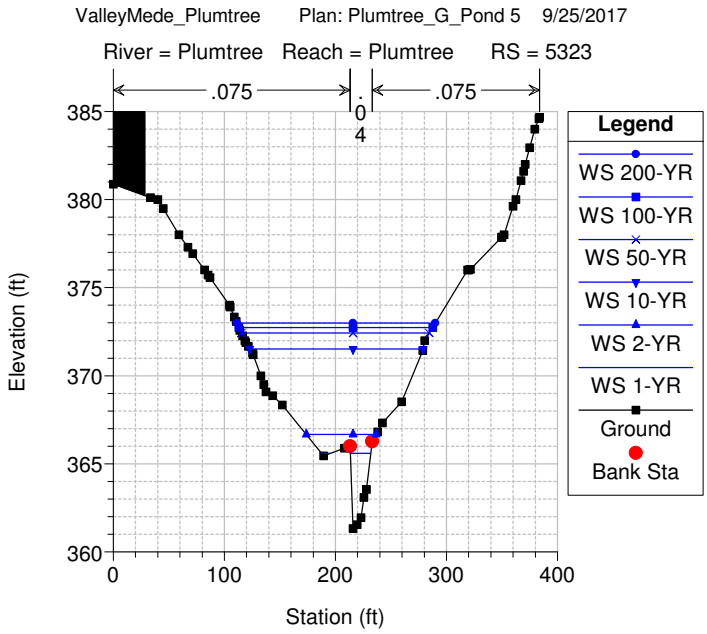

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5510
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

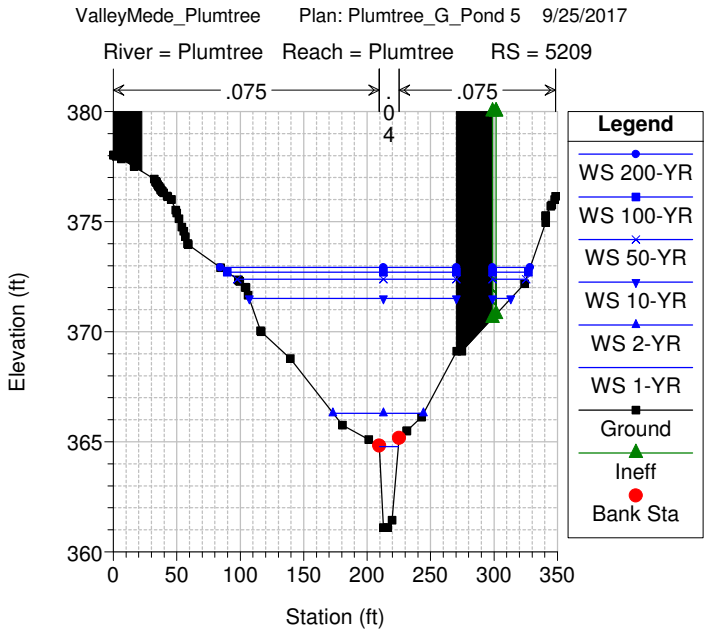

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

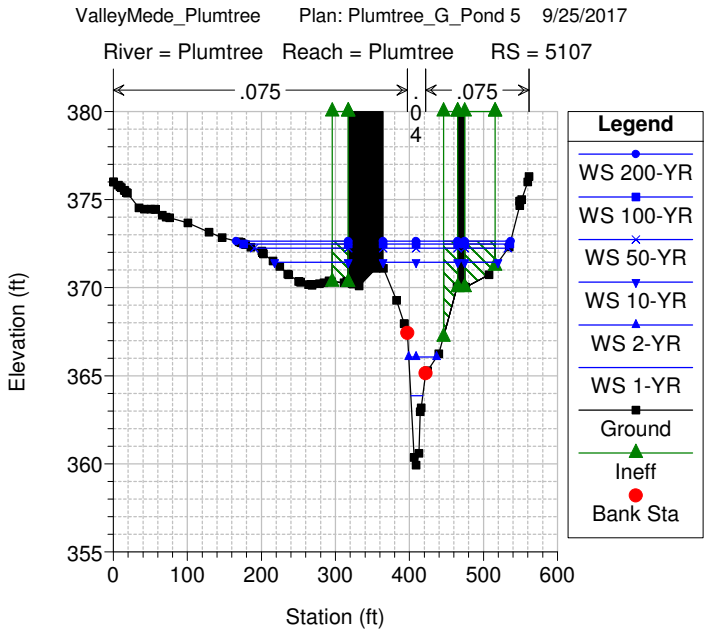

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

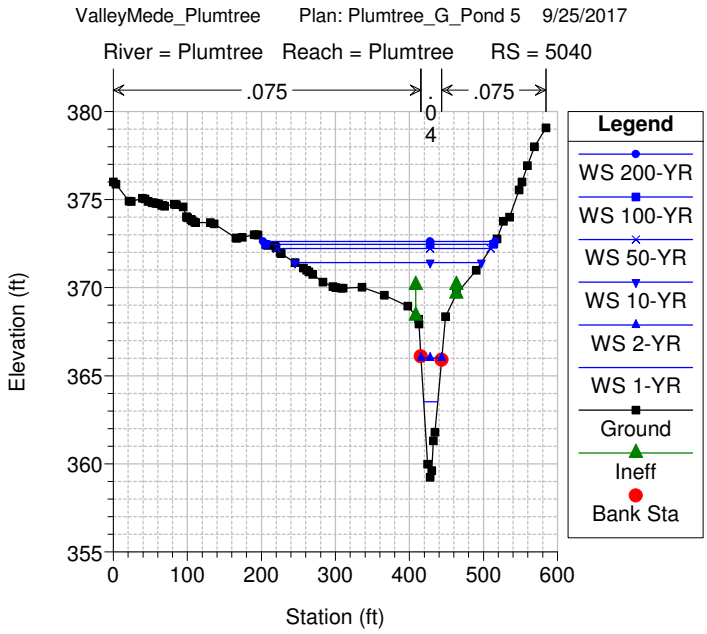

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5474
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

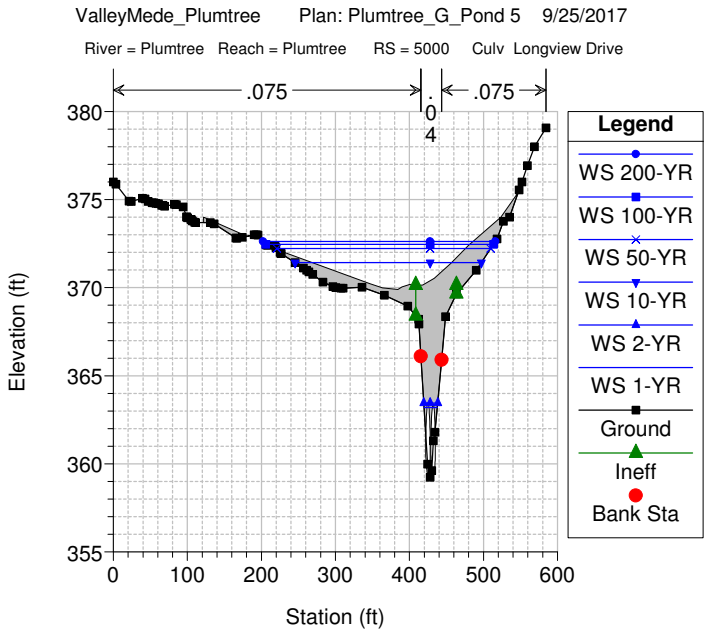

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5419
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5323
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5209
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

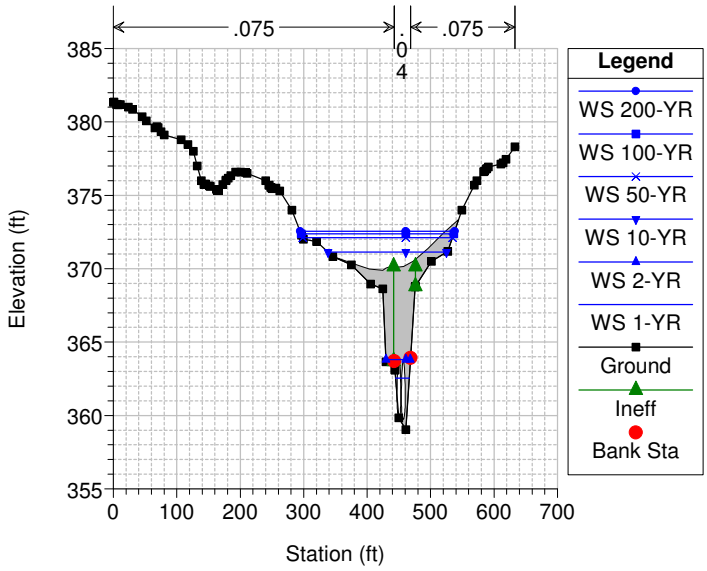

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5107
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5040
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

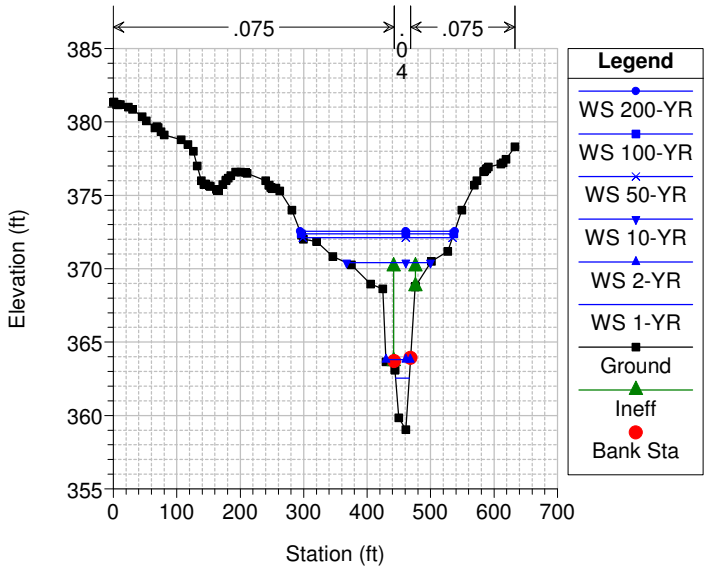
ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017

River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive



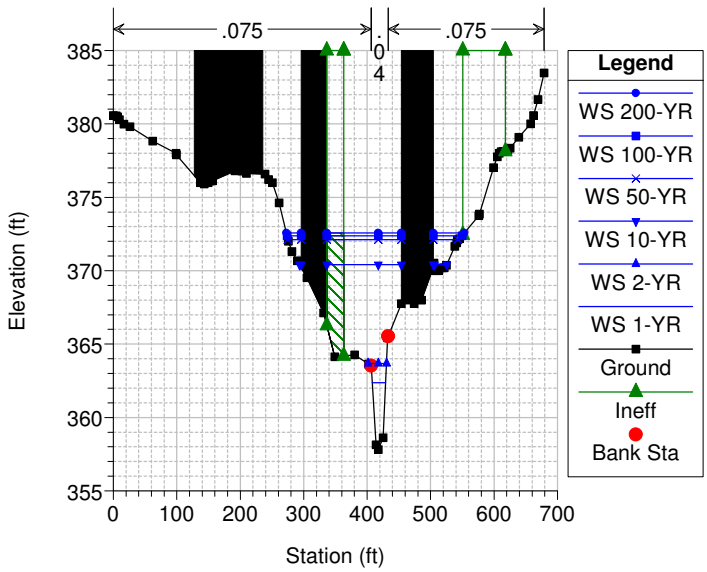
ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017

River = Plumtree Reach = Plumtree RS = 4932



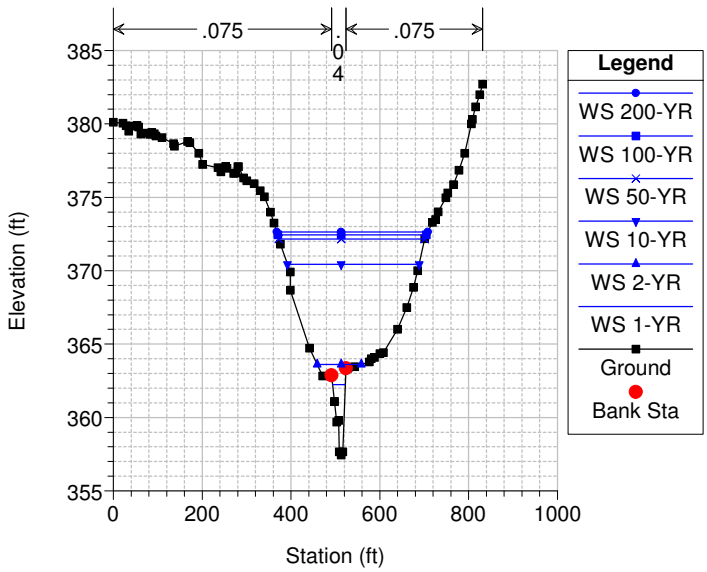
ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017

River = Plumtree Reach = Plumtree RS = 4845



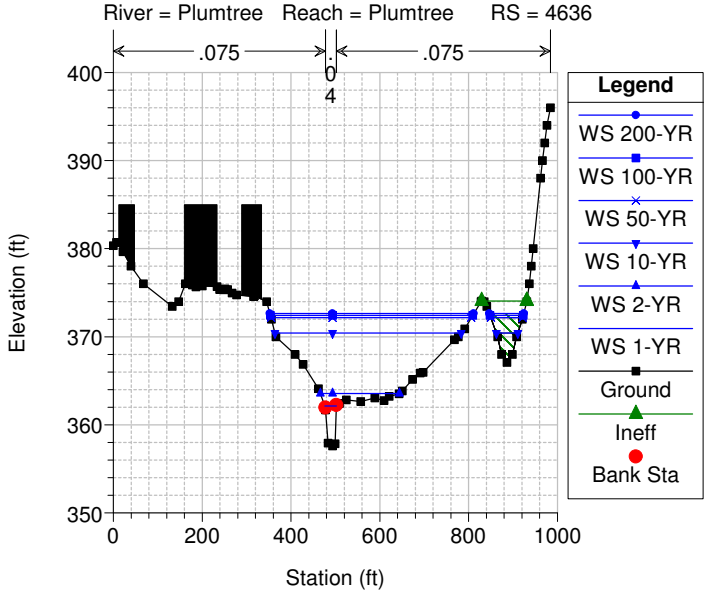
ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017

River = Plumtree Reach = Plumtree RS = 4745



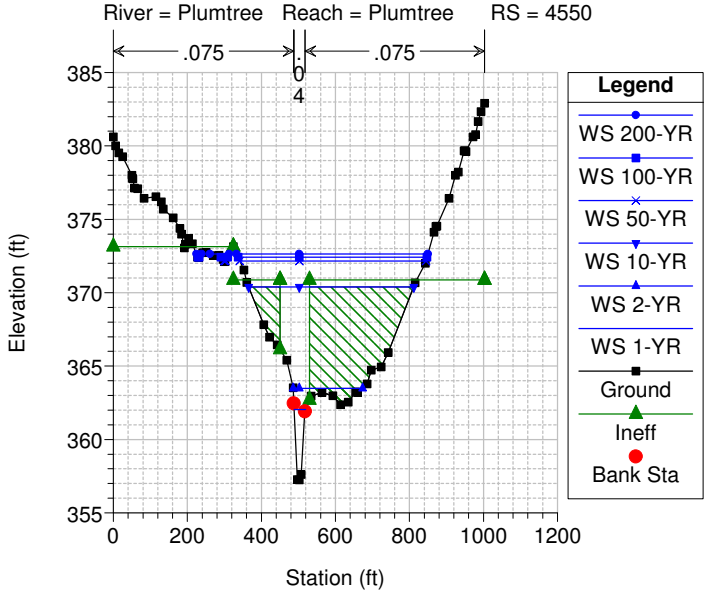
ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017

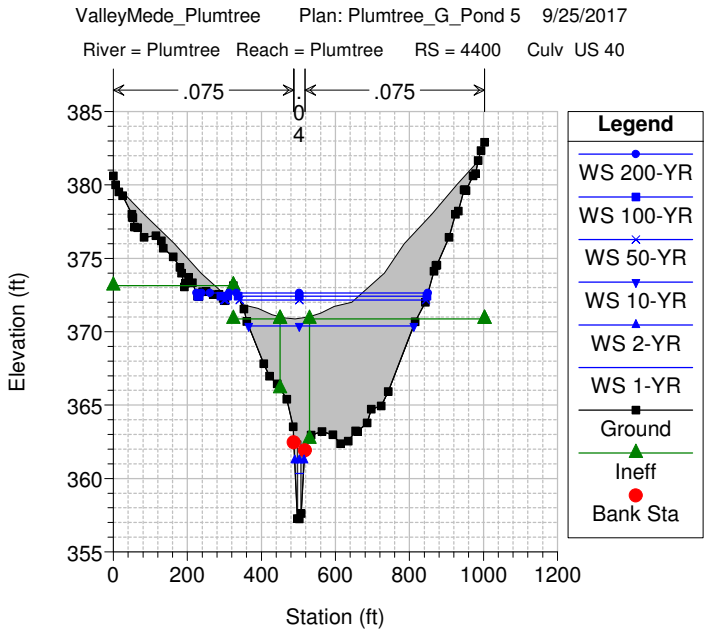
River = Plumtree Reach = Plumtree RS = 4636

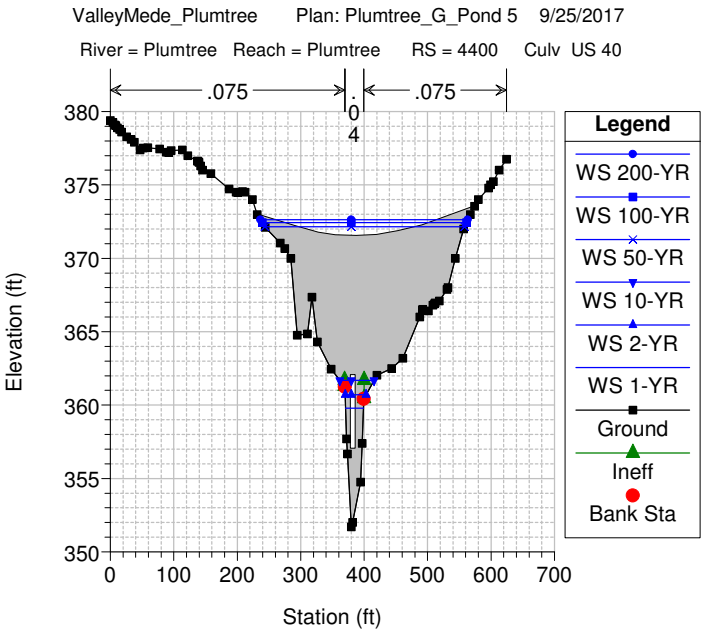


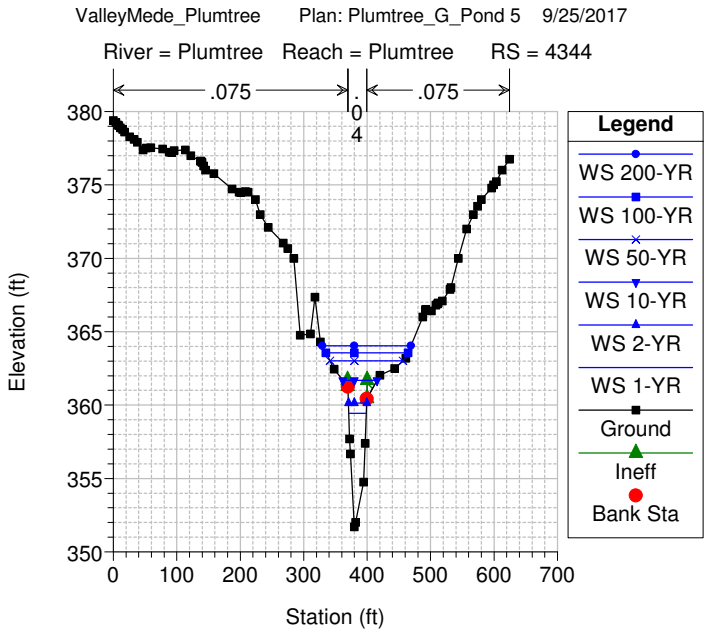
ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017

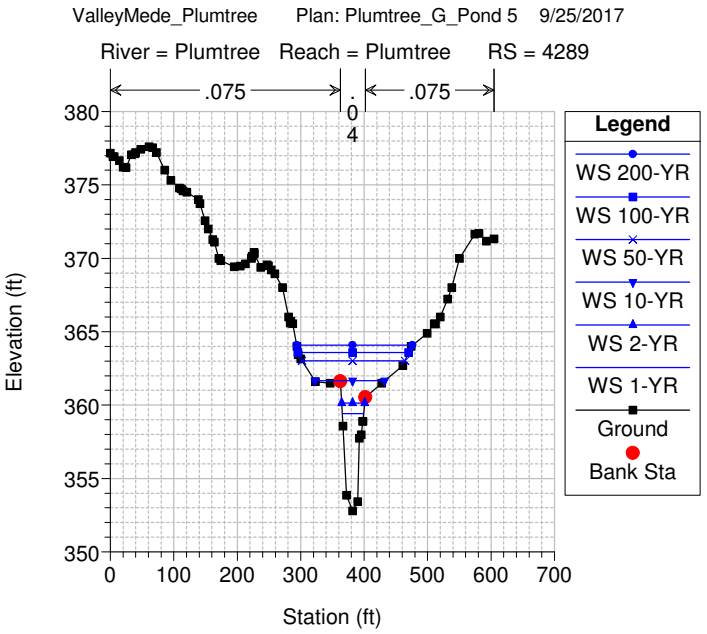
River = Plumtree Reach = Plumtree RS = 4550

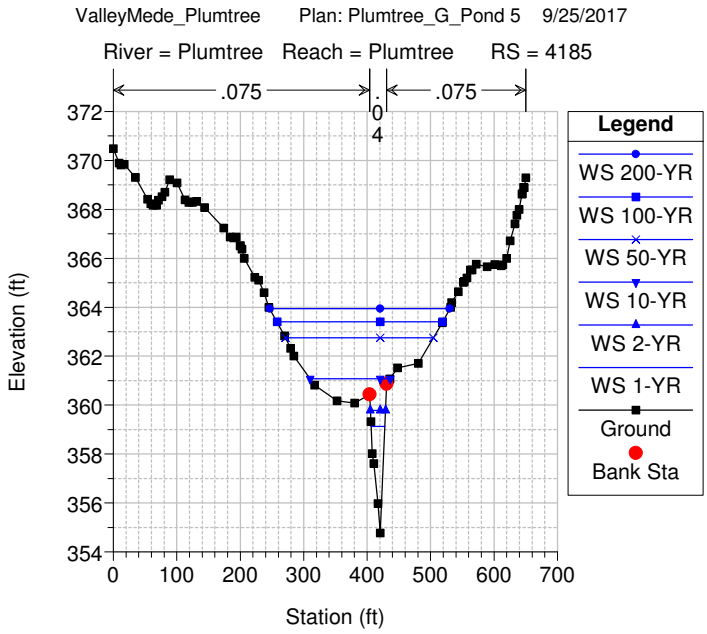


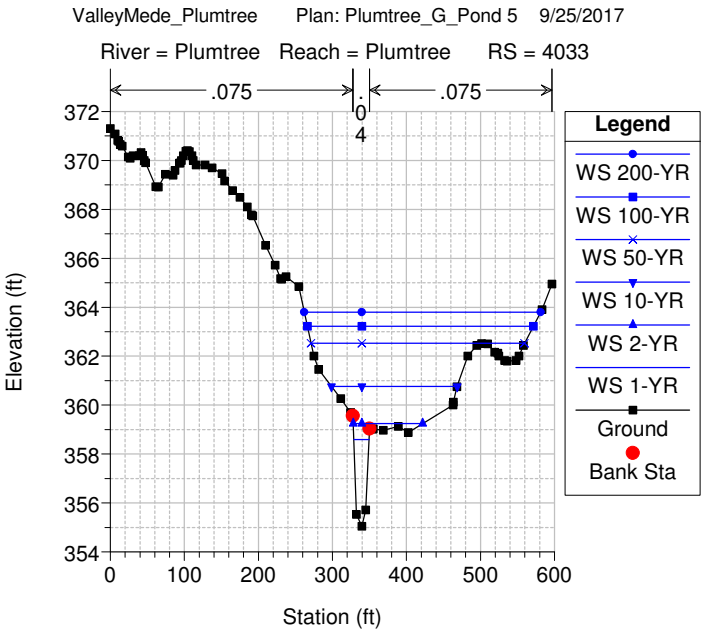

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

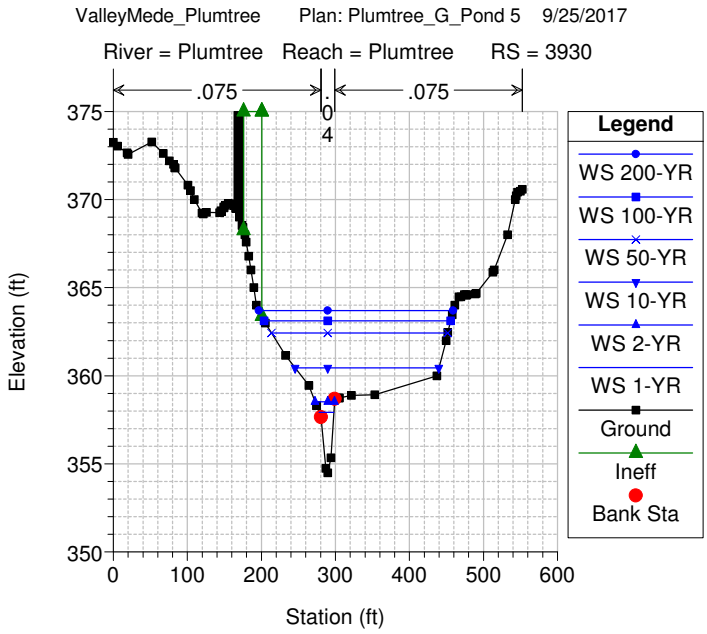

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

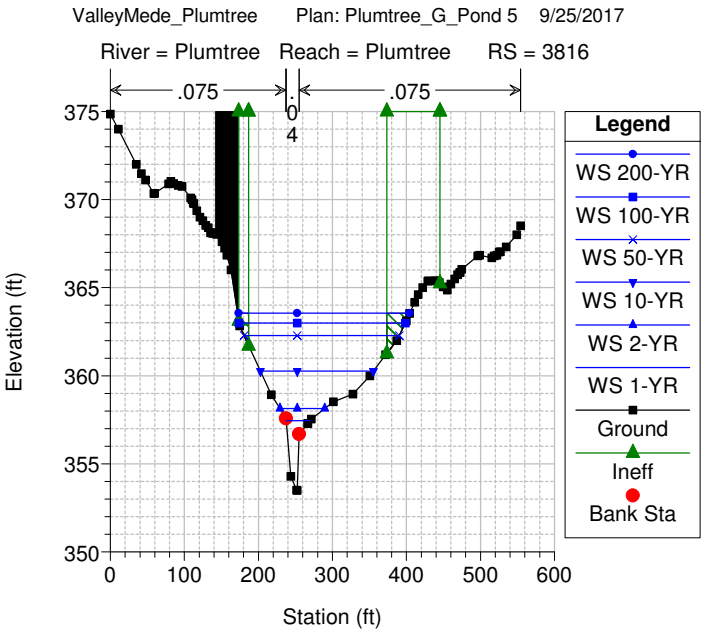

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 4344
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

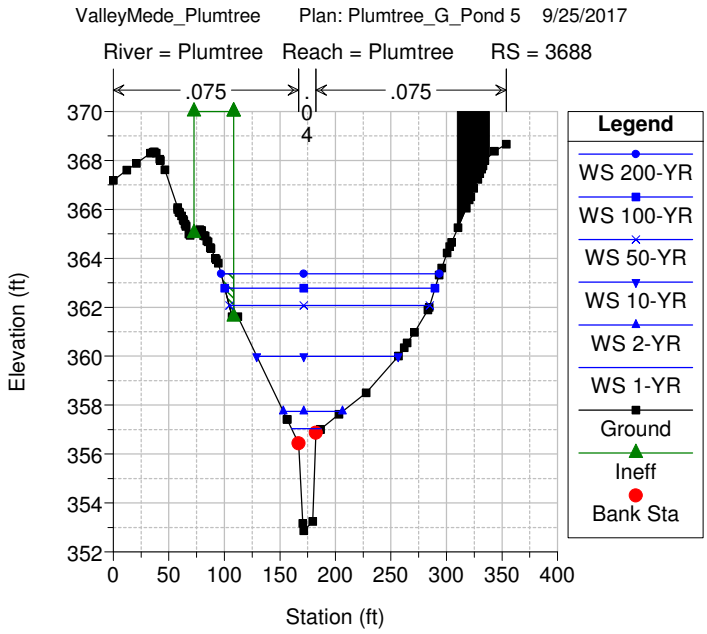

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 4289
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

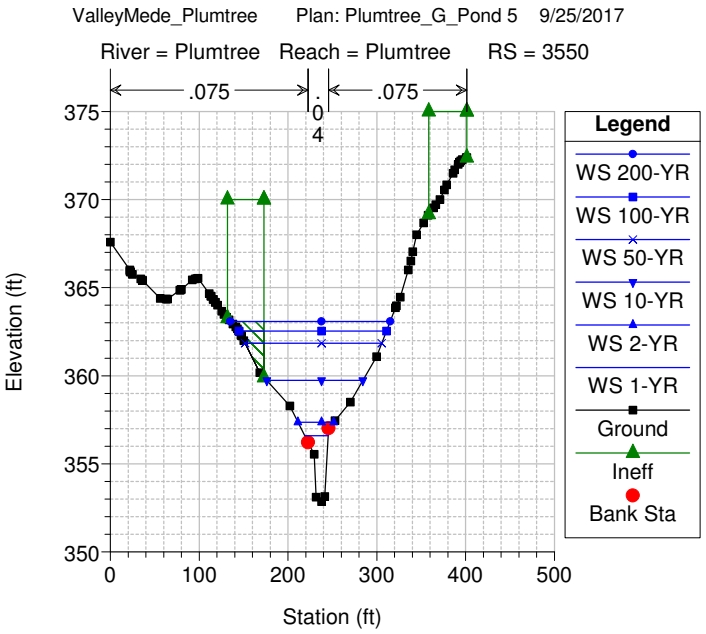

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 4185
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

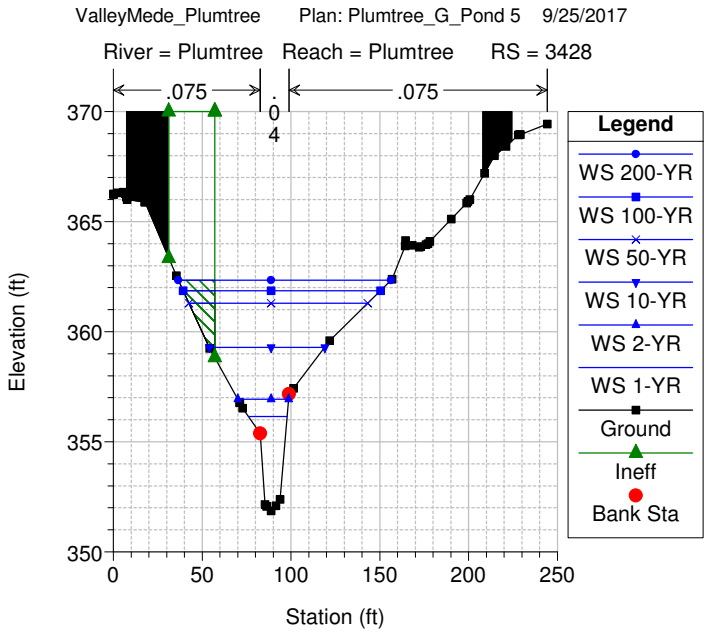

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 4033
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

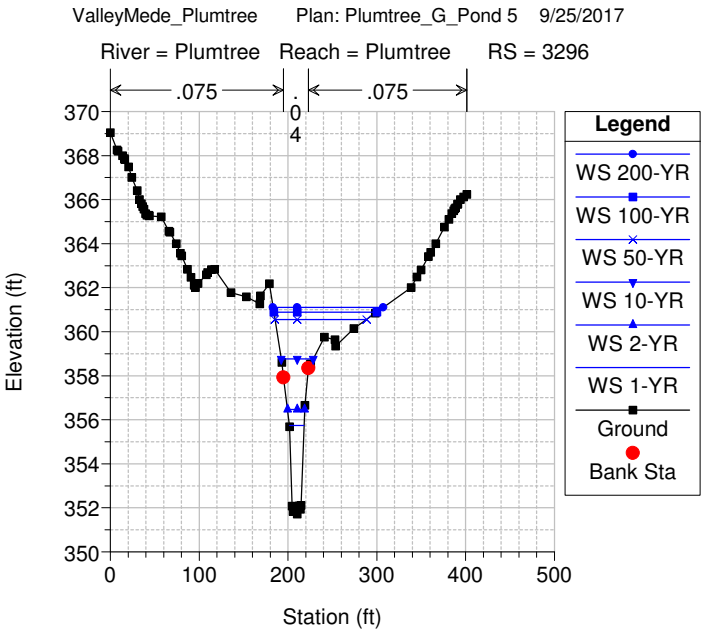

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 3930
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

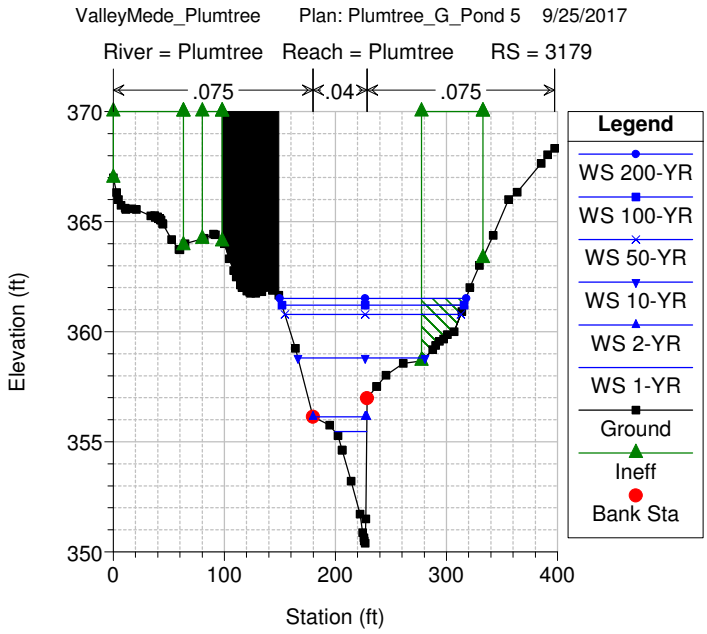

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 3816
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

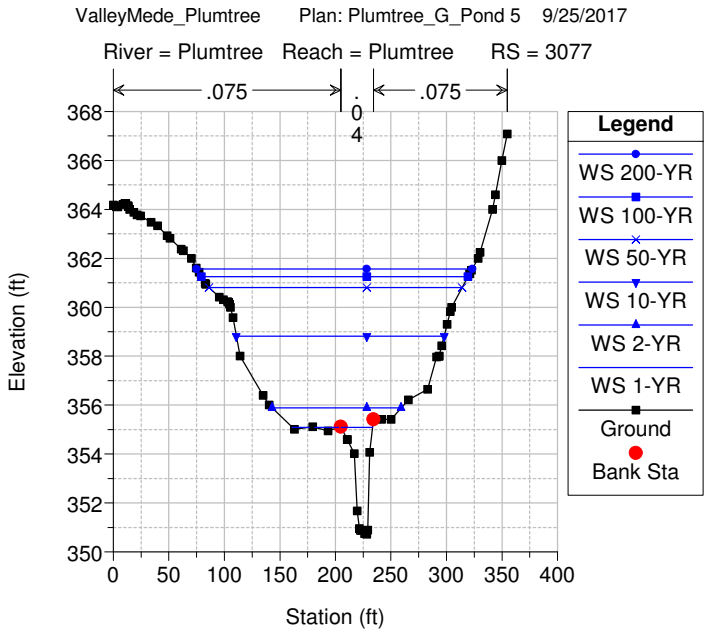

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 3688
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

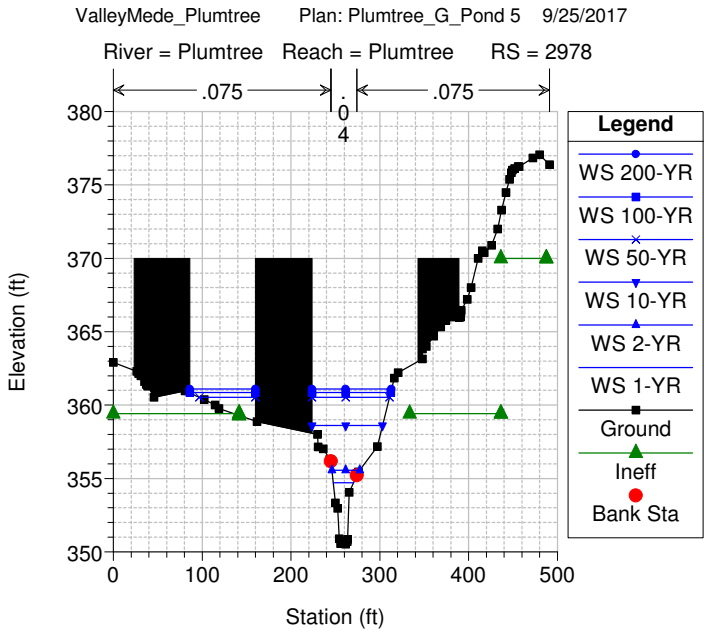

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 3550
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

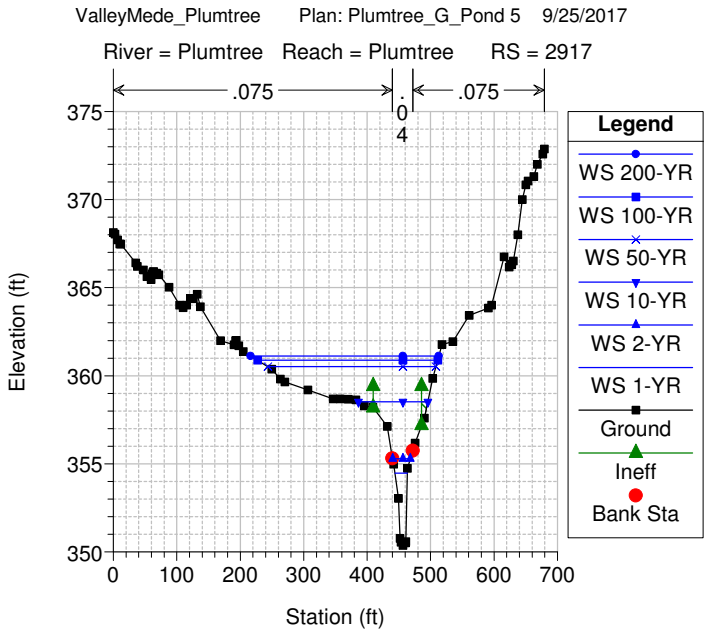

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 3428
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

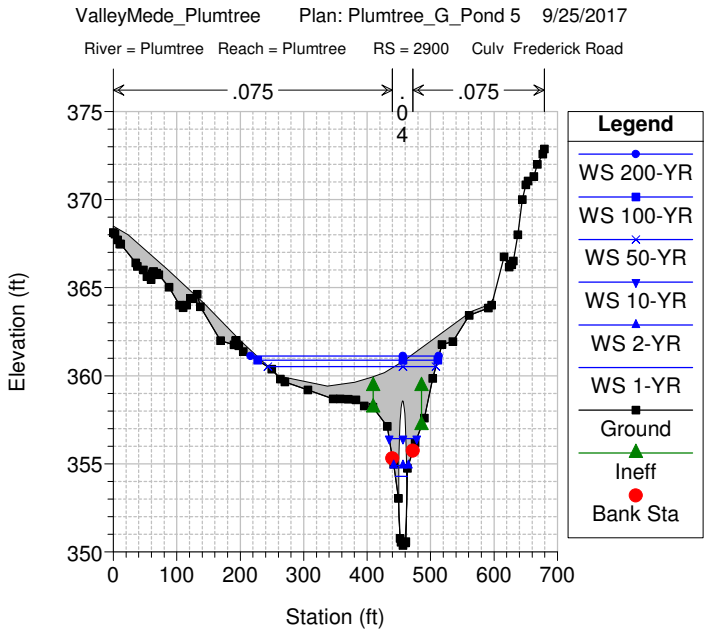

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 3296
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

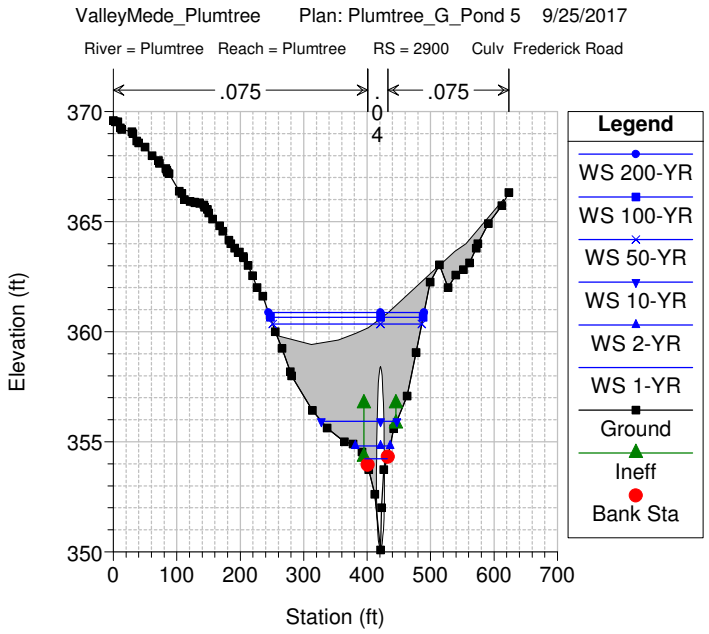

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 3179
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

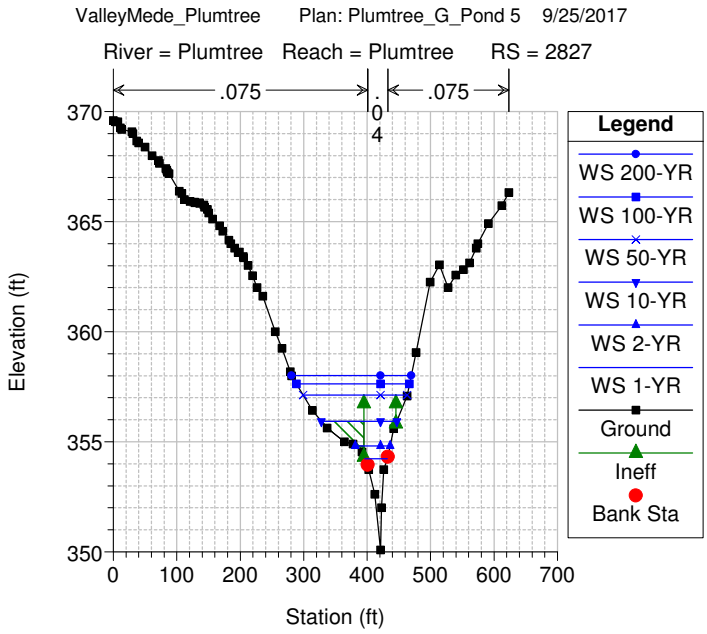

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 3077
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

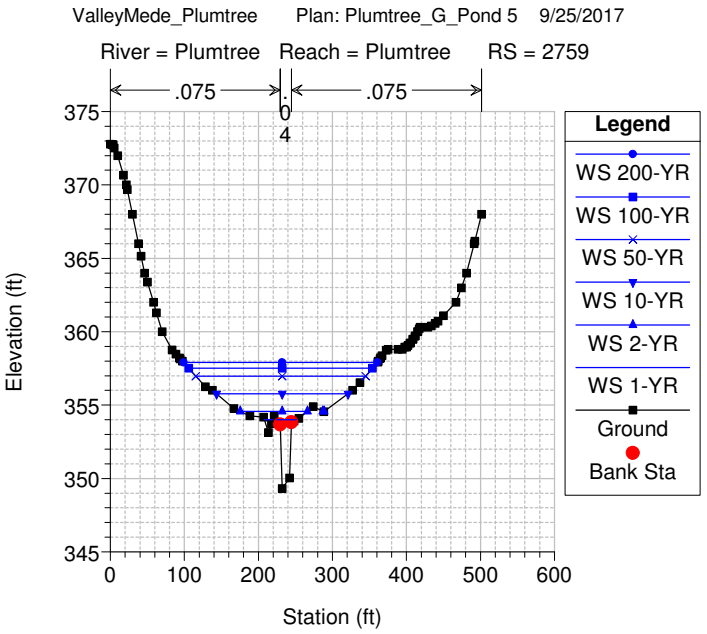

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 2978
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

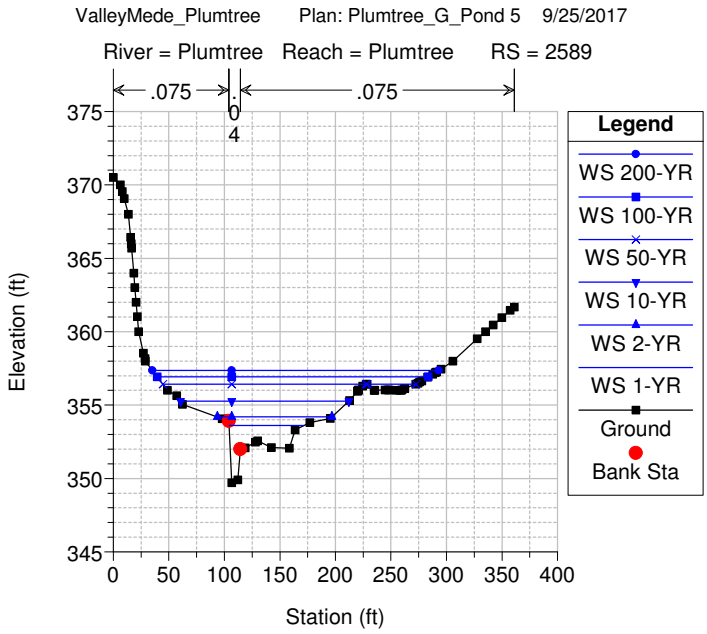

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 2917
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

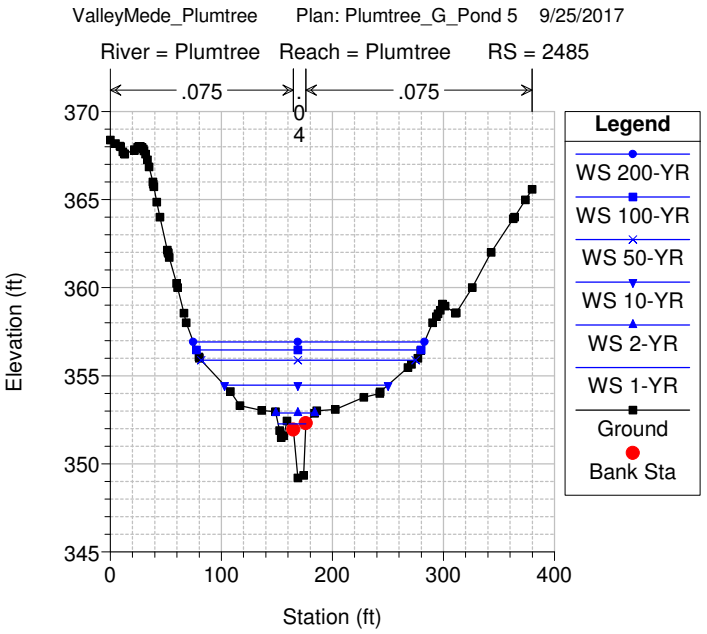

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

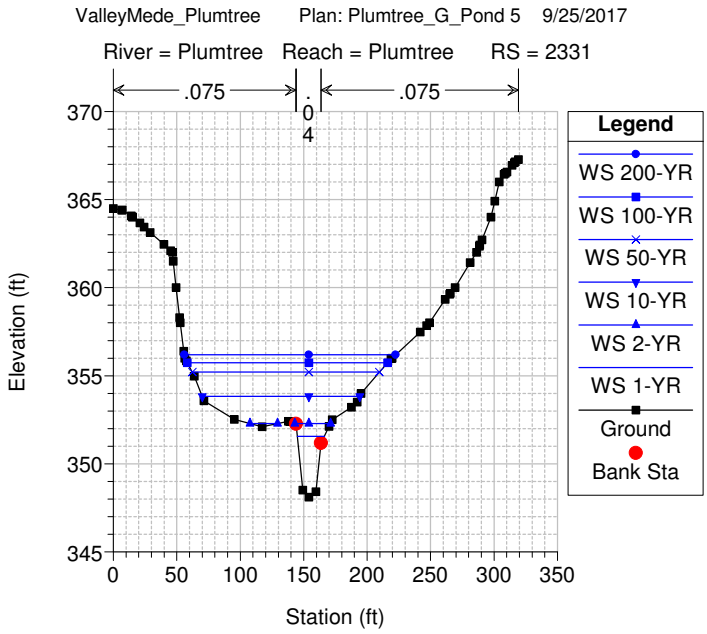

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

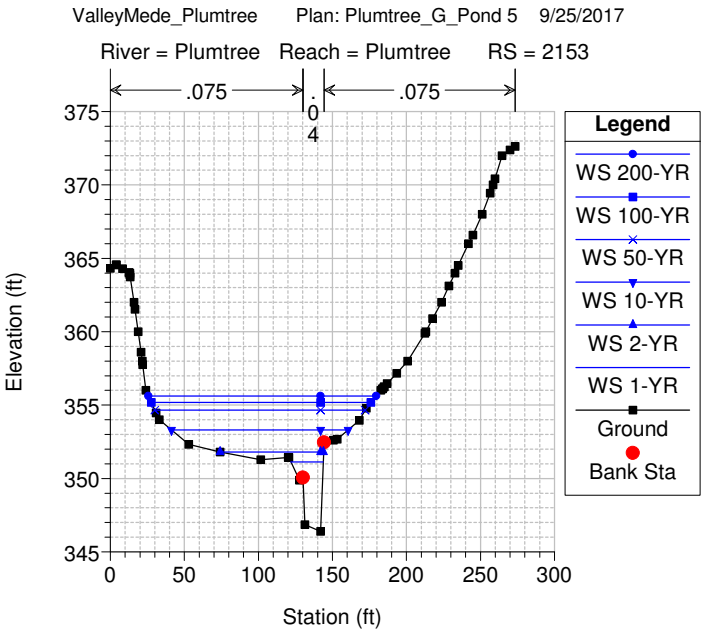

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 2827
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

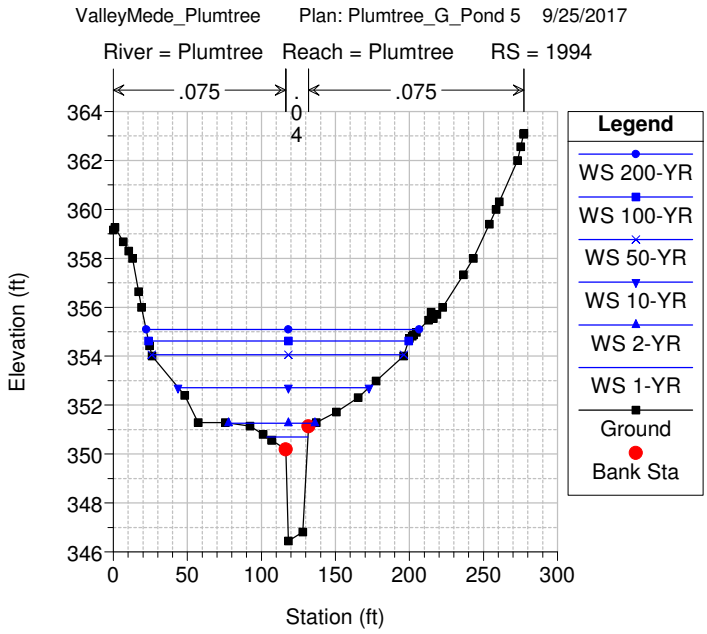

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 2759
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

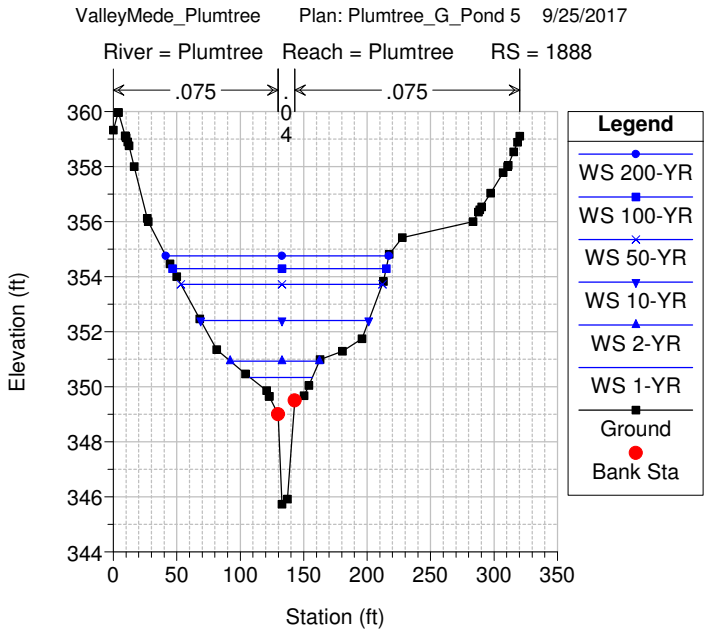

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 2589
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

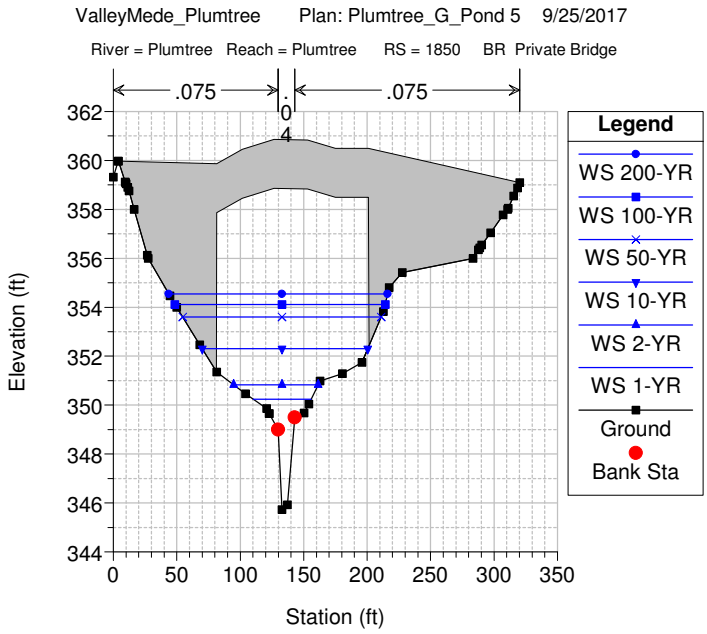

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 2485
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

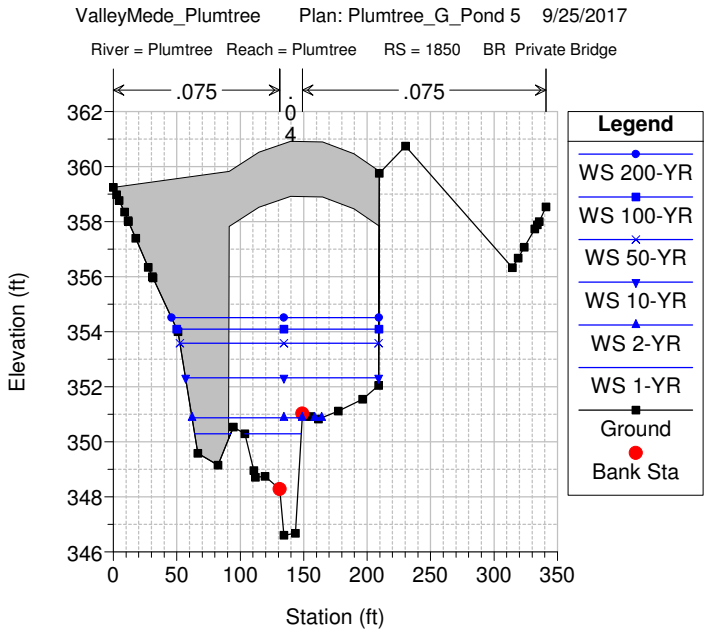

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 2331
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

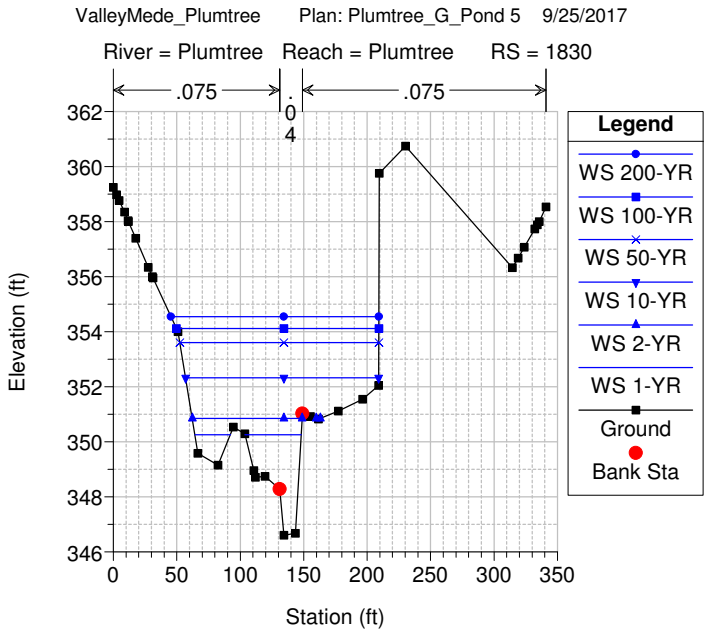

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 2153
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

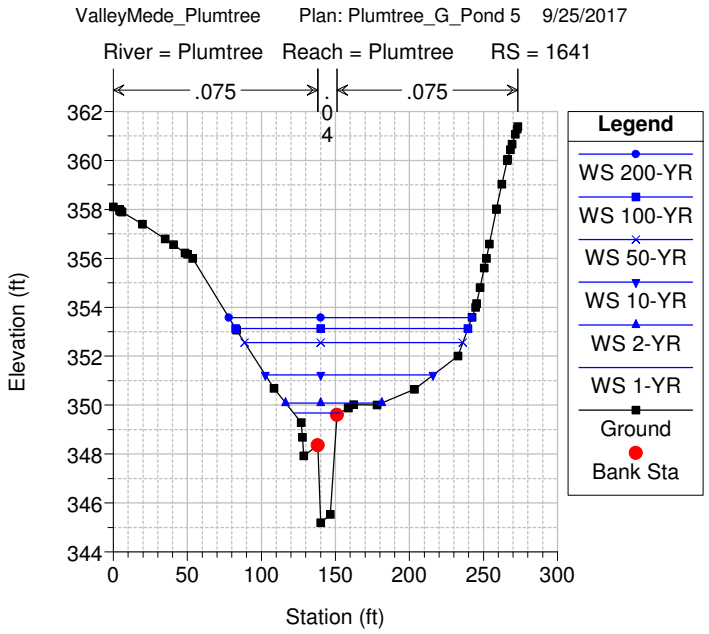

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 1994
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

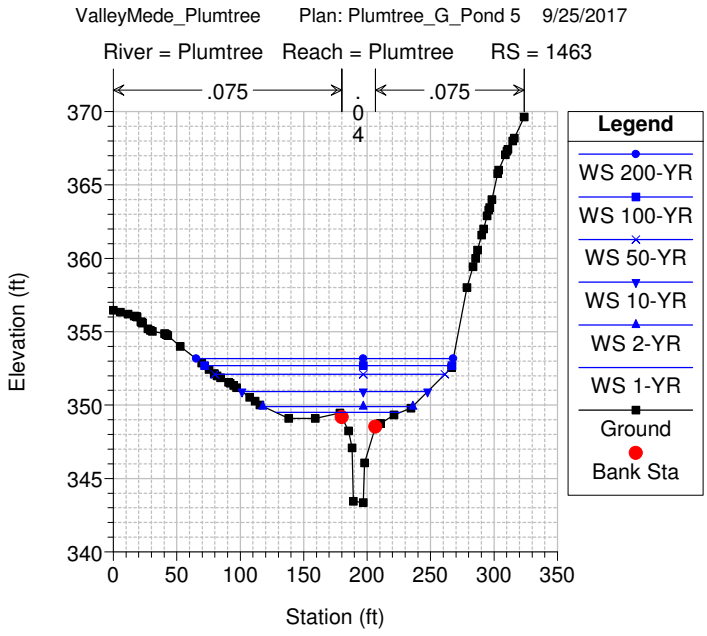

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 1888
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

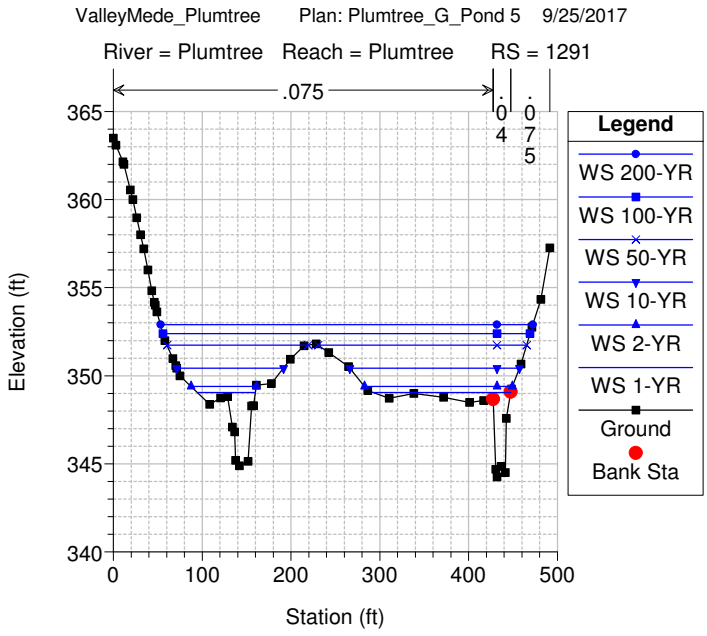

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

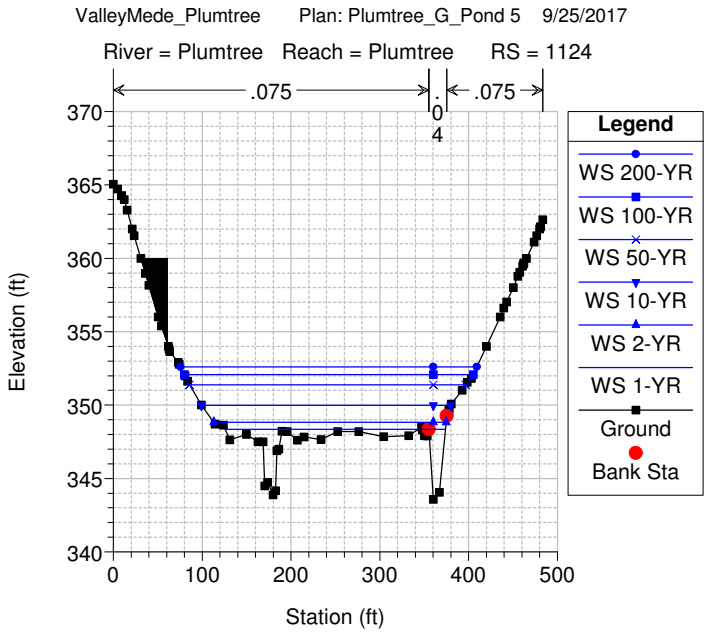

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

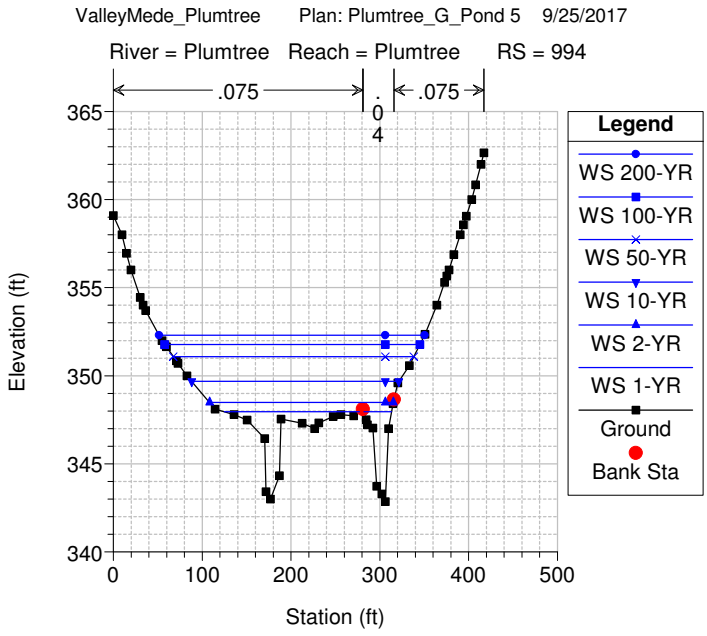

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 1830
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

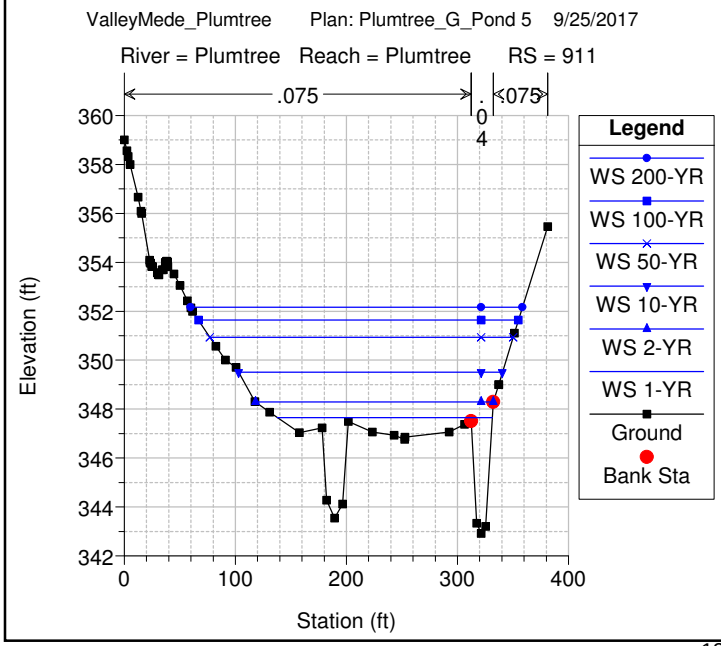

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 1641
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

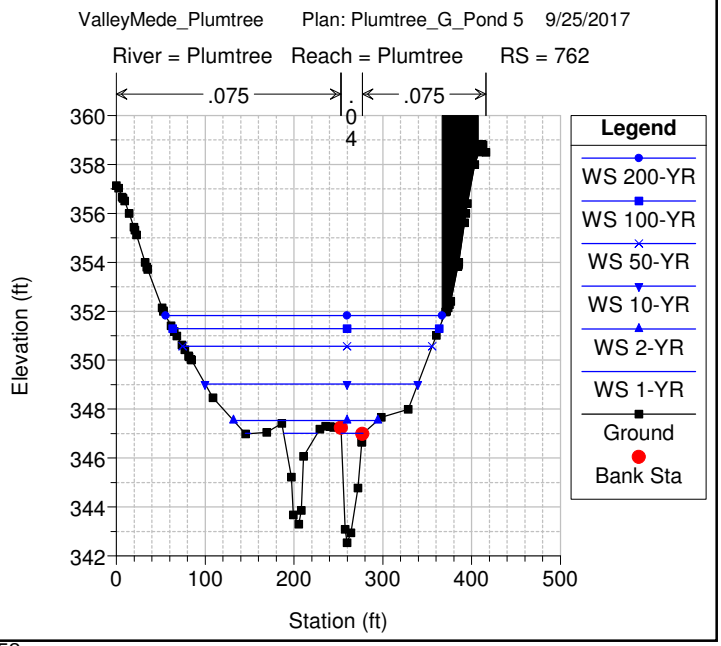

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 1463
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

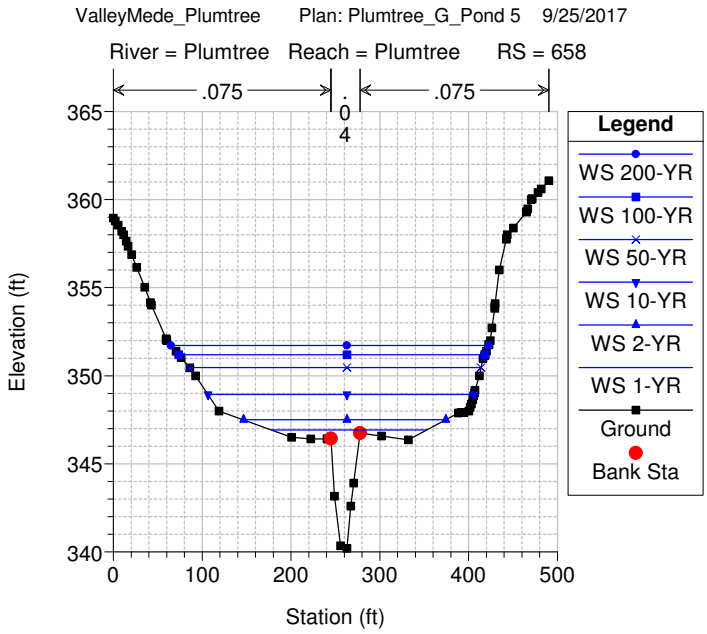

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 1291
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

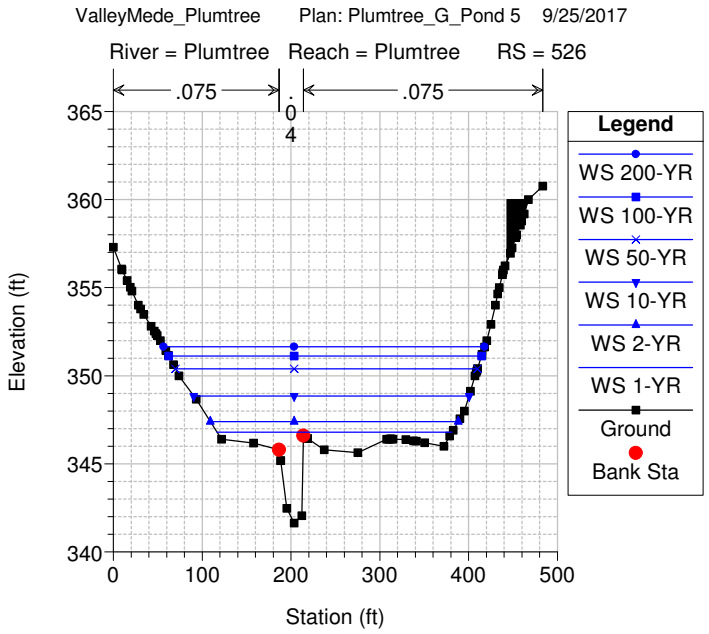

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 1124
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

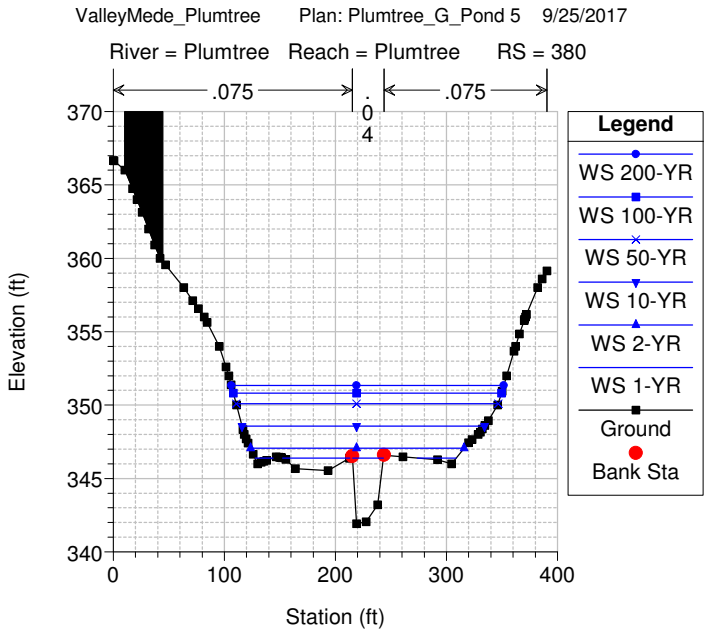

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 994
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

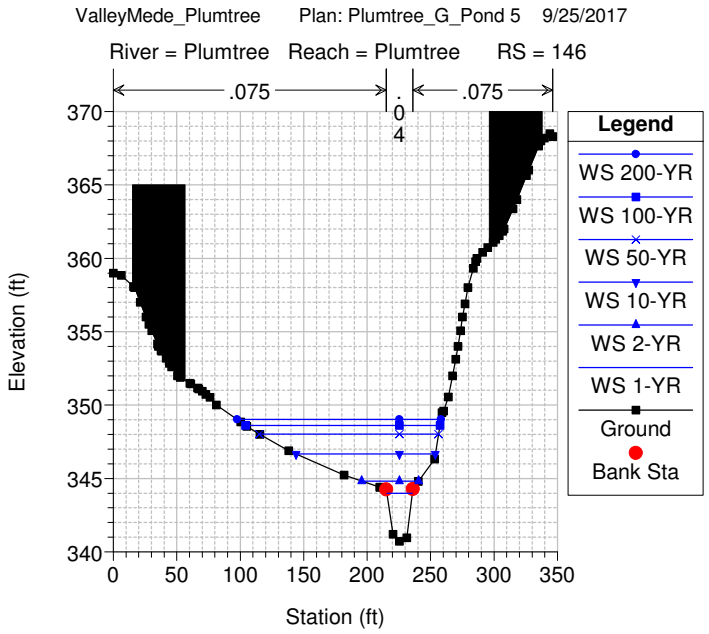

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 911
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

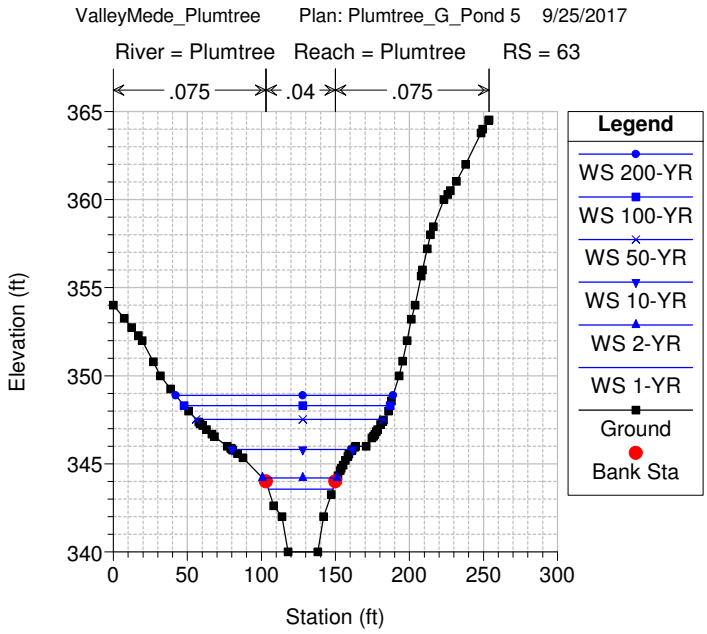

ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 762
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 658
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 526
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 380
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 146
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_G_Pond 5 9/25/2017
River = Plumtree Reach = Plumtree RS = 63
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
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PROJECT DATA
Project Title: ValleyMede_Plumtree
Project File : ValleyMede_Plumtree.prj
Run Date and Time: 9/25/2017 6:40:48 AM

Project in English units

PLAN DATA

Plan Title: Plumtree_G_Pond 5
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.p08

Geometry Title: Plumtree
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g01

Flow Title : Plumtree_G_Pond 5
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f14

Plan Description:
Proposed condition which includes grading to combine the existing ponds at Country Lane. (Pond 5)

Plan Summary Information:

Number of:	Cross Sections	= 85	Multiple Openings	=	0
	Culverts	= 6	Inline Structures	=	0
	Bridges	= 2	Lateral Structures	=	0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Plumtree_G_Pond 5
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f14

Flow Data (cfs)

River	Reach	RS	1-YR	2-YR	10-YR	50-YR	100-YR	200-YR

Plumtree	Plumtree	10286	223	307	596	995
1200	1441					
Plumtree	Plumtree	9499	204	303	660	1190
1474	1767					
Plumtree	Plumtree	6568	208	315	716	1330
1651	1971					
Plumtree	Plumtree	4185	194	281	684	1345
1694	2010					
Plumtree	Plumtree	1291	409	588	1267	2334
2969	3502					

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Plumtree	Plumtree	1-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	2-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	10-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	50-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	100-YR	Critical	Normal S = 0.0035

GEOMETRY DATA

Geometry Title: Plumtree
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g01

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10286

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	421.06	4.46	420.89	12.57	420.32	16.13	420	21.94	419.29
34.88	418	40.42	417.33	49.09	416.56	55.82	416.21	59.64	416.08
64.03	416.14	69.28	416.31	71.51	416.31	77.01	416.75	78.81	416.76
87.6	416	91.89	415.92	104.16	414	107.04	413.94	110.15	414
119.18	415.05	122.23	414.9	125.21	414.83	141.42	414.84	151.61	414.58
159.6	414.54	167.19	414.69	175.25	414.38	179.96	413.77	184.56	413.83
198.65	413.63	213.29	412.97	221.19	413.06	244.79	412.19	252.86	412
260.69	411.14	268.55	410	275.66	409.1	281.64	408	295.07	406.35
301.98	405.73	324.56	404	331.77	402.81	335.97	402	342.56	400
348.24	398	350.27	397.89	380.47	396.22	384.18	396	392.32	395.09
392.68	395.09	397.28	395.62	402.89	396.12	413.25	396.41	418.97	396.59
431.99	396.41	448.58	396.55	450.96	396.5	456.66	396	465.37	395.79
485.62	395.34	494.65	395.35	513.52	395.9	514.52	396	527.48	398
535.86	400	542.87	402	555.37	406	562.67	408	571.1	410
582.03	412	599.19	414	605.88	414.94	612.34	415.57	635.29	417.19

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	380.47	.04	413.25	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
380.47	413.25	240.46	241.25	237.2	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
418.97	635.29	396.59	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10044

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	412.61	5.59	412.52	12.02	412	24.56	410	43.68	408
63.32	407.31	82.83	408	95.82	408.67	112.17	408.9	135.95	408

```
  150.67  407.02  155.38  406.93  170.58  407.72  184.39  408.12  187.95     408
  198.17     406  207.41  404.64  213.72  403.97  220.01  403.47  230.16  403.33
  237.26  402.98  240.08  402.75  253.05   401.3  261.48     400  269.64     398
  276.05     396  280.89   394.8  280.91  394.79  283.98     394  296.18  392.49
  306.31  393.62   315.4  393.68  315.41  393.68   321.2  393.72  340.79   393.4
  357.04  393.75  384.23  394.62  389.34  394.61   409.5     394  417.56  393.18
  419.37  393.18  428.98     394  438.91  394.31  451.85  394.26   461.9  394.35
  480.45  394.77   489.6  395.18  496.68   395.1  547.82     396  555.48  396.43
  564.03  396.66  570.08  396.96  600.19   397.8  605.55  398.35  610.97  398.79
  622.38  399.08  632.53     400  658.42  401.23  661.34  401.26  665.82  401.48
  679.52  401.73  692.52  401.54  695.05  401.76  701.43  401.68  704.45   401.5
  715.06  401.24  723.65  401.19  738.24  400.62  741.08  400.41  748.78  400.57
  754.02  400.82  766.27  400.65  779.16  401.67  781.77     402  794.47     404
  812.23     408  815.19   408.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  280.91     .04   321.2    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.91   321.2            233.9  230.57  222.97             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9814

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  408.67   12.64     408    20.9   407.3   27.53  406.98    42.5  406.44
   45.07  406.25   49.58  405.72   78.23  403.56   83.62  402.79   92.79  403.11
  109.61   402.4   113.8     402  123.62  401.65  158.68  400.12  170.91  398.99
  182.64     398  195.08     396  198.75  395.24  205.66     394  253.13     392
   256.5  391.77  269.73  390.59  269.76  390.59  276.29     390  281.78  388.76
  287.27     390     300  391.49  302.59  391.81  308.77   392.3  315.09  392.31
  322.12  392.41  326.48  392.65  332.87  392.67  336.92  392.57  358.02  392.79
  362.67  392.97  366.57  392.83  382.15  392.69  386.15  392.76  408.35  392.69
  415.33  392.55  427.21  392.45  466.82  393.37  473.56  393.78  479.56     394
  490.09  394.88  500.42  395.03  503.77  395.29  508.66  395.37  510.05  395.29
  514.08  395.75  518.53   395.7  538.06  395.23  547.13  395.22  564.37     396
  575.99  396.66  593.58  397.53   602.7  396.78  604.57  396.76  609.13  397.48
  610.69     398  617.78   398.3   636.1  398.77  690.36  399.64  696.36  399.66
  731.55   398.7   739.3  398.59  745.07  398.39  755.19  398.48   767.5  398.81
  779.98  399.52  790.91  399.95  806.05     402  818.51   403.5  823.74     404
  826.23   404.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  253.13     .04  308.77    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        253.13  308.77            52.19   51.52   50.85             .1       .3
Right Levee     Station=  514.08      Elevation=  395.75

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9762

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  406.21    1.37     406   14.09  404.95   24.55  404.21   38.68  402.62
   47.25     402   67.31     400   71.18  399.81    79.7  399.62   84.43  399.37
  117.61  398.32   130.2  398.16  134.88     398  147.37  397.38  157.13  397.03
  162.41  397.34  174.01  396.74  180.45     396  203.34  393.86  225.77  392.62
  235.15     392  236.85  391.76  246.11  391.05  253.44  390.35  253.48  390.34
  256.39     390  260.62  388.92  263.74     388  265.59  389.21  267.49     388
  276.02     390  282.13     392   284.2  392.49  284.22  392.49  290.57     394
  292.66  393.58  294.75     394   307.3  392.92  329.54  391.59  336.98  391.01
  346.17  391.13  351.58  391.28  355.99  391.22  362.72  391.29  365.01  391.44
  375.54  391.54  383.33  391.42  390.57  391.67  406.22     392  413.09  392.62
  427.35  393.41  431.42   393.8  432.21     394  447.82  395.11  449.31  395.15
  470.35  394.72   473.7  395.12  482.31  395.53  496.51  395.21  507.72  395.47
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  543.73  396.64  554.26  396.66  559.24  396.89  562.97  396.96  568.76  397.23
  584.75  397.94  589.53  398.31  594.28     398  601.77  397.68  611.77     398
   662.6   399.2  729.79  397.67  753.67  397.86  761.91     398   785.2  399.61
  794.52  400.41  805.84  402.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  235.15     .04  284.22    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.15  284.22            32.64   30.09   27.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9732

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  121.15           145.71  143.47  141.55             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 9650

INPUT
Description: Michaels Way
Distance from Upstream XS =      51
Deck/Roadway Width        =      50
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  396.38            26.1 395.934            49.6 395.582
    91.4 394.914           117.4 394.746           144.9 394.497
   186.3 394.402          211.94 394.376          238.63 394.594
  353.45     396

Upstream Bridge Cross Section Data
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
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  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
          82.5  121.15           .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  397.96             8.6   397.3            45.6 396.969
    68.8 396.671            92.4  396.38           123.2 395.934
   146.8 395.582           191.3 394.914           209.6 394.746
   232.9 394.497           262.2 394.402           288.2 394.376
  314.98 394.594          417.56     396

Downstream Bridge Cross Section Data
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.96   15.99  396.01   17.57     396   20.76  395.29   25.99  395.01
   29.32  394.71   29.33  394.38   39.55  392.85   60.92  392.22   95.59   390.4
  100.13  389.82  106.73  388.97  116.38  387.66  117.95  386.81  124.68  386.27
  130.57  386.46  134.27   387.9   134.7     388  137.88  388.68  144.79  390.87
  157.88  392.09  174.45  391.81  191.33  392.09  218.95   392.7   229.4  392.07
  229.72  392.09  239.13  392.16  239.87  392.21  251.99  392.37  252.81  392.33
  253.84  392.05  264.78  392.06  265.66  392.35  265.82  392.37  274.13  392.48
  275.38  392.39   275.8  392.37  280.37  392.38  285.74  392.34  288.04  392.35
  289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
  294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
  302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
  336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
  353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
  363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         106.73  137.88           .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8   391.2       F
   140.7  417.56   391.2       F

Upstream Embankment side slope              =       3 horiz. to 1.0 vertical
Downstream Embankment side slope            =       3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.5     .024     .016        0                  .5                1
Upstream   Elevation =  387.74
           Centerline Station =  102
Downstream Elevation =  386.61
           Centerline Station =  120
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Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.6     .024     .016        0                  .5                1
Upstream   Elevation =  387.77
           Centerline Station =  112
Downstream Elevation =  386.6
           Centerline Station =  130
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CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	112.20	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.43
Q Barrel (cfs)	112.20	Culv Vel DS (ft/s)	5.35
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.24
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.64	Weir Sta Lft (ft)	
E.G. OC (ft)	391.04	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.01	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	146.36	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.10
Q Barrel (cfs)	146.36	Culv Vel DS (ft/s)	5.69
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	390.13	Culv Frctn Ls (ft)	0.75
W.S. DS (ft)	389.91	Culv Exit Loss (ft)	0.28
Delta EG (ft)	1.42	Culv Entr Loss (ft)	0.51
Delta WS (ft)	1.45	Q Weir (cfs)	
E.G. IC (ft)	391.22	Weir Sta Lft (ft)	
E.G. OC (ft)	391.64	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.11	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.91	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.37	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.37	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	298.35	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.61
Q Barrel (cfs)	298.35	Culv Vel DS (ft/s)	9.17
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	391.33	Culv Frctn Ls (ft)	0.82
W.S. DS (ft)	390.90	Culv Exit Loss (ft)	0.88
Delta EG (ft)	2.63	Culv Entr Loss (ft)	0.72
Delta WS (ft)	2.89	Q Weir (cfs)	
E.G. IC (ft)	393.54	Weir Sta Lft (ft)	
E.G. OC (ft)	393.95	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.80	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.90	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.98	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	371.59	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.73
Q Barrel (cfs)	371.59	Culv Vel DS (ft/s)	9.68
E.G. US. (ft)	395.24	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.10	Culv Inv El Dn (ft)	386.61

E.G. DS (ft)	392.50	Culv Frctn Ls (ft)	0.50
W.S. DS (ft)	391.93	Culv Exit Loss (ft)	0.89
Delta EG (ft)	2.74	Culv Entr Loss (ft)	0.74
Delta WS (ft)	3.17	Q Weir (cfs)	251.20
E.G. IC (ft)	394.93	Weir Sta Lft (ft)	71.38
E.G. OC (ft)	395.23	Weir Sta Rgt (ft)	275.77
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.03	Weir Max Depth (ft)	0.86
Culv WS Outlet (ft)	391.93	Weir Avg Depth (ft)	0.58
Culv Nml Depth (ft)	5.21	Weir Flow Area (sq ft)	119.16
Culv Crt Depth (ft)	4.01	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	363.98	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.13
Q Barrel (cfs)	363.98	Culv Vel DS (ft/s)	9.18
E.G. US. (ft)	395.55	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.38	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.01	Culv Frctn Ls (ft)	0.14
W.S. DS (ft)	392.39	Culv Exit Loss (ft)	0.70
Delta EG (ft)	2.54	Culv Entr Loss (ft)	0.65
Delta WS (ft)	2.98	Q Weir (cfs)	471.13
E.G. IC (ft)	394.75	Weir Sta Lft (ft)	51.25
E.G. OC (ft)	395.54	Weir Sta Rgt (ft)	285.59
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.60	Weir Max Depth (ft)	1.18
Culv WS Outlet (ft)	392.39	Weir Avg Depth (ft)	0.81
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	189.74
Culv Crt Depth (ft)	3.95	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	354.08	Culv Full Len (ft)	114.50
# Barrels	1	Culv Vel US (ft/s)	8.85
Q Barrel (cfs)	354.08	Culv Vel DS (ft/s)	8.85
E.G. US. (ft)	395.86	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.66	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.46	Culv Frctn Ls (ft)	1.16
W.S. DS (ft)	392.87	Culv Exit Loss (ft)	0.63
Delta EG (ft)	2.40	Culv Entr Loss (ft)	0.61
Delta WS (ft)	2.79	Q Weir (cfs)	732.39
E.G. IC (ft)	394.52	Weir Sta Lft (ft)	43.32
E.G. OC (ft)	395.85	Weir Sta Rgt (ft)	295.46
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.66	Weir Max Depth (ft)	1.47
Culv WS Outlet (ft)	392.53	Weir Avg Depth (ft)	1.04
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	262.05
Culv Crt Depth (ft)	3.87	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.80	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.48
Q Barrel (cfs)	110.80	Culv Vel DS (ft/s)	5.26
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	390.89	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.52	Culv Frctn Ls (ft)	0.35
W.S. DS (ft)	389.31	Culv Exit Loss (ft)	0.22
Delta EG (ft)	1.52	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.57	Q Weir (cfs)	
E.G. IC (ft)	390.65	Weir Sta Lft (ft)	
E.G. OC (ft)	391.05	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.74	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.31	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.97	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.94	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	160.64	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.38
Q Barrel (cfs)	160.64	Culv Vel DS (ft/s)	6.23
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	387.77

W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	390.13	Culv Frctn Ls (ft)	0.75
W.S. DS (ft)	389.91	Culv Exit Loss (ft)	0.38
Delta EG (ft)	1.42	Culv Entr Loss (ft)	0.10
Delta WS (ft)	1.45	Q Weir (cfs)	
E.G. IC (ft)	391.46	Weir Sta Lft (ft)	
E.G. OC (ft)	391.91	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	390.27	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.91	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.49	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.50	Min El Weir Flow (ft)	394.39

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	297.65	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.71
Q Barrel (cfs)	297.65	Culv Vel DS (ft/s)	9.13
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	393.80	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	391.33	Culv Frctn Ls (ft)	0.82
W.S. DS (ft)	390.90	Culv Exit Loss (ft)	0.87
Delta EG (ft)	2.63	Culv Entr Loss (ft)	0.73
Delta WS (ft)	2.89	Q Weir (cfs)	
E.G. IC (ft)	393.56	Weir Sta Lft (ft)	
E.G. OC (ft)	393.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.77	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.90	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	372.21	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.80
Q Barrel (cfs)	372.21	Culv Vel DS (ft/s)	9.69
E.G. US. (ft)	395.24	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.10	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.50	Culv Frctn Ls (ft)	0.40
W.S. DS (ft)	391.93	Culv Exit Loss (ft)	0.89
Delta EG (ft)	2.74	Culv Entr Loss (ft)	0.75
Delta WS (ft)	3.17	Q Weir (cfs)	251.20
E.G. IC (ft)	394.98	Weir Sta Lft (ft)	71.38
E.G. OC (ft)	395.25	Weir Sta Rgt (ft)	275.77
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.01	Weir Max Depth (ft)	0.86
Culv WS Outlet (ft)	391.93	Weir Avg Depth (ft)	0.58
Culv Nml Depth (ft)	5.06	Weir Flow Area (sq ft)	119.16
Culv Crt Depth (ft)	4.02	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	364.89	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.18
Q Barrel (cfs)	364.89	Culv Vel DS (ft/s)	9.20
E.G. US. (ft)	395.55	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.38	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.01	Culv Frctn Ls (ft)	0.72
W.S. DS (ft)	392.39	Culv Exit Loss (ft)	0.70
Delta EG (ft)	2.54	Culv Entr Loss (ft)	0.65
Delta WS (ft)	2.98	Q Weir (cfs)	471.13
E.G. IC (ft)	394.80	Weir Sta Lft (ft)	51.25
E.G. OC (ft)	395.56	Weir Sta Rgt (ft)	285.59
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.59	Weir Max Depth (ft)	1.18
Culv WS Outlet (ft)	392.39	Weir Avg Depth (ft)	0.81
Culv Nml Depth (ft)	4.86	Weir Flow Area (sq ft)	189.74
Culv Crt Depth (ft)	3.96	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	354.52	Culv Full Len (ft)	114.60
# Barrels	1	Culv Vel US (ft/s)	8.86
Q Barrel (cfs)	354.52	Culv Vel DS (ft/s)	8.86
E.G. US. (ft)	395.86	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.66	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.46	Culv Frctn Ls (ft)	1.16
W.S. DS (ft)	392.87	Culv Exit Loss (ft)	0.63
Delta EG (ft)	2.40	Culv Entr Loss (ft)	0.61
Delta WS (ft)	2.79	Q Weir (cfs)	732.39
E.G. IC (ft)	394.56	Weir Sta Lft (ft)	43.32
E.G. OC (ft)	395.86	Weir Sta Rgt (ft)	295.46
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.69	Weir Max Depth (ft)	1.47
Culv WS Outlet (ft)	392.52	Weir Avg Depth (ft)	1.04
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	262.05
Culv Crt Depth (ft)	3.87	Min El Weir Flow (ft)	394.39

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01
29.32	394.71	29.33	394.38	39.55	392.85	60.92	392.22	95.59	390.4
100.13	389.82	106.73	388.97	116.38	387.66	117.95	386.81	124.68	386.27
130.57	386.46	134.27	387.9	134.7	388	137.88	388.68	144.79	390.87
157.88	392.09	174.45	391.81	191.33	392.09	218.95	392.7	229.4	392.07
229.72	392.09	239.13	392.16	239.87	392.21	251.99	392.37	252.81	392.33
253.84	392.05	264.78	392.06	265.66	392.35	265.82	392.37	274.13	392.48
275.38	392.39	275.8	392.37	280.37	392.38	285.74	392.34	288.04	392.35
289.04	392.37	289.76	392.35	291.67	392.43	292.2	392.41	293.73	392.52
294.34	392.49	295.48	392.61	297.43	392.5	299.89	392.58	301.52	392.7
302.57	392.72	317.67	393.33	321.58	393.35	323.43	393.4	328.45	393.52
336.04	393.41	337.54	393.43	342.18	393.53	347.45	393.83	351.46	393.93
353.19	394	353.68	394.06	355.32	394.12	356.64	394.21	359.84	394.23
363.57	394.38	408.86	396	412.96	396.28	417.56	396.44		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.73	.04	137.88	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
106.73	137.88	74.95	89.37	103.36	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	104.8	391.2	F
140.7	417.56	391.2	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9499

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.42	1.16	397.39	10.04	396	12.41	395.1	15.2	394
19.89	392.3	20.69	392	30.94	390.03	58.35	389.54	78.64	389.7
91.71	389.72	91.72	389.72	95.66	389.73	106.35	385.4	108.48	385.35
121.85	388.31	126.28	389.29	134.6	389.39	148.99	387.24	154.41	388.47
172.52	389.82	180.01	390	192.12	392	192.21	392.01	204.6	394
211.88	395.17	217.46	396	219.87	396.49	223.11	397.11	227.54	398
230.91	398.56	233.71	399	240.41	400	246.88	400.81		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	95.66	.04	126.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.

95.66	126.28		98.65	101.8	104.92	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9398

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398.2	5.52	398.06	6.45	398	10.27	396.93	13.95	396
17.15	395.1	21.18	394	22.21	393.72	23.21	393.45	25.97	392.71
28.56	392	35.43	391.01	38.29	390.6	43.03	390	43.15	389.99
46.04	389.74	46.81	389.7	47.09	389.68	47.37	389.65	55.11	389.4
55.76	389.36	56.28	389.32	56.92	389.26	63.39	388.58	69.33	388.73
71.4	388.44	71.45	389.03	80.15	389.63	92.99	388.55	114.44	388.98
120.46	388.94	120.47	388.94	128.65	388.89	134.08	384.53	135.79	384.42
141.88	384.75	145.59	388.85	150.79	388.83	167.65	388.75	186.81	388.92
200.79	389.39	202.6	390	212.88	391.15	214.18	392	222.75	392.3
224.12	392.62	227.87	392.98	232.15	393.19	232.46	393.21	235.68	393.41
238.89	393.56	241.36	393.69	244.69	393.87	245.13	393.89	247.11	394
255.3	394.93	262.09	395.66	265.18	396	268.55	396.34	272.92	396.76
279.66	397.44	280.66	397.53	281.55	397.61	285.79	398	291.8	399.12
296.37	400	301.1	400.86						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	128.65	.04	145.59	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.65	145.59	97.24	96.47	94.54	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9301

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400.19	3.07	400	4.08	399.94	4.2	399.94	13.57	399.39
15.2	399.29	20.44	399.07	21.01	399.05	21.75	399.02	22.33	399
33.53	398.93	34.16	398.91	34.62	398.89	50.07	398.18	51.97	398.04
52.52	398	56.81	396.58	58.64	396	59.61	395.91	64.07	395.25
72.56	394	73.12	393.94	74.3	393.83	84.4	392.97	90.89	392.65
97.02	392.35	101.28	392.17	101.59	392.16	101.86	392.14	101.98	392.14
104.04	392	106.2	392.22	109.76	392.28	110.09	392.26	110.2	392.25
111.04	392.21	113.1	392.09	140.12	387.83	145.5	387.55	154.95	387.07
157.77	384.36	160.52	383.31	166.94	384.65	171.14	388.29	175.86	388.27
175.87	388.27	183.69	388.23	215.21	388.62	222.39	389.2	234.24	392.69
252.67	392.11	269.21	391.61	287.95	393.96	291.68	394	304.65	395.18
314.29	395.71	317.24	395.93	317.28	395.93	318.14	396	320.84	396.21
321.8	396.3	324.25	396.51	326.08	396.68	329.75	397.01	336.95	397.7
338.16	397.81	340.03	398	341.44	398.43	347.8	400	351.27	400.78
352.31	401.05								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	154.95	.04	171.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
154.95	171.14	109.84	105	100.42	.1 .3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
42.5	98.1	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9196

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.06	3.11	399.1	7.66	399.14	8.21	399.14	11.14	399.2
14.16	399.24	15.16	399.23	16.06	399.21	16.45	399.2	16.79	399.18
17.07	399.17	44.77	399	46.3	398.96	57.79	398.17	58.05	398.12
58.52	398.07	59.24	398.01	59.47	398	59.81	397.95	60.63	397.83
60.69	397.82	61.36	397.83	62.34	397.8	62.8	397.77	63.34	397.77
63.74	397.73	73.15	396.86	74.17	396.76	74.98	396.67	80.24	396
91.29	394.71	96.77	394	103.28	393.2	108.02	392.64	109.29	392.48
110.44	392.34	113.4	392	129.6	390	133.01	389.51	134.1	389.41
135.16	389.31	138.39	388.96	141.78	388.59	143.61	388.38	145.61	388.15
146.23	388.08	146.93	388.04	146.98	388	156.92	387	192.18	386.94
214.32	387.26	224.37	387.23	224.38	387.23	230.17	387.21	234.05	385.77
239.97	384.81	241.03	384.18	243	383.81	247.36	387.68	256.1	387.12
258.34	386.98	282.41	388.4	293.08	392.68	309.62	391.47	323.53	392.22
323.58	392.18	354.2	394	361.45	395.27	365.79	396	370.25	397.12
373.9	398	375.39	398.33	383.13	400	386.3	400.73	391.87	402
395.39	402.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	230.17	.04	247.36	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
230.17	247.36	197.07	208.89	195.59	.1 .3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
11	50.8	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8987

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.15	2.15	402.17	3.39	402.13	6.04	402.17	12.51	402.07
13.01	402.08	14.07	402.07	15.03	402.07	16.62	402.1	16.88	402.09
17.7	402.05	18.67	402	24.82	401.62	50.49	400	71.91	398.02
72.1	398	72.14	397.99	82.9	396	83.83	395.8	92.09	394
100.48	392.04	100.64	392	100.82	391.96	101.02	391.92	110.17	390
121.03	388.29	142.19	386.02	152.75	385.4	161.75	385.92	161.76	385.92
161.94	385.93	170.22	385.8	172.51	383.34	178.25	382.77	183.07	383.36
185.81	386.43	193.25	386.15	202.96	385.78	222.78	385.7	249.39	385.47
263.78	390.18	301.3	390	301.69	390.04	302.4	390.1	313.7	391.1
324.37	392	326.83	392.6	329.22	393.19	332.48	394	335.16	394.95
338.19	396	340.18	396.58	342.55	397.27	344.45	397.82	345.03	398
346.35	398.38	351.77	400	352.66	400.28	356.31	401.47	357.07	401.72
357.94	402	358.9	402.3	364.45	404	365.62	404.4	369.07	405.49

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	170.22	.04	185.81	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
170.22	185.81	233.38	233.77	226.61	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8753

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.84	3.57	392.36	4.48	392.24	6.24	392	14.25	391.04
22.57	390	39.19	388.36	42.66	388	43.14	387.95	44.71	387.76
45.13	387.7	53.93	387	55.07	386.91	55.91	386.89	59.98	386.86
67.22	387.07	71.26	386.74	71.58	386.73	74.94	386.49	75.24	386.48
79.99	386.13	80.09	386.12	81.64	386	140.52	386.79	179.2	384.55
199.15	384.94	212.08	384.65	214.59	384.6	226.78	384.34	229.61	382.96
231.97	382.55	232.78	382.41	236.12	381.99	237.03	382.27	237.82	384.79
243.64	385.02	243.65	385.02	246.4	385.13	254.4	387.48	262.5	388.23
269.36	387.48	284.51	387.86	284.57	388.25	284.6	388.25	284.74	388.27
302.51	390	304.49	390.31	314.62	392	318.02	392.86	322.27	394

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  323.63  394.41  327.41  395.54  328.32  395.82   328.9     396  329.96  396.36
  334.49     398  337.27  399.01  339.54     400  340.77  400.45  344.57     402
  346.47   402.7     350     404   351.3  404.47  352.94  405.01  353.27  405.12

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  226.78     .04  237.82    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        226.78  237.82           178.41  174.76  168.62             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8579

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.17    3.31     400   17.74  399.07   34.62     398   35.22  397.93
   46.41  397.26   51.75  396.96   59.26   396.5   60.57  396.41   63.23  396.27
   68.83     396   75.46  394.89   76.44  394.72   79.84  394.17   80.17  394.11
   80.95     394   93.93  392.04   94.14     392   94.63  391.88   95.67  391.71
   95.96  391.67   96.13  391.66   102.2  391.37   103.3  391.28  107.14  391.06
  111.25  390.74   112.8  390.64   116.2  390.33  116.74  390.29  119.66     390
  124.86  389.68  126.23  389.59  129.14  389.43  130.57  389.33  132.66  389.17
   135.1  389.03     138  388.83  141.06  388.61  147.32  388.13  148.92     388
  153.19  387.46  172.43  385.68  186.19  383.82  200.87  383.46  218.33  383.53
  227.14  382.25  231.16  382.93  233.37  383.31  235.71  383.61  242.87  381.38
  248.28  381.13  250.03  381.37  251.19  383.67  263.28  383.69  264.68   383.7
  279.14   384.5  298.66  387.04   300.8     387  315.88     390  320.59  391.65
   321.5     392  322.64  392.54  325.53     394   328.7  395.54  329.55     396
  332.04  397.23  333.33     398  334.37  398.44  338.88     400  339.68  400.16
  340.45  400.35  347.58     402  352.32   402.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  235.71     .04  251.19    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.71  251.19           198.29  204.23  206.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8374

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  401.05     .39  401.02   14.71     400   17.51  399.78   17.87  399.76
   18.37  399.72   19.63  399.64   20.25   399.6      22  399.47   31.49  398.77
   42.12     398   43.17  397.92   43.74  397.88   48.54  397.52   49.54  397.46
   51.19  397.35   54.98  397.06   67.52   396.4   67.98  396.37    72.6  396.03
      73     396   77.65  395.72   79.49   395.6   80.67  395.52   82.29  395.41
   83.66  395.31   85.08   395.2  104.07     394  108.69  393.72  110.21  393.61
  111.59  393.51  116.39  393.15  122.53  392.72  129.15  392.19  131.43     392
  140.54  390.76  146.03     390  147.63  389.84  149.67  389.65   158.7  388.75
  166.96     388  174.92  387.31  176.26  387.21  182.29     386  189.22  384.97
  217.89   382.7  254.28  382.69  262.97  382.52  262.98  382.52   272.5  382.34
  274.84   380.5  276.51  380.31  286.75  380.32  292.45  384.62  293.85  384.83
  305.64   386.6  321.38     388  325.59  388.89  331.68     390  334.17  390.71
  336.02   391.3   338.3     392  343.97  393.91  344.22     394  345.13  394.36
  349.46     396  350.95   396.6  354.45     398  356.99  399.37  358.18     400
  359.59  400.71  360.34  401.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   272.5     .04  292.45    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         272.5  292.45           144.9  145.45  146.03             .1       .3

CROSS SECTION
```

RIVER: Plumtree
REACH: Plumtree RS: 8229

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.36	5.81	394.06	6.29	394	7.37	393.95	45.41	392
69.28	390.22	72.15	390	72.18	390	72.26	389.98	72.54	389.95
73	389.89	74.69	389.72	75.45	389.65	75.92	389.61	75.99	389.6
79.77	389.37	82.3	389.25	100.97	388.39	107.53	388	110.36	387.9
110.76	387.9	112.75	387.84	132.43	386	139.68	385.1	170.44	382.68
187.75	382.12	197.62	382.13	197.63	382.13	207.39	382.14	209.28	380.1
212.63	379.79	215.85	380.15	217.64	381.75	227.71	382.65	227.84	382.66
243.37	383.19	265.96	384.67	268	384.46	288.88	388	293.09	388.12
308.33	389.98	308.55	389.98	309.46	389.99	310.08	390	315.47	391.1
319.76	391.98	319.9	392	320.02	392.04	321.07	392.37	326	393.9
326.33	394	328.6	394.86						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	207.39	.04	217.64	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
207.39	217.64	135.27	135.16	134.66	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8094

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.62	2.48	394.2	3.72	394	3.8	393.98	4.1	393.92
4.62	393.84	5.04	393.78	5.44	393.73	5.7	393.7	24.53	392.35
27.13	392.1	27.41	392.08	28.22	392	37.38	391.13	48.65	390
55.52	389.55	79.43	388.11	79.45	388.11	79.5	388.1	79.73	388.02
79.79	388	96.53	386.44	99.06	386.2	101.25	386	106.88	385.44
109.08	385.26	113.06	384.89	116.1	384.62	119.34	384.4	120.88	384.28
121.97	384.22	122.35	384.19	122.91	384.14	134.05	383.5	144.72	382.7
163.81	381.63	182.02	380.88	183.82	381.01	183.84	381.01	194.28	381.76
195.27	379.09	198.85	378.24	204.43	378.53	207.68	381.82	215.37	381.59
219.87	381.46	228.39	381.39	231.06	382.03	246.18	381.9	274.41	383.36
311.66	389.55	311.72	389.81	311.73	389.81	329.62	392	337.85	393.59
339.81	394	342.65	394.79	346.84	396	349.21	396.76	352.92	398
358.41	399.96	358.53	400	358.64	400.03	368.44	402	368.97	402.04
369.04	402.04	369.13	402.05	375.87	402.56	376.87	402.63	378.22	402.73
382.48	403.06	386.91	403.38	388.95	403.53	390.87	403.66		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	194.28	.04	207.68	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
194.28	207.68	138.21	139.81	140.01	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7954

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	390.87	1.06	390.76	5.56	390.36	8.09	390.17	9.7	390.06
12.95	389.88	15.86	389.75	20.41	389.55	21.37	389.49	22.17	389.45
26.06	389.27	27.8	389.18	29.65	389.1	31.21	389.02	32.58	388.93
33.19	388.89	40.18	388.65	41.65	388.54	44.29	388.45	47.14	388.32
47.67	388.28	49.22	388.2	50.93	388.11	52.62	388	54.06	387.89
58.14	387.52	60.02	387.34	70.48	386.32	73.92	386	75.83	385.87
81.99	385.49	86.05	385.25	88.16	385.06	94.21	384.69	95.33	384.57
98.59	384.23	99.42	384.17	100.92	384	114.44	382.88	125.39	382
130.61	381.95	156.45	380.05	188.73	379.73	199.32	380.23	210.56	380.77

```
     212   378.9  214.38  377.79  218.13  379.54  221.11  380.65  229.58  380.68
  231.23  380.69  249.42  380.31   281.8  380.49   295.4     380  299.39  381.16
  302.17     382  305.31  382.93  310.71  384.55  316.22     386  323.56  387.01
  330.85     388  342.34   389.5  345.84     390  347.98   390.9  350.48     392
  352.14  392.75  355.01     394  357.39  394.99  359.91     396  362.57  396.94
  365.15  397.64  366.49     398  375.99  398.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  210.56     .04  221.11    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        210.56  221.11           155.28  153.64  152.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7800

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  389.23     6.4  388.77   18.95     388   32.05  387.12   34.38  386.96
   40.95  386.52   41.74  386.47   42.88  386.38   48.62     386   49.93  385.92
   50.74  385.86   62.21   385.1   65.97  384.84    73.9  384.32   75.81   384.2
   77.92  384.08   78.06  384.07   79.37     384   79.61  383.95   79.79  383.92
    79.9  383.91    81.2  383.76   81.59  383.72   81.85  383.71   82.72  383.74
   88.11  383.68   89.08  383.64   89.68  383.58   90.64  383.53   91.54  383.48
   92.48  383.38   93.55  383.29   96.76     383   98.06  382.88   99.04  382.78
  102.88  382.37  106.07     382  129.44  380.05  152.75  378.79  172.94  379.22
  186.27  379.75  187.83  378.84  191.51  378.79  198.74  378.73     200  379.32
  200.83   379.7  211.69     379  223.63  379.27  230.99   379.1  240.48  378.88
  259.49  379.02  278.05  378.97  305.83  379.75  307.52     380  314.08   381.6
  315.71     382  316.56  382.21  318.83  382.81  323.87     384  331.19  385.58
  333.53     386   340.6  386.91  350.42     388  352.19  388.23  353.07  388.36
  356.29  388.87  360.39  389.49  361.84  389.72  363.36     390  364.77  390.43
  366.25  390.85  370.11     392  372.25  392.58

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.27     .04  200.83    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.27  200.83           252.37  252.82  252.55             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7548

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.07     .78     384    5.11  383.66    7.63   383.5   11.97  383.17
   14.64  382.99   17.76  382.76   24.91  382.21   27.52     382   28.85  381.83
   29.51  381.79   32.65  381.46   35.07  381.21   46.63     380   59.52  379.12
   61.36     379   65.17  378.74   75.34  378.13   77.34  378.05   77.62     378
   83.55  378.07   85.43  378.08   88.35  378.07   95.64  378.09  101.54  378.13
  108.95  378.07  110.55  378.08  119.01  378.06  138.28  378.06  168.39  378.45
  198.66  378.25  217.53  377.85  219.53  377.83  219.55  377.83  230.43  377.75
  232.68  376.67  235.51  375.57  238.58  376.37  240.21  377.92  249.56   377.9
  258.68  377.89  288.89  377.64  323.87  376.92   330.2  377.07  336.47     378
  340.56  378.61  343.65  379.04  345.35  379.25  349.52  379.62  352.72  379.89
  353.04  379.92  353.25     380  353.89  380.15   356.3  380.75  360.75     382
  369.15     384  377.97  385.33  382.29     386  383.74  386.27  393.23     388
  398.11     389  402.86     390  406.24  390.27  406.63  390.26  409.53     390
  411.75  389.85   413.2  389.77   418.1  389.46  420.07  389.37  423.04  389.17
  425.75  388.96   431.8   389.4  440.42     390   442.9  390.41  445.97  390.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  230.43     .04  240.21    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        230.43  240.21           174.12  180.41  186.79             .1       .3
```

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7367

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.88	17.18	384.04	17.79	384	19.31	383.69	27.57	382
33.56	381.11	40.22	380	72.92	378	75.63	377.86	83.54	377.49
84.36	377.49	86.2	377.54	86.99	377.54	87.28	377.52	88.37	377.57
88.81	377.59	98.7	377.77	99.18	377.78	99.84	377.77	153.1	379.18
184.66	379.38	209.09	379.76	209.11	379.76	216.46	379.87	218.28	379.16
220.46	378.71	224.14	378.3	227.18	379.5	239.26	379.44	239.27	379.44
256.12	379.35	283.76	378.85	301.95	376	306.84	375.99	309.51	375.94
311.37	375.92	312.47	375.93	313.98	375.94	315.54	376	317.31	376.05
328.94	376.26	339.82	376.48	386.56	377.48	387.24	377.47	389.22	377.48
389.83	377.49	393.84	377.67	396.67	377.79	398	377.85	399.4	377.89
400.73	377.95	403.02	378	405.65	378.1	407.78	378.19	409.29	378.26
410.92	378.34	413.44	378.46	417.48	378.69	420.02	378.83	428.31	379.29
429.6	379.36	436.31	379.72	436.88	379.75	441.68	380	449.79	380.68
452.35	380.9	458.41	381.46	460.97	381.69	464.19	382	470.57	382.96
477.61	384	480.68	384.57	488.87	386	495.27	386.99	498.55	387.34

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	216.46	.04	227.18	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
216.46	227.18	143.37	150.84	157.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7216

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.75	1.08	385.65	5.95	385.32	10.54	384.89	18.99	384.19
19.48	384.13	19.51	384.13	19.72	384.03	19.77	384.03	19.83	384
21.34	383.6	24.22	382.82	25.18	382.55	27.46	382	33.57	381.07
41.34	379.98	60.13	379	65.81	378.72	75.73	378.27	77.55	378.18
79.67	378.07	80.08	378.07	80.17	378.06	81.18	378	81.5	377.95
81.94	377.89	82.7	377.88	134.09	376.01	134.34	376	135.9	375.99
142.56	375.98	148.85	376	148.97	376	159.54	375.75	186.07	376.5
205.76	375.8	205.79	375.8	221.2	375.26	236.22	376.17	236.23	376.17
243.36	376.61	267.12	376.15	298.57	377.1	324.96	378	344.89	379.72
346.99	379.9	348.24	380	355.59	380.52	358.24	380.72	369.12	381.55
372.54	381.8	375.03	382	377.33	382.49	384.79	384	385.68	384.2
393.83	386	394.81	386.17	399.71	387.05	405.49	388	406.42	388.18
407.5	388.41	413.63	389.1	417.54	389.6	418.61	389.74	420.77	390
421.3	390.07	421.95	390.14	429.79	391.08	433.06	391.43	434.12	391.56
434.45	391.61	438.52	392	445.08	392.32	449.48	392.54	451.09	392.66

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.07	.04	243.36	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.07	243.36	190.28	186.42	181.46	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
377.1	439.5	390	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7030

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.29	2.41	387	10.05	386	29.45	384.45	32.78	384.15
33.33	384	36.52	383.46	40.31	382.87	43.31	382.38	46.06	382
46.12	381.98	48.59	381.84	49.64	381.82	49.97	381.8	50.4	381.79
50.62	381.77	71.01	380.53	81.91	380	92.52	379.05	103.93	378
123.79	376.72	134.74	376.11	135.07	376.05	135.57	376	135.6	375.99
137.36	375.81	139.35	375.62	140.29	375.67	145.45	375.59	151.15	375.29
153.13	375.29	164.88	375.94	165.28	375.96	165.81	376	175.82	375.48
205.64	375.09	233.21	375.65	248.05	375.46	259.75	375.31	261.56	373.84
262.29	373.43	263.48	373.62	268.09	375.54	278.5	375.62	279.83	375.63
309.7	376.93	312.89	376.93	319.01	378	322.75	379.67	328.88	379.92
332.16	380	333.98	380.26	345.53	382	358.26	384	368.51	385.52
371.9	386	379.53	387.21	385.4	388	395.57	389.56	398	389.92
398.64	390	402.14	390.27	406.61	390.59	410.26	390.83	412.74	390.96
415.65	391.11	416.49	391.16	419.22	391.29	423.04	391.64	423.34	391.66
427.09	392	428.37	392.13	432.56	392.47	446.6	393.09		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	259.75	.04	268.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
259.75	268.09	140.13	137.19	133.92	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
372.8	404.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6893

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.2	2.38	382.99	8.39	382.4	12.65	382	20.07	381.43
21.04	381.32	23.89	381.07	32.28	380	33.24	379.94	36.89	379.63
54.28	378.25	56.67	378	75.57	376.96	78.59	376.8	93.69	376
94.91	375.96	96.44	375.86	117.75	374.81	136.62	374	152.27	373.6
154.13	372.23	157.36	371.8	159.62	372.29	160.73	373.73	187.35	373.86
202.43	373.44	213.2	373.14	214.26	371.39	217.55	370.68	220.85	371.53
222.2	372.36	232.55	373.36	240.97	374.18	259.97	375.25	279.8	378.38
290.19	380	292.23	380.3	302.91	382	311	382.83	315.48	383.17
321.02	383.61	322.67	383.75	325.93	384	327.14	384.17	327.77	384.24
330.51	384.6	331.06	384.66	331.73	384.74	332.6	384.85	333.79	385.01
335.83	385.3	339.56	385.84	340.65	386	353.87	389.13	355.81	389.6
357.43	390	357.61	390.01	361.03	390.33	362.39	390.43	362.61	390.44
365.01	390.49	366.06	390.54	368.05	390.54	368.79	390.56	380.19	390.59
388.25	390.86								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.2	.04	232.55	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.2	232.55	124.46	126.53	128.02	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
333.6	364.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6766

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.56	7.75	380.34	9.62	380.18	11.59	380.1	27.69	379.6
34.11	379.36	42.51	378.88	44.96	378.81	50.68	378.9	55.82	378.75
59.91	378.59	69.06	378.34	72.96	378.1	76.53	377.98	77.17	377.98
78.44	377.94	85.15	377.54	110.99	376.09	111.42	376	115.69	375.87
158.02	374.36	160.91	374	186.61	372.66	212.26	373.01	237.02	373.1
242.58	372.73	249.33	372.28	253.11	370.17	254.8	369.76	259.27	370.49
262.36	373.11	274.27	374.24	274.29	374.25	278.85	374.68	293.57	375.12

310.54	376.12	337.65	378	341.5	378.38	344.84	378.75	345.88	378.88
348.32	378.95	351.5	379.16	353.85	379.26	354.2	379.31	358.69	379.46
365.18	379.62	366.28	379.73	367.47	380	369.55	380.4	370.86	380.58
373.19	381.02	375.37	381.31	379.99	382	390.01	384	392.8	384.16
404.5	384.66	418.06	384.49	421.86	384.5	423.36	384.56	430.23	384.62
434.86	384.68	447.58	385.29	449.06	385.3	453.71	385.19	463.39	384.68
463.96	384.68	468.82	384.87	472.42	384.83				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	237.02	.04	262.36	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
237.02	262.36	103.31	103.53	104.46	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
367.4	402.8	390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6663

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.81	5.71	387.58	42.61	386.42	45.32	386.36	48.81	386.32
50.39	386.29	52.99	386.11	54.86	386	63.52	384	72.4	382
77.53	381.09	78.45	381.02	81.39	381.16	82.73	381.16	83.84	381.06
85.14	381.03	90.04	380.7	91.84	380.48	94.76	380	107.44	379.41
109.18	379.29	112.44	379.13	115.99	378.92	130.42	378	130.89	377.95
160.38	376.65	180.56	376.17	184.97	375.98	189.81	375.85	195.23	375.67
199.49	375.58	206.72	375.37	221.58	374.58	234.91	374	259.85	373.17
294.97	372.71	311.02	372.56	311.04	372.56	319.15	372.49	321.59	371.64
322.41	371.16	323.12	369.4	326.04	369.26	336.33	370.36	339.84	373.35
341.19	373.46	341.21	373.46	355.51	374.57	385.65	374.57	391.75	376
435.14	377.35	436.73	377.48	438.03	377.5	441.59	377.71	445.02	378
461.23	380	462.22	380.21	465.24	380.76	470.16	381.69	472.06	382
479.53	383.54	481.93	384	486.28	384.27	488.32	384.35	505.54	384.31
515.18	384.49	518.45	384.46	533.6	385.11	535.47	385.12	546.46	384.34
548.83	384.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	319.15	.04	339.84	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
319.15	339.84	90.58	94.53	97.72	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
49.7	87.5	390	451.6	492.3	390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6568

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.88	11.84	387.56	41.49	386.42	44.7	386.32	47.75	386.21
48.2	386.2	51.49	386.19	52.85	386.15	53.93	386.14	56.03	386.06
57.13	386	62.1	385.38	72.23	384.41	73.61	384.08	74	384
78.37	383.37	81.15	382.86	83.41	382.52	85.95	382	87.39	381.89
89.26	381.77	106.91	380.23	109.52	380.12	112.81	380	123.86	379.46
127.28	379.12	128.69	379.02	131.4	378.74	133.26	378.6	138.52	378
144.95	377.67	154.93	377.2	167.84	376.57	179.91	376	190.81	375.63
206.03	375.07	215.11	374.75	231.43	374.02	231.55	374	251.99	373.42
286.56	372.07	303.48	372	303.5	372	307.17	371.99	309.55	369.54
314.39	368.65	318.89	369.1	320.63	372.7	333.89	373.01	335.3	373.05
354.94	374.07	388	376.19	406.97	378	432.51	380	436.02	380.51
440.79	381.03	449.38	382	453.12	382.55	464.72	383.92	465.61	384
472.99	385.68	474.22	386	482.07	387.25	486.94	388	503.32	390
506.03	390.12	516.08	390.61	558.49	391.41	562.74	391.48	574.89	391.54

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	307.17	.04	320.63	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
307.17	320.63	112.95	114.27	115.74	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
56.9	70	395	480	528.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6454

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.74	7.58	382.41	11.61	382.36	18.35	382.85	20.37	382.77
21.37	382.79	29.92	382.63	32.76	382.6	39.52	382.39	47.69	382
53.79	381.37	55.59	381.15	62.67	380	71.51	378.91	77.75	378
80.09	377.84	81.89	377.87	84.21	378	85.66	378.04	91.88	378.33
93.96	378.47	103.28	378.95	112.28	379.59	117.21	379.85	119.53	380
122.79	380.14	126.31	380.18	133.22	380	134.81	379.84	137.81	379.45
141.48	378.79	145.53	378	155.89	376	166.96	373.47	173.88	373.47
191.09	372.71	200.3	371.97	201.3	371.89	212.37	370.12	213.27	368.43
215.67	368.3	218.52	368.67	224.12	371.79	230.68	372.35	245.49	373.6
269.36	373.99	286.75	373.99	309.85	374	325.09	374.82	342.86	375.85
347.28	376.79	353.2	378	358.5	378.88	365.42	379.84	366.88	380
374.5	381.38	377.36	382	383.44	382.65	394.15	384	397.08	384.34
402.2	384.86	404.24	385.01	407.53	385.3	408.74	385.37	414.73	385.6
419.68	385.94	428.4	386.28	432.3	386.26	436.12	386.41	452.71	387.66
457.68	388	470.4	388.25						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	201.3	.04	224.12	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
201.3	224.12	102.69	103.78	104.74	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
120.4	125.7	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6350

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.25	2.84	383.98	4.85	383.88	29.21	382.05	29.42	382
31.52	381.83	32.17	381.8	32.46	381.78	34.04	381.73	35.06	381.64
53.47	380.4	61.23	380	61.52	379.95	62.6	379.83	66.18	379.72
67.82	379.63	68.74	379.59	124.99	378	139.11	377.29	159.11	376.32
161.58	376.22	169.81	376	175.65	375.83	176.25	375.83	201	374.61
220.13	373.39	226.47	371.43	230.05	370.32	235.85	369.8	238.08	367.36
241.57	366.97	246.9	368.37	249.25	372.63	256.57	374.75	266.03	377.5
266.59	378	329.45	378	332.13	377.82	334.24	377.69	335.82	377.59
339.75	377.35	347.23	377.86	349.56	378	359.53	377.16	360.29	377.08
378.66	378	382.15	378.35	383.71	378.55	386.87	378.91	388.05	379.05
394.9	380	395.88	380.18	400.2	380.85	405.44	381.69	407.44	382
409.21	382.33	411.05	382.5	417.68	383.44	420.21	383.65	423.51	383.96
426	384.23	427.13	384.2	428.56	384.3	433.67	384.73	437.93	385.11
441.27	385.38	449.14	386.13	468.97	388				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	220.13	.04	249.25	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
220.13	249.25	52.33	53.78	55.24	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent

```
   264.6   271.9     390       F
   325.6   345.5     390       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   271.9   325.6     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6296

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  386.85    5.73  386.49   14.33     386   18.53  385.51   23.71  384.86
   25.79  384.56   29.31     384   30.39   383.8   37.57  382.43   39.51  382.02
   41.76  381.69   54.85     380   70.55   379.5   94.75  378.51   95.08  378.49
   95.41  378.49   98.12  378.36   99.34  378.31  103.26   378.2  106.66  378.14
  108.29  378.08  109.53  378.06  141.16  376.68  172.07   375.5  191.67  374.94
  202.55  371.87  209.11  370.03  214.77  369.87  215.93  367.68  217.55  367.41
  219.25  367.49  221.17     369   223.1  368.24  224.71   368.4  227.95  371.85
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.77  227.95            98.47   99.02   99.58             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 6250

INPUT
Description: Hearthstone Road
Distance from Upstream XS =      41
Deck/Roadway Width        =      30
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  109.53  378.06           126.2 378.165           148.4 377.583
   171.8 377.249           194.8 377.026           219.5 377.097
   242.2 377.664           267.9 378.981           291.3 380.656
   311.7 383.135           336.6 385.512          479.75     398

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  386.85    5.73  386.49   14.33     386   18.53  385.51   23.71  384.86
   25.79  384.56   29.31     384   30.39   383.8   37.57  382.43   39.51  382.02
   41.76  381.69   54.85     380   70.55   379.5   94.75  378.51   95.08  378.49
   95.41  378.49   98.12  378.36   99.34  378.31  103.26   378.2  106.66  378.14
  108.29  378.08  109.53  378.06  141.16  376.68  172.07   375.5  191.67  374.94
  202.55  371.87  209.11  370.03  214.77  369.87  215.93  367.68  217.55  367.41
  219.25  367.49  221.17     369   223.1  368.24  224.71   368.4  227.95  371.85
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
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  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        214.77  227.95             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

Downstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    93.6     378             109 378.165           131.9 377.583
   155.7 377.249           179.1 377.026           204.2 377.097
   227.3 377.664           253.6 378.981           277.3 380.656
   306.1 383.135           331.6 385.512          338.94     386

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.5    2.88  381.26     8.6  380.81   10.21   380.8   18.26  381.42
   23.64  381.72   28.86     382   31.26  382.04   31.91  382.04   38.99     382
   43.19   381.9    43.7  381.88   47.28  381.77   47.53  381.75   49.17   381.7
   49.49  381.68    51.7  381.59   53.73  381.49   76.26  380.56   76.87  380.53
   77.82  380.46   79.53  380.32   83.18     380   86.26  379.56   88.68  379.19
   90.12  378.97   98.61     378  127.05   376.5  131.06   376.5  161.92   376.1
  189.14  374.65  197.54  369.94  197.55  369.93  203.42  366.64  221.43  366.39
  225.24  370.02  227.55  372.22  227.56  372.23  229.54   374.1  255.33   377.5
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        197.54  225.24             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5     373       F
   229.3  443.14     373       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               24.8   62.23     .013     .013        0                  .5               1
Upstream   Elevation =  367.33
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          Centerline Station =  217
Downstream Elevation =  367.76
          Centerline Station =  210

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              24.8   62.41     .013     .013        0                  .5               1
Upstream   Elevation =  367.28
          Centerline Station =  223
Downstream Elevation =  366.19
          Centerline Station =  215

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        100.39    Culv Full Len (ft)         26.19
  # Barrels                      1    Culv Vel US (ft/s)          7.99
  Q Barrel (cfs)            100.39    Culv Vel DS (ft/s)          9.10
  E.G. US. (ft)             373.11    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             373.00    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              371.10    Culv Frctn Ls (ft)          0.13
  W.S. DS (ft)              371.04    Culv Exit Loss (ft)         1.23
  Delta EG (ft)               2.02    Culv Entr Loss (ft)         0.50
  Delta WS (ft)               1.95    Q Weir (cfs)
  E.G. IC (ft)              372.56    Weir Sta Lft (ft)
  E.G. OC (ft)              373.13    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)
  Culv WS Outlet (ft)       371.04    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         3.04    Min El Weir Flow (ft)     377.04


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        157.52    Culv Full Len (ft)         62.23
  # Barrels                      1    Culv Vel US (ft/s)         12.53
  Q Barrel (cfs)            157.52    Culv Vel DS (ft/s)         12.53
  E.G. US. (ft)             376.24    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             376.19    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              371.92    Culv Frctn Ls (ft)          0.75
  W.S. DS (ft)              371.83    Culv Exit Loss (ft)         2.35
  Delta EG (ft)               4.32    Culv Entr Loss (ft)         1.22
  Delta WS (ft)               4.36    Q Weir (cfs)
  E.G. IC (ft)              376.28    Weir Sta Lft (ft)
  E.G. OC (ft)              376.24    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)
  Culv WS Outlet (ft)       371.76    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         3.65    Min El Weir Flow (ft)     377.04


Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note:    The culvert inlet is submerged and the culvert flows full over part or all of its length.
Therefore, the culvert inlet
         equations are not valid and the supercritical result has been discarded.  The outlet answer
will be used.

CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        164.54    Culv Full Len (ft)         62.23
  # Barrels                      1    Culv Vel US (ft/s)         13.09
  Q Barrel (cfs)            164.54    Culv Vel DS (ft/s)         13.09
  E.G. US. (ft)             378.46    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             378.37    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              373.87    Culv Frctn Ls (ft)          0.82
  W.S. DS (ft)              373.64    Culv Exit Loss (ft)         2.44
  Delta EG (ft)               4.59    Culv Entr Loss (ft)         1.33
  Delta WS (ft)               4.73    Q Weir (cfs)              386.81
  E.G. IC (ft)              376.85    Weir Sta Lft (ft)          95.71
  E.G. OC (ft)              378.46    Weir Sta Rgt (ft)         256.10
  Culvert Control           Outlet    Weir Submerg                0.00
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)         1.45
  Culv WS Outlet (ft)       371.76    Weir Avg Depth (ft)         0.90
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)    144.32
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Culv Crt Depth (ft)	3.70	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	152.03	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.10
Q Barrel (cfs)	152.03	Culv Vel DS (ft/s)	12.10
E.G. US. (ft)	379.29	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.07	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	375.68	Culv Frctn Ls (ft)	0.70
W.S. DS (ft)	375.18	Culv Exit Loss (ft)	1.77
Delta EG (ft)	3.62	Culv Entr Loss (ft)	1.14
Delta WS (ft)	3.89	Q Weir (cfs)	1025.76
E.G. IC (ft)	375.85	Weir Sta Lft (ft)	74.47
E.G. OC (ft)	379.29	Weir Sta Rgt (ft)	272.91
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.31
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.51
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	298.83
Culv Crt Depth (ft)	3.61	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	147.56	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.74
Q Barrel (cfs)	147.56	Culv Vel DS (ft/s)	11.74
E.G. US. (ft)	379.65	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.36	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.41	Culv Frctn Ls (ft)	0.66
W.S. DS (ft)	375.77	Culv Exit Loss (ft)	1.50
Delta EG (ft)	3.23	Culv Entr Loss (ft)	1.07
Delta WS (ft)	3.59	Q Weir (cfs)	1355.69
E.G. IC (ft)	375.51	Weir Sta Lft (ft)	65.01
E.G. OC (ft)	379.64	Weir Sta Rgt (ft)	277.61
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.65
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.73
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	367.97
Culv Crt Depth (ft)	3.58	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	143.68	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.43
Q Barrel (cfs)	143.68	Culv Vel DS (ft/s)	11.43
E.G. US. (ft)	379.97	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.63	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	377.08	Culv Frctn Ls (ft)	0.62
W.S. DS (ft)	376.29	Culv Exit Loss (ft)	1.24
Delta EG (ft)	2.89	Culv Entr Loss (ft)	1.02
Delta WS (ft)	3.34	Q Weir (cfs)	1680.96
E.G. IC (ft)	375.23	Weir Sta Lft (ft)	55.78
E.G. OC (ft)	379.96	Weir Sta Rgt (ft)	281.72
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.94
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.91
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	432.41
Culv Crt Depth (ft)	3.54	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	107.61	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	8.56
Q Barrel (cfs)	107.61	Culv Vel DS (ft/s)	8.56
E.G. US. (ft)	373.11	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	373.00	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	371.10	Culv Frctn Ls (ft)	0.35
W.S. DS (ft)	371.04	Culv Exit Loss (ft)	1.08
Delta EG (ft)	2.02	Culv Entr Loss (ft)	0.57
Delta WS (ft)	1.95	Q Weir (cfs)	
E.G. IC (ft)	372.84	Weir Sta Lft (ft)	
E.G. OC (ft)	373.10	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	

Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.14	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	157.48	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.53
Q Barrel (cfs)	157.48	Culv Vel DS (ft/s)	12.53
E.G. US. (ft)	376.24	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	376.19	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	371.92	Culv Frctn Ls (ft)	0.75
W.S. DS (ft)	371.83	Culv Exit Loss (ft)	2.35
Delta EG (ft)	4.32	Culv Entr Loss (ft)	1.22
Delta WS (ft)	4.36	Q Weir (cfs)	
E.G. IC (ft)	376.18	Weir Sta Lft (ft)	
E.G. OC (ft)	376.24	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.65	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	164.65	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	13.10
Q Barrel (cfs)	164.65	Culv Vel DS (ft/s)	13.10
E.G. US. (ft)	378.46	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.37	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	373.87	Culv Frctn Ls (ft)	0.82
W.S. DS (ft)	373.64	Culv Exit Loss (ft)	2.44
Delta EG (ft)	4.59	Culv Entr Loss (ft)	1.33
Delta WS (ft)	4.73	Q Weir (cfs)	386.81
E.G. IC (ft)	376.76	Weir Sta Lft (ft)	95.71
E.G. OC (ft)	378.46	Weir Sta Rgt (ft)	256.10
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	1.45
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	0.90
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	144.32
Culv Crt Depth (ft)	3.70	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	152.21	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.11
Q Barrel (cfs)	152.21	Culv Vel DS (ft/s)	12.11
E.G. US. (ft)	379.29	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.07	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	375.68	Culv Frctn Ls (ft)	0.70
W.S. DS (ft)	375.18	Culv Exit Loss (ft)	1.78
Delta EG (ft)	3.62	Culv Entr Loss (ft)	1.14
Delta WS (ft)	3.89	Q Weir (cfs)	1025.76
E.G. IC (ft)	375.76	Weir Sta Lft (ft)	74.47
E.G. OC (ft)	379.30	Weir Sta Rgt (ft)	272.91
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.31
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.51
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	298.83
Culv Crt Depth (ft)	3.61	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	147.75	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.76
Q Barrel (cfs)	147.75	Culv Vel DS (ft/s)	11.76
E.G. US. (ft)	379.65	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.36	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.41	Culv Frctn Ls (ft)	0.66
W.S. DS (ft)	375.77	Culv Exit Loss (ft)	1.50
Delta EG (ft)	3.23	Culv Entr Loss (ft)	1.07
Delta WS (ft)	3.59	Q Weir (cfs)	1355.69
E.G. IC (ft)	375.43	Weir Sta Lft (ft)	65.01
E.G. OC (ft)	379.65	Weir Sta Rgt (ft)	277.61
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.65

Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.73
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	367.97
Culv Crt Depth (ft)	3.58	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	144.19	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.47
Q Barrel (cfs)	144.19	Culv Vel DS (ft/s)	11.47
E.G. US. (ft)	379.97	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.63	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	377.08	Culv Frctn Ls (ft)	0.63
W.S. DS (ft)	376.29	Culv Exit Loss (ft)	1.25
Delta EG (ft)	2.89	Culv Entr Loss (ft)	1.02
Delta WS (ft)	3.34	Q Weir (cfs)	1680.96
E.G. IC (ft)	375.16	Weir Sta Lft (ft)	55.78
E.G. OC (ft)	379.98	Weir Sta Rgt (ft)	281.72
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.94
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.91
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	432.41
Culv Crt Depth (ft)	3.55	Min El Weir Flow (ft)	377.04

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6197

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39
225.24	370.02	227.55	372.22	227.56	372.23	229.54	374.1	255.33	377.5
286.19	380.21	290.61	381.26	291.85	381.66	302.93	382	306.38	382.34
307.8	382.5	315.82	383.3	321.82	384	332.19	385.15	338.94	386
354.08	387.58	358.3	388	361.22	388.32	364.98	388.73	371.17	389.42
376.5	390	377.44	390.09	382.23	390.53	383.73	390.65	389.09	391.12
395.34	391.57	396	391.63	401.1	392	405.04	392.54	406.26	392.72
413.74	394	418.95	394.57	420.55	394.73	421.65	394.84	427.34	395.45
432.93	395.77	433.17	395.8	434.1	395.89	438.66	396.46	441.16	396.79
443.14	397.11								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	197.54	.04	225.24	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.54	225.24	75.78	74.81	73.83	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	180.5	373	F
229.3	443.14	373	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
23.7	63.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6122

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.69	8.11	379.53	9.53	379.45	17.27	379.23	20.32	379.02
22.13	378.95	24.3	378.81	31.57	378.41	34.72	378.26	38.27	378.14
47.27	377.96	49.2	377.94	52.81	377.79	56.11	377.88	60.11	377.91

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   62.59  377.87   64.37  377.81   65.09  377.76   66.54   377.7   67.14  377.65
   68.62  377.58   71.62  377.27   75.62  376.99    79.3  376.57    81.7  376.35
   84.46     376  105.56  374.69  108.26  374.67  121.47  375.38  123.91   375.3
  125.19  375.41  127.48  375.55  129.74  375.66  131.98  375.57  134.89  375.74
  137.16  375.81  137.87  375.78  140.09  375.81  142.39  375.77  145.17  375.64
     148  375.41   151.1  375.05  154.75  374.52  159.06  373.88  159.11  374.24
   175.4  373.46  185.87  373.46  213.06  372.27  225.58  370.42  231.74  369.51
  232.66  367.04  234.89  366.62  240.64  367.46   244.1  370.65  253.02  370.54
  255.64  371.33  278.66  378.25  302.77  378.97  352.21     380   359.2  381.14
  364.26     382  367.65   382.7  370.16  383.19  373.86     384  378.45  385.21
  381.62     386  383.59  386.52  388.85     388  390.89  388.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  225.58     .04   244.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        225.58   244.1             98.18   94.21   91.92             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
   119.8   162.9     385       F
   185.6   201.5     385       F
   272.4   384.9     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   162.9   185.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6028

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   382.8   19.58  382.41   21.78  382.31   25.29     382   28.82  381.21
   33.73     380   38.53  378.96   47.92  377.02   53.08     376   53.61  375.96
   54.06  375.94    63.8  375.32   75.35  374.08   75.77     374   75.87     374
   79.55   373.5   79.83  373.47   80.44  373.45   80.74   373.5   108.3  372.93
  132.26  372.05  132.53     372  152.08     371  183.23  368.87  204.31   368.6
  204.32   368.6   205.1  368.59  214.72  368.32  216.43  366.61  219.36  365.53
  223.23  366.03  225.53  367.69  234.47  368.82  242.06  369.78  266.05  372.16
  283.38  373.66  295.75  374.49  302.61  375.35  306.21  375.74  307.44   375.9
  308.45     376  309.16  376.16  309.43  376.21  312.19  376.42  326.29  377.09
  336.37  377.85  338.16     378  343.77  379.27  346.84     380  352.57  381.65
  353.72     382  360.42     384  366.91     386  373.75     388  374.25  388.15
  375.39  388.44  376.82  388.77   382.2     390  385.62  390.91   387.5  391.38
  390.05     392  391.18  392.24  393.51   392.7  394.79  392.94   395.7  393.09
  396.68  393.28  398.05   393.5  400.71     394  401.05  394.02  401.31  394.02
  401.89  394.05  402.27  394.05  404.67  394.17

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.72     .04  234.47    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.72  234.47           100.93  101.91  101.19             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
      61   113.9     390       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    19.7      61     390   393.1  404.67     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5926

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.59     5.1     382     9.3  381.27   15.23  380.26   16.79     380
    17.4  379.93   17.99  379.89   25.61  379.19   28.72  378.92   41.87  378.06
   42.14  378.04   42.69  378.01    42.8     378   47.15  377.66   50.35  377.44
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   52.95  377.29   54.78  377.18   55.85  377.13   57.24  377.07   58.56  376.99
   61.22   376.9    62.6   376.8   64.49  376.66    65.4  376.61   68.93  376.32
   69.43  376.28   72.62     376   79.17  375.23   79.85  375.13   81.75  374.86
   86.54  374.13    86.9  374.08   87.35     374   97.43   372.6  101.22     372
  101.71  371.98  102.49  371.97  103.31  371.98  103.65     372   103.7  371.95
  108.23  371.29  120.13  371.02  124.98  371.02  148.13   370.3   170.6  369.08
  174.12  367.61  175.06  367.22  180.45  367.62  186.44  367.24   187.3  365.38
  189.41  365.46  192.74  365.89  197.28  368.62  204.41  369.15  222.38  370.47
  248.76  371.19     255     372  274.29   373.9  275.14     374  287.23     376
  292.49  377.34  295.11     378  299.87  379.19  303.25     380  311.49     382
  318.69  383.66  320.08     384  327.45  385.84  328.11     386  335.19  387.48
  337.59     388  343.86  388.94  350.88     390  354.59  390.61   356.8  390.96

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.44     .04  197.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.44  197.28          102.11  102.54  102.93             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    60.6    75.4     385       F
   103.4   163.4     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    75.4   103.4     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5824

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.17    1.53  379.09    3.56  378.96    5.73   378.8    8.65  378.57
   10.86   378.4   11.67  378.34   15.69     378   20.08  377.29   27.83     376
   29.81  375.82   31.38  375.67   39.63  374.92   42.87  374.63   44.59   374.5
   49.91     374   62.23  371.55   92.34  370.63  109.26   369.2  110.94  369.06
  120.72  365.29  124.37  365.08  126.51  365.24  130.92  367.14  139.51  368.75
  157.36   372.1  180.06  370.47  190.05  370.47  216.33     372  219.38  372.57
  223.55  373.34  225.27  373.66  227.19     374  231.58  375.26  234.22     376
  234.79  376.18  240.58     378  243.82  379.15  246.06     380  248.42  380.86
  251.63     382  257.95  383.86   258.4     384  260.44   384.5  266.77     386
  268.22  386.33  275.61     388  278.96   388.7   285.3     390  291.48  391.05
  292.67  391.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  109.26     .04  139.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        109.26  139.51           75.62   79.21   82.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5745

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     380    15.5  378.48   20.71     378    30.8  377.15   37.79  376.64
    40.3  376.44   46.11  376.04   46.38     376    47.1  375.96   69.11     374
    77.1  373.47  103.89  370.86  131.17   369.6  133.12  368.74  140.37  365.55
  143.61     365  144.73  363.71  148.48  363.03  150.47  363.33   159.4  368.15
  163.52  368.56  176.34  369.82  186.31   370.3  194.64  373.03  209.12  373.26
  225.27  372.55   225.6  372.55  225.92  372.54  226.18  372.55   226.7  372.55
   233.5  372.96   233.9  372.98  234.19     373  234.39     373  234.53  373.01
  234.67  373.01  234.83  373.02  242.93  373.56  243.64  373.58  246.98  373.68
  250.97   373.8  257.66     374  263.52  375.65  264.76     376  265.45  376.19
  271.67     378     272  378.09  278.61     380  283.25  381.15  286.54     382
  296.07  383.94  296.19  383.96  296.34     384  296.53  384.04  296.57  384.04
  296.61  384.05  296.75  384.07  297.08  384.12   302.2  384.91  306.31  385.41
  307.97  385.64  308.53  385.72  311.26     386  312.97  386.11  313.27  386.13
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   317.7  386.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  131.17     .04   159.4    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        131.17   159.4            34.07   34.02   34.04             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   170.3   207.9     385       F
   225.8   247.8     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   207.9   225.8     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5711

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.06  162.62            96.24   96.18   98.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5650

INPUT
Description: Brookemede Road
Distance from Upstream XS =      37
Deck/Roadway Width        =      37
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     101 372.301             151 370.157             188 369.953
   218.7 370.181

Upstream Bridge Cross Section Data
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
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  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        136.06  162.62            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  128.33  372.41           152.3 372.301           202.9 370.157
   238.6 369.953           268.9 370.181

Downstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  375.09    1.07  375.04    1.94  375.04    2.62  375.01    3.78  375.02
       5  374.95    6.16  374.97   13.83   374.5   15.25  374.52   31.31  375.33
   32.18  375.35   39.66   374.3   45.41  373.86   50.93  373.59   53.48  373.55
   59.91  373.31    62.6  373.32   81.57  373.51   85.54  373.44   92.18  373.21
   98.33  373.03  102.35  373.09  105.39  372.98  113.27  372.64  128.33  372.41
  164.68   369.2  190.47  367.33  202.12  366.92  205.34  366.81  210.08   364.6
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        205.34   238.7            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8   367.8       F
     239   440.9   367.8       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  361.93
           Centerline Station =  148
Downstream Elevation =  362.09
           Centerline Station =  215
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Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                15   62.66     .013     .013        0                  .5                1
Upstream   Elevation =  362.32
           Centerline Station =  153
Downstream Elevation =  362.32
           Centerline Station =  220
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CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	104.29	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	8.30
Q Barrel (cfs)	104.29	Culv Vel DS (ft/s)	8.30
E.G. US. (ft)	368.65	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	368.57	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	366.79	Culv Frctn Ls (ft)	0.33
W.S. DS (ft)	366.72	Culv Exit Loss (ft)	1.00
Delta EG (ft)	1.85	Culv Entr Loss (ft)	0.54
Delta WS (ft)	1.85	Q Weir (cfs)	
E.G. IC (ft)	367.36	Weir Sta Lft (ft)	
E.G. OC (ft)	368.66	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.09	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	129.94	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	10.34
Q Barrel (cfs)	129.94	Culv Vel DS (ft/s)	10.34
E.G. US. (ft)	370.71	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	370.66	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	367.81	Culv Frctn Ls (ft)	0.51
W.S. DS (ft)	367.72	Culv Exit Loss (ft)	1.57
Delta EG (ft)	2.90	Culv Entr Loss (ft)	0.83
Delta WS (ft)	2.94	Q Weir (cfs)	55.76
E.G. IC (ft)	368.87	Weir Sta Lft (ft)	138.21
E.G. OC (ft)	370.72	Weir Sta Rgt (ft)	190.67
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	0.75
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	0.54
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	28.20
Culv Crt Depth (ft)	3.41	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	66.03	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.25
Q Barrel (cfs)	66.03	Culv Vel DS (ft/s)	5.25
E.G. US. (ft)	372.45	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.32	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	371.74	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	371.68	Culv Exit Loss (ft)	0.38
Delta EG (ft)	0.71	Culv Entr Loss (ft)	0.21
Delta WS (ft)	0.64	Q Weir (cfs)	585.07
E.G. IC (ft)	365.70	Weir Sta Lft (ft)	90.59
E.G. OC (ft)	372.46	Weir Sta Rgt (ft)	253.30
Culvert Control	Outlet	Weir Submerg	0.55
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	2.48
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.20
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	175.14
Culv Crt Depth (ft)	2.45	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	57.99	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.61
Q Barrel (cfs)	57.99	Culv Vel DS (ft/s)	4.61
E.G. US. (ft)	373.30	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.00	Culv Inv El Dn (ft)	362.09

E.G. DS (ft)	372.83	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.72	Culv Exit Loss (ft)	0.22
Delta EG (ft)	0.47	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.28	Q Weir (cfs)	1215.41
E.G. IC (ft)	365.38	Weir Sta Lft (ft)	75.28
E.G. OC (ft)	373.32	Weir Sta Rgt (ft)	257.47
Culvert Control	Outlet	Weir Submerg	0.72
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.34
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.75
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	319.06
Culv Crt Depth (ft)	2.29	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	54.95	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.37
Q Barrel (cfs)	54.95	Culv Vel DS (ft/s)	4.37
E.G. US. (ft)	373.64	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.21	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.25	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.11	Culv Exit Loss (ft)	0.16
Delta EG (ft)	0.39	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.10	Q Weir (cfs)	1542.35
E.G. IC (ft)	365.26	Weir Sta Lft (ft)	69.68
E.G. OC (ft)	373.65	Weir Sta Rgt (ft)	259.17
Culvert Control	Outlet	Weir Submerg	0.77
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.69
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	2.03
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	384.69
Culv Crt Depth (ft)	2.23	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	60.42	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.81
Q Barrel (cfs)	60.42	Culv Vel DS (ft/s)	4.81
E.G. US. (ft)	373.94	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.39	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.48	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	373.30	Culv Exit Loss (ft)	0.18
Delta EG (ft)	0.46	Culv Entr Loss (ft)	0.18
Delta WS (ft)	0.09	Q Weir (cfs)	1851.51
E.G. IC (ft)	365.47	Weir Sta Lft (ft)	65.10
E.G. OC (ft)	373.95	Weir Sta Rgt (ft)	260.57
Culvert Control	Outlet	Weir Submerg	0.75
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.98
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	2.25
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	440.26
Culv Crt Depth (ft)	2.34	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	103.71	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	8.25
Q Barrel (cfs)	103.71	Culv Vel DS (ft/s)	8.25
E.G. US. (ft)	368.65	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	368.57	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	366.79	Culv Frctn Ls (ft)	0.33
W.S. DS (ft)	366.72	Culv Exit Loss (ft)	0.98
Delta EG (ft)	1.85	Culv Entr Loss (ft)	0.53
Delta WS (ft)	1.85	Q Weir (cfs)	
E.G. IC (ft)	367.71	Weir Sta Lft (ft)	
E.G. OC (ft)	368.63	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.08	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	129.30	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	10.29
Q Barrel (cfs)	129.30	Culv Vel DS (ft/s)	10.29
E.G. US. (ft)	370.71	Culv Inv El Up (ft)	362.32

W.S. US. (ft)	370.66	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	367.81	Culv Frctn Ls (ft)	0.51
W.S. DS (ft)	367.72	Culv Exit Loss (ft)	1.55
Delta EG (ft)	2.90	Culv Entr Loss (ft)	0.82
Delta WS (ft)	2.94	Q Weir (cfs)	55.76
E.G. IC (ft)	369.21	Weir Sta Lft (ft)	138.21
E.G. OC (ft)	370.69	Weir Sta Rgt (ft)	190.67
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	0.75
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	0.54
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	28.20
Culv Crt Depth (ft)	3.40	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	64.90	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.16
Q Barrel (cfs)	64.90	Culv Vel DS (ft/s)	5.16
E.G. US. (ft)	372.45	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.32	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	371.74	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	371.68	Culv Exit Loss (ft)	0.36
Delta EG (ft)	0.71	Culv Entr Loss (ft)	0.21
Delta WS (ft)	0.64	Q Weir (cfs)	585.07
E.G. IC (ft)	366.04	Weir Sta Lft (ft)	90.59
E.G. OC (ft)	372.43	Weir Sta Rgt (ft)	253.30
Culvert Control	Outlet	Weir Submerg	0.55
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	2.48
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.20
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	175.14
Culv Crt Depth (ft)	2.43	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	56.60	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.50
Q Barrel (cfs)	56.60	Culv Vel DS (ft/s)	4.50
E.G. US. (ft)	373.30	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.00	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	372.83	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.72	Culv Exit Loss (ft)	0.21
Delta EG (ft)	0.47	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.28	Q Weir (cfs)	1215.41
E.G. IC (ft)	365.71	Weir Sta Lft (ft)	75.28
E.G. OC (ft)	373.29	Weir Sta Rgt (ft)	257.47
Culvert Control	Outlet	Weir Submerg	0.72
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.34
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.75
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	319.06
Culv Crt Depth (ft)	2.26	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	53.70	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.27
Q Barrel (cfs)	53.70	Culv Vel DS (ft/s)	4.27
E.G. US. (ft)	373.64	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.21	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.25	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.11	Culv Exit Loss (ft)	0.15
Delta EG (ft)	0.39	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.10	Q Weir (cfs)	1542.35
E.G. IC (ft)	365.59	Weir Sta Lft (ft)	69.68
E.G. OC (ft)	373.63	Weir Sta Rgt (ft)	259.17
Culvert Control	Outlet	Weir Submerg	0.77
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.69
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	2.03
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	384.69
Culv Crt Depth (ft)	2.20	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	59.07	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.70
Q Barrel (cfs)	59.07	Culv Vel DS (ft/s)	4.70

E.G. US. (ft)	373.94	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.39	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.48	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	373.30	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.46	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.09	Q Weir (cfs)	1851.51
E.G. IC (ft)	365.81	Weir Sta Lft (ft)	65.10
E.G. OC (ft)	373.93	Weir Sta Rgt (ft)	260.57
Culvert Control	Outlet	Weir Submerg	0.75
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.98
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	2.25
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	440.26
Culv Crt Depth (ft)	2.32	Min El Weir Flow (ft)	369.97

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5614

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	375.09	1.07	375.04	1.94	375.04	2.62	375.01	3.78	375.02
5	374.95	6.16	374.97	13.83	374.5	15.25	374.52	31.31	375.33
32.18	375.35	39.66	374.3	45.41	373.86	50.93	373.59	53.48	373.55
59.91	373.31	62.6	373.32	81.57	373.51	85.54	373.44	92.18	373.21
98.33	373.03	102.35	373.09	105.39	372.98	113.27	372.64	128.33	372.41
164.68	369.2	190.47	367.33	202.12	366.92	205.34	366.81	210.08	364.6
211.22	364.43	215.09	361.81	217.13	362.04	229.59	362.98	238.7	368.44
238.98	368.61	251.44	369.69	268.94	370.18	285.07	369.62	290.27	370.06
298.37	370.04	306.37	370.28	324.69	371.75	335.39	372	342.38	373.55
344.58	374	353.22	376	364.13	378	366.42	378.31	380.54	380.03
386.38	380.25	391.69	380.39	399.18	380.94	403.65	381.15	406.06	381.34
407.91	381.42	410.66	381.64	411.73	381.67	415.82	382	420.24	382.3
421.1	382.39	423.89	382.58	424.39	382.64	428.52	382.91	431.83	383.32
435.07	383.79	435.47	383.82	436.48	384	438.12	384.43	440.9	385.22

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	205.34	.04	238.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
205.34	238.7	60.47	54.67	45.26	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	193.8	367.8	F
239	440.9	367.8	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
72.7	102.2	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5560

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.71	12.44	380.66	20.28	380.48	30.01	380.06	32.55	380
35.14	379.9	40.44	379.76	66.9	378.85	77.73	378.19	86.8	377.53
106.28	376	135.5	374	137.27	373.83	145.55	373.21	146.86	373.14
152.29	373.03	158.19	372.73	169.54	372.53	171.14	372.42	174.7	372
177.92	371.83	200.19	370.97	216.51	371.11	224.54	370.88	233.81	370.74
237.26	370.65	249.92	370	272.36	369.5	305.11	368.25	330.75	367.7
351.63	367.26	351.64	367.26	352.8	367.24	361.62	364.64	365.14	363.68
366.63	362.08	370.12	362.09	377.69	362.11	381.2	366.86	381.86	366.92
381.88	366.92	400.75	368.4	415.84	369.84	428.22	370.13	441.48	370.08
454.62	370.47	468.56	371.58	474.03	371.79	478.41	372	486.49	373.21
492.4	374	496.8	374.72	506.14	376	510.13	376.65	519.35	378
525.84	378.52	527.4	378.56	530.32	378.74	538.47	379.03	541.22	379.02
541.91	379.05	543.2	379.02	545.47	379.17	545.81	379.17	552.05	379.68
557.2	380.19	563.37	380.95	569.96	382	577.27	384	584.9	386

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   352.8     .04   381.2    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         352.8   381.2            56.62   49.74    41.3             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5510

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        251.67  273.96            36.56   36.42   38.18             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385          F
   180.5   232.8     385          F
   232.8   241.8  367.86          F
   281.5   313.2  368.03          F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 5500

INPUT
Description: Driveway
Distance from Upstream XS =    8.75
Deck/Roadway Width        =    11.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     245     368           246.3 368.296           251.7 369.922 368.922
   261.7 369.925 368.925   272.1 369.867 368.867   278.5 368.291
     281   367.8

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
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  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        251.67  273.96            .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  218.37  367.75           222.9 368.709           228.8 369.891 368.891
   238.9 369.925 368.925     248 369.959 368.959   254.6 368.591
  256.61  368.13

Downstream Bridge Cross Section Data
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.2    5.49  380.43   19.15  378.55   22.99     378   24.44  377.87
    27.6  377.66   28.15  377.66   32.08  377.85   34.11  377.81   34.84  377.86
   36.16  377.76    36.5  377.71   36.95   377.6   37.24  377.63   37.53  377.55
   43.71  377.04   44.96  377.01   53.85  377.19   61.96  376.88   69.36  376.67
    78.2  376.53   80.32  376.46   85.59  376.16   86.54  376.08   87.13     376
   96.16     374  106.12     372  115.26     370  135.49  369.25  142.97   369.5
  155.72     370  160.13  369.38  160.65  369.34  161.19  369.38  161.22  369.44
  161.24  368.96  165.72  368.71  205.57  368.19  226.91  367.45  227.84  367.41
  239.06  361.76  241.96   361.6  245.76  361.52  251.97  367.85  256.98  368.15
  272.47  369.07  292.37  370.16  313.15  370.81  318.99   371.3  321.33   371.4
  339.22  371.96  340.43     372  349.15  373.24   355.3     374  368.27  375.86
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        227.84  251.97            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
```

Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

			Element	Inside BR US	Inside BR DS
E.G. US. (ft)	366.58		E.G. Elev (ft)	366.52	366.38
W.S. US. (ft)	366.23		W.S. Elev (ft)	366.14	366.18
Q Total (cfs)	208.00		Crit W.S. (ft)	365.15	364.18
Q Bridge (cfs)	208.00		Max Chl Dpth (ft)	3.98	4.66
Q Weir (cfs)			Vel Total (ft/s)	4.93	3.59
Weir Sta Lft (ft)			Flow Area (sq ft)	42.22	57.98
Weir Sta Rgt (ft)			Froude # Chl	0.44	0.29
Weir Submerg			Specif Force (cu ft)	96.58	136.28
Weir Max Depth (ft)			Hydr Depth (ft)	2.53	3.27
Min El Weir Flow (ft)	367.87		W.P. Total (ft)	19.51	22.13
Min El Prs (ft)	368.93		Conv. Total (cfs)	2623.6	4094.1
Delta EG (ft)	0.24		Top Width (ft)	16.70	17.74
Delta WS (ft)	0.08		Frctn Loss (ft)	0.04	0.04
BR Open Area (sq ft)	95.52		C & E Loss (ft)	0.09	0.01
BR Open Vel (ft/s)	4.93		Shear Total (lb/sq ft)	0.85	0.42
BR Sluice Coef			Power Total (lb/ft s)	4.18	1.51
BR Sel Method	Energy only				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

			Element	Inside BR US	Inside BR DS
E.G. US. (ft)	367.61		E.G. Elev (ft)	367.55	367.42
W.S. US. (ft)	367.22		W.S. Elev (ft)	367.11	367.15
Q Total (cfs)	315.00		Crit W.S. (ft)	365.80	364.84
Q Bridge (cfs)	315.00		Max Chl Dpth (ft)	4.95	5.63
Q Weir (cfs)			Vel Total (ft/s)	5.30	4.14
Weir Sta Lft (ft)			Flow Area (sq ft)	59.44	76.01
Weir Sta Rgt (ft)			Froude # Chl	0.42	0.31
Weir Submerg			Specif Force (cu ft)	165.79	218.30
Weir Max Depth (ft)			Hydr Depth (ft)	3.17	3.96
Min El Weir Flow (ft)	367.87		W.P. Total (ft)	22.77	24.98
Min El Prs (ft)	368.93		Conv. Total (cfs)	4185.9	5929.7
Delta EG (ft)	0.25		Top Width (ft)	18.77	19.22
Delta WS (ft)	0.09		Frctn Loss (ft)	0.04	0.04
BR Open Area (sq ft)	95.52		C & E Loss (ft)	0.08	0.02
BR Open Vel (ft/s)	5.30		Shear Total (lb/sq ft)	0.92	0.54
BR Sluice Coef			Power Total (lb/ft s)	4.89	2.22
BR Sel Method	Energy only				

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Element	Inside BR US	Inside BR DS
E.G. US. (ft)	371.70		E.G. Elev (ft)	371.67	371.65
W.S. US. (ft)	371.60		W.S. Elev (ft)	371.62	371.60
Q Total (cfs)	716.00		Crit W.S. (ft)	367.55	366.66
Q Bridge (cfs)	231.88		Max Chl Dpth (ft)	9.45	10.08
Q Weir (cfs)			Vel Total (ft/s)	1.61	1.50
Weir Sta Lft (ft)			Flow Area (sq ft)	443.37	476.35
Weir Sta Rgt (ft)			Froude # Chl	0.11	0.10
Weir Submerg			Specif Force (cu ft)	959.83	1113.84
Weir Max Depth (ft)			Hydr Depth (ft)	2.50	2.58
Min El Weir Flow (ft)	367.87		W.P. Total (ft)	226.19	239.72
Min El Prs (ft)	368.93		Conv. Total (cfs)	17368.8	19497.7
Delta EG (ft)	0.07		Top Width (ft)	229.89	184.36
Delta WS (ft)	0.05		Frctn Loss (ft)	0.02	0.01
BR Open Area (sq ft)	95.52		C & E Loss (ft)	0.00	0.01
BR Open Vel (ft/s)	2.43		Shear Total (lb/sq ft)	0.21	0.17
BR Sluice Coef			Power Total (lb/ft s)	0.34	0.25
BR Sel Method	Energy only				

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.75	Element		
W.S. US. (ft)	372.59	E.G. Elev (ft)	372.70	372.67
Q Total (cfs)	1330.00	W.S. Elev (ft)	372.62	372.59
Q Bridge (cfs)	263.98	Crit W.S. (ft)	370.37	368.96
Q Weir (cfs)		Max Chl Dpth (ft)	10.46	11.07
Weir Sta Lft (ft)		Vel Total (ft/s)	2.10	1.98
Weir Sta Rgt (ft)		Flow Area (sq ft)	634.77	673.34
Weir Submerg		Froude # Chl	0.13	0.12
Weir Max Depth (ft)		Specif Force (cu ft)	1549.81	1734.80
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.17	3.27
Min El Prs (ft)	368.93	W.P. Total (ft)	248.80	263.55
Delta EG (ft)	0.12	Conv. Total (cfs)	28247.5	30736.5
Delta WS (ft)	0.11	Top Width (ft)	252.37	206.05
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.02
BR Open Vel (ft/s)	2.76	C & E Loss (ft)	0.00	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.35	0.30
BR Sel Method	Energy only	Power Total (lb/ft s)	0.74	0.59

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.15	Element		
W.S. US. (ft)	372.96	E.G. Elev (ft)	373.09	373.06
Q Total (cfs)	1651.00	W.S. Elev (ft)	372.99	372.97
Q Bridge (cfs)	277.45	Crit W.S. (ft)	370.69	370.37
Q Weir (cfs)		Max Chl Dpth (ft)	10.83	11.45
Weir Sta Lft (ft)		Vel Total (ft/s)	2.32	2.20
Weir Sta Rgt (ft)		Flow Area (sq ft)	711.21	751.29
Weir Submerg		Froude # Chl	0.13	0.13
Weir Max Depth (ft)		Specif Force (cu ft)	1836.78	2033.73
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.46	3.57
Min El Prs (ft)	368.93	W.P. Total (ft)	254.17	268.85
Delta EG (ft)	0.14	Conv. Total (cfs)	33229.6	35823.7
Delta WS (ft)	0.14	Top Width (ft)	257.69	210.54
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.03	0.02
BR Open Vel (ft/s)	2.90	C & E Loss (ft)	0.00	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.43	0.37
BR Sel Method	Energy only	Power Total (lb/ft s)	1.00	0.81

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #200-YR

E.G. US. (ft)	373.35	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	373.09	E.G. Elev (ft)	373.35	373.32
Q Total (cfs)	1971.00	W.S. Elev (ft)	373.09	373.09
Q Bridge (cfs)	316.42	Crit W.S. (ft)	370.90	370.65
Q Weir (cfs)	1654.58	Max Chl Dpth (ft)	10.93	11.57
Weir Sta Lft (ft)	121.79	Vel Total (ft/s)	2.51	2.37
Weir Sta Rgt (ft)	385.13	Flow Area (sq ft)	786.30	833.20
Weir Submerg	0.98	Froude # Chl	0.15	0.15
Weir Max Depth (ft)	5.49	Specif Force (cu ft)	1958.31	2169.52
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.80	3.93
Min El Prs (ft)	368.93	W.P. Total (ft)	255.63	270.53
Delta EG (ft)	0.03	Conv. Total (cfs)		
Delta WS (ft)	0.01	Top Width (ft)	259.13	211.96
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	3.31	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy have been projected
from the downstream cross section. The selected bridge modeling method does not compute answers inside the
bridge.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5474

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87
27.6	377.66	28.15	377.66	32.08	377.85	34.11	377.81	34.84	377.86
36.16	377.76	36.5	377.71	36.95	377.6	37.24	377.63	37.53	377.55
43.71	377.04	44.96	377.01	53.85	377.19	61.96	376.88	69.36	376.67
78.2	376.53	80.32	376.46	85.59	376.16	86.54	376.08	87.13	376
96.16	374	106.12	372	115.26	370	135.49	369.25	142.97	369.5
155.72	370	160.13	369.38	160.65	369.34	161.19	369.38	161.22	369.44
161.24	368.96	165.72	368.71	205.57	368.19	226.91	367.45	227.84	367.41
239.06	361.76	241.96	361.6	245.76	361.52	251.97	367.85	256.98	368.15
272.47	369.07	292.37	370.16	313.15	370.81	318.99	371.3	321.33	371.4
339.22	371.96	340.43	372	349.15	373.24	355.3	374	368.27	375.86
369.44	376	372.93	376.21	375.85	376.35	378.58	376.44	379.95	376.57
383.94	376.7	387.23	377.09	388.78	377.16	390.64	377.28	394.93	378
401.34	379.4	405.24	380.21	406.53	380.45	414	382	419.84	383.75
427.66	386.31								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	227.84	.04	251.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
227.84	251.97	54.4	54.86	54.94	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	224.3	367.75	F
255.8	292.3	368.13	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	29.9	385	170.3	205.7	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5419

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.86	3.78	380.71	4.98	380.68	6.09	380.65	17.15	380.11
18.16	380	18.96	379.91	19.28	379.88	19.92	379.82	26.66	379.12
33.04	378.58	34.43	378.44	39.87	378	40.43	377.97	45.3	377.68
47.96	377.57	55.03	377.19	58.61	377.04	63.94	376.76	68.35	376.51
75.42	376.11	77.27	376	79.39	375.6	88.74	374	95.93	372.25
103.06	370.55	105.38	370	106.52	369.95	124.3	369.13	143.21	368.92
147.73	368.65	154.71	368.29	193.74	367.43	212.87	367.11	212.89	367.11
213.8	367.1	221.32	362.36	228.08	361.46	230.72	362.15	234.51	367.15
243.11	367.53	243.13	367.53	255.89	368.1	273.39	369.09	289.93	371.07
313.65	371.93	314.49	371.98	314.7	372	316.49	372.27	319.14	372.61
322.78	373.12	328.35	373.78	330.34	374.01	330.63	374.04	333.66	374.3
334.1	374.33	334.72	374.39	338.27	374.58	342.52	374.8	344.74	375.07
346.7	375.32	347.32	375.37	350.65	375.82	350.83	375.84	351.12	375.87
351.94	376	361.89	378	362.32	378.12	369.2	380	375.4	382
381.54	384	387.14	386						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.8	.04	234.51	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.8	234.51	93.04	95.36	97.65	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	25.8	385	F
161.5	202.4	385	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5323

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.88	33.33	380.11	40.06	380	44.89	379.5	59	378
67.02	377.3	71.41	376.93	82.12	376	85.17	375.72	86.89	375.57
104.57	374	104.96	373.94	105.28	373.89	109.01	373.33	110.74	373.08
113.95	372.58	116.4	372.26	118.47	372	119.44	371.89	121.49	371.67
125.25	371.29	126.03	371.19	132.92	370	135.4	369.51	137.55	369.08
143.39	368.87	152.17	368.34	189.23	365.45	207.94	365.88	213.15	366
215.76	361.32	219.54	361.54	222.99	361.95	225.61	363.08	227.85	363.55
233.11	366.26	238	366.82	242.41	367.33	259.77	368.53	278.63	371.43
280.36	372	318.89	376	320.12	376.01	321.57	376.05	349.64	377.86
349.73	377.86	349.8	377.87	351.93	378	359.87	379.62	362.53	380
367.1	381.08	369.42	381.61	370.97	382	374.97	382.95	379.47	384
383.38	384.6	383.92	384.68						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.15	.04	233.11	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.15	233.11	116.69	114.31	111.9	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	28.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5209

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.03	.15	378.03	1.95	378	2.36	377.96	6.29	377.85
16.45	377.5	32.34	376.94	33.33	376.83	33.48	376.82	33.68	376.79
33.96	376.77	34.79	376.69	35.57	376.61	36.06	376.58	36.71	376.52
37.31	376.46	37.67	376.43	38.36	376.39	38.61	376.37	39.48	376.31
42.48	376.17	42.92	376.13	45.71	376	45.73	376	49.13	375.52
50	375.39	51.69	375.13	54.05	374.76	55.37	374.56	56.81	374.32
58.6	374	58.66	374	59.06	373.96	84.53	372.91	98.55	372.35
98.82	372.33	99.63	372.28	103.93	372.02	104.29	372	104.3	372
106.14	371.66	116.08	370.04	116.42	370	139.5	368.78	180.51	365.75
201.11	365.1	209.66	364.83	212.88	361.1	216.14	361.11	219.68	361.44
225.21	365.18	231.24	365.5	231.26	365.5	242.79	366.12	270.5	369.12
274.64	369.12	323.97	372.18	340.57	374.96	340.58	375.25	340.59	375.28
344.72	375.7	345.37	375.76	347.71	376	348.59	376.15		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.66	.04	225.21	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.66	225.21	111.42	101.59	91.47	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
298.8	301.6	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	22.5	380	270.4	298.8	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5107

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.01	.24	376	7.07	375.83	9.07	375.73	10.81	375.67
14.62	375.53	15.38	375.51	17.77	375.4	18.91	375.37	34.75	374.53
41.77	374.45	50.79	374.46	55.85	374.46	57.09	374.44	66.02	374.11
71.3	374	75.88	373.97	100.91	373.67	129.38	373.15	147.16	372.84
170.03	372.61	172.25	372.56	172.92	372.55	178.44	372.44	185.81	372.3
200.51	372.07	201.43	371.98	201.7	371.98	202.67	371.92	215.72	371.52
224.6	371.21	235.57	370.77	237.04	370.74	250.15	370.35	252.81	370.32
253.08	370.31	263.87	370.17	266.55	370.18	267.52	370.19	268.58	370.13
278.39	370.23	284.41	370.28	291.18	370.38	294.8	370.34	311.68	370.28
315.54	370.35	315.75	370.35	322.33	370.22	323.94	370.21	332.11	370.09
355.05	371.1	364.88	371.1	382.36	369.28	393.14	367.95	393.15	367.95
397.41	367.43	406.55	360.36	409.03	359.92	412.88	360.59	414.63	362.95
416.03	363.17	422.1	365.13	424.57	365.29	439.58	366.25	464.4	370.03
475.81	370.03	507.28	370.74	534.67	372.32	549.02	374.66	549.03	374.92
549.05	374.92	551.62	375.01	559.75	376	561.38	376.32		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	397.41	.04	422.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.41	422.1	67.29	67.07	66.86	.1 .3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
295.8	317.3	380	F
445.9	465.3	380	F
474.6	515.9	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
317.3	364.3	380	465.3	474.6	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5040

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
       0     376    3.61  375.88   21.39  374.91   24.35   374.9   39.18  375.08
   42.63  375.04   47.14   374.9   52.43  374.83    54.6  374.82   57.34  374.78
   60.84  374.76   65.24  374.68    66.8  374.67   69.29  374.63   82.36  374.74
   84.96  374.72    94.2  374.58   98.84  374.02   99.09     374  100.29  373.97
  104.65  373.88  105.56  373.85  106.59  373.78  109.92  373.71  111.01   373.7
  130.98   373.7  135.97  373.62  165.62  372.83  166.72  372.81  174.13  372.86
  190.11     373  193.32     373  195.48  372.98  206.16  372.44  206.59  372.42
  208.47   372.4  218.24   372.4  219.79  372.28  225.13     372  226.38  371.95
  226.58  371.93  245.52  371.43  256.75  371.11  261.14  370.99  264.15   370.9
  269.51  370.76  283.05  370.32  296.66  370.06  300.29     370   307.5  369.97
  310.36  369.98  336.01  370.03  366.23  369.58  397.63  368.96  412.55   368.2
  412.96  367.93   415.6 366.107  424.49  359.97  427.96  359.23  429.97  359.61
   432.2  361.31  434.59   361.8  443.41   365.9  443.42  365.91   448.7  368.36
  463.33  369.65  490.22  370.98  518.26  372.76  527.06  373.76  535.03     374
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         415.6  443.41           104.82   108.2  107.53             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5000

INPUT
Description: Longview Drive
Distance from Upstream XS =      38
Deck/Roadway Width        =      27
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     122     374             231     372           346.8 370.217
   363.6 369.987           384.5  369.89             390 370.049
   400.6 370.192           404.7 370.096           417.9 370.146
   433.4  370.53           456.1 371.384           479.9   372.4
   523.7     374           556.9     376

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     376    3.61  375.88   21.39  374.91   24.35   374.9   39.18  375.08
   42.63  375.04   47.14   374.9   52.43  374.83    54.6  374.82   57.34  374.78
   60.84  374.76   65.24  374.68    66.8  374.67   69.29  374.63   82.36  374.74
   84.96  374.72    94.2  374.58   98.84  374.02   99.09     374  100.29  373.97
  104.65  373.88  105.56  373.85  106.59  373.78  109.92  373.71  111.01   373.7
  130.98   373.7  135.97  373.62  165.62  372.83  166.72  372.81  174.13  372.86
  190.11     373  193.32     373  195.48  372.98  206.16  372.44  206.59  372.42
  208.47   372.4  218.24   372.4  219.79  372.28  225.13     372  226.38  371.95
  226.58  371.93  245.52  371.43  256.75  371.11  261.14  370.99  264.15   370.9
  269.51  370.76  283.05  370.32  296.66  370.06  300.29     370   307.5  369.97
  310.36  369.98  336.01  370.03  366.23  369.58  397.63  368.96  412.55   368.2
  412.96  367.93   415.6 366.107  424.49  359.97  427.96  359.23  429.97  359.61
   432.2  361.31  434.59   361.8  443.41   365.9  443.42  365.91   448.7  368.36
  463.33  369.65  490.22  370.98  518.26  372.76  527.06  373.76  535.03     374
  548.23  375.55  551.99     376  559.22  376.93   568.7     378  584.52  379.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   415.6     .04  443.41    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         415.6  443.41             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

Downstream  Deck/Roadway Coordinates
    num=      15
```

```
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  375.75             124     374           270.8     372
   386.7 370.217           403.6 369.987           424.4  369.89
   429.9 370.049           440.5 370.192           444.4 370.096
   457.6 370.146           473.1  370.53           495.7 371.384
   519.5   372.4           561.3     374           594.1     376

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  381.34    1.15  381.36    5.15  381.18    6.14   381.2    7.86  381.16
   10.94  381.18   23.92     381   30.33  380.86   45.55  380.35   51.93  380.07
   65.77   379.6   68.46  379.68   70.71  379.61   75.04  379.33   80.36  379.11
  107.04  378.79  117.65  378.45  125.92     378  132.09  376.99  138.71     376
  142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
  164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
  181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
  210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
   248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
  296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
  405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
  444.02  363.09  449.76  359.84  461.09  359.04  468.33 363.925  475.48  368.75
  476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
  568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
  588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
  633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        442.94  468.33            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442  370.15       F
   476.1  633.02  370.15       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   68.79     .024     .024        0                  .5                1
Upstream   Elevation =  359.44
           Centerline Station =  425
Downstream Elevation =  359.83
           Centerline Station =  450

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   70.81     .024     .024        0                  .5                1
Upstream   Elevation =  359.39
           Centerline Station =  432
Downstream Elevation =  359.74
           Centerline Station =  457

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        103.43    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          5.32
  Q Barrel (cfs)            103.43    Culv Vel DS (ft/s)          6.75
  E.G. US. (ft)             363.85    Culv Inv El Up (ft)       359.44
  W.S. US. (ft)             363.52    Culv Inv El Dn (ft)       359.83
```

E.G. DS (ft)	362.81	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	362.54	Culv Exit Loss (ft)	0.45
Delta EG (ft)	1.04	Culv Entr Loss (ft)	0.22
Delta WS (ft)	0.98	Q Weir (cfs)	
E.G. IC (ft)	362.91	Weir Sta Lft (ft)	
E.G. OC (ft)	363.85	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.19	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.54	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.12	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	157.37	Culv Full Len (ft)	67.91
# Barrels	1	Culv Vel US (ft/s)	7.90
Q Barrel (cfs)	157.37	Culv Vel DS (ft/s)	7.92
E.G. US. (ft)	366.16	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	366.01	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	364.04	Culv Frctn Ls (ft)	0.87
W.S. DS (ft)	363.80	Culv Exit Loss (ft)	0.73
Delta EG (ft)	2.11	Culv Entr Loss (ft)	0.48
Delta WS (ft)	2.21	Q Weir (cfs)	
E.G. IC (ft)	364.55	Weir Sta Lft (ft)	
E.G. OC (ft)	366.14	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	
Culv WS Outlet (ft)	363.80	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.78	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	106.85	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	5.36
Q Barrel (cfs)	106.85	Culv Vel DS (ft/s)	5.36
E.G. US. (ft)	371.49	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	371.43	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	370.49	Culv Frctn Ls (ft)	0.40
W.S. DS (ft)	370.41	Culv Exit Loss (ft)	0.37
Delta EG (ft)	1.00	Culv Entr Loss (ft)	0.22
Delta WS (ft)	1.02	Q Weir (cfs)	501.97
E.G. IC (ft)	363.00	Weir Sta Lft (ft)	264.04
E.G. OC (ft)	371.48	Weir Sta Rgt (ft)	458.61
Culvert Control	Outlet	Weir Submerg	0.16
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	1.60
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	0.95
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	185.18
Culv Crt Depth (ft)	2.17	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	43.20	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.17
Q Barrel (cfs)	43.20	Culv Vel DS (ft/s)	2.17
E.G. US. (ft)	372.35	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.22	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.25	Culv Frctn Ls (ft)	0.07
W.S. DS (ft)	372.11	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.10	Culv Entr Loss (ft)	0.04
Delta WS (ft)	0.11	Q Weir (cfs)	1243.49
E.G. IC (ft)	361.35	Weir Sta Lft (ft)	218.85
E.G. OC (ft)	372.35	Weir Sta Rgt (ft)	478.80
Culvert Control	Outlet	Weir Submerg	0.85
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.46
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.48
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	384.33
Culv Crt Depth (ft)	1.28	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	40.30	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.02
Q Barrel (cfs)	40.30	Culv Vel DS (ft/s)	2.02
E.G. US. (ft)	372.65	Culv Inv El Up (ft)	359.44

W.S. US. (ft)	372.47	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.56	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.37	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.09	Q Weir (cfs)	1570.31
E.G. IC (ft)	361.27	Weir Sta Lft (ft)	202.03
E.G. OC (ft)	372.65	Weir Sta Rgt (ft)	486.71
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.76
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.64
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	465.91
Culv Crt Depth (ft)	1.22	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	30.96	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	1.55
Q Barrel (cfs)	30.96	Culv Vel DS (ft/s)	1.55
E.G. US. (ft)	372.86	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.63	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.80	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	372.56	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.05	Culv Entr Loss (ft)	0.02
Delta WS (ft)	0.07	Q Weir (cfs)	1909.01
E.G. IC (ft)	360.99	Weir Sta Lft (ft)	197.23
E.G. OC (ft)	372.85	Weir Sta Rgt (ft)	493.35
Culvert Control	Outlet	Weir Submerg	0.85
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	3.00
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.81
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	536.35
Culv Crt Depth (ft)	1.08	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	104.57	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.36
Q Barrel (cfs)	104.57	Culv Vel DS (ft/s)	6.63
E.G. US. (ft)	363.85	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	363.52	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	362.81	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	362.54	Culv Exit Loss (ft)	0.42
Delta EG (ft)	1.04	Culv Entr Loss (ft)	0.22
Delta WS (ft)	0.98	Q Weir (cfs)	
E.G. IC (ft)	362.89	Weir Sta Lft (ft)	
E.G. OC (ft)	363.84	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.17	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.54	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.14	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	157.63	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	7.91
Q Barrel (cfs)	157.63	Culv Vel DS (ft/s)	7.91
E.G. US. (ft)	366.16	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	366.01	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	364.04	Culv Frctn Ls (ft)	0.91
W.S. DS (ft)	363.80	Culv Exit Loss (ft)	0.73
Delta EG (ft)	2.11	Culv Entr Loss (ft)	0.49
Delta WS (ft)	2.21	Q Weir (cfs)	
E.G. IC (ft)	364.51	Weir Sta Lft (ft)	
E.G. OC (ft)	366.17	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.78	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	107.17	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	5.38
Q Barrel (cfs)	107.17	Culv Vel DS (ft/s)	5.38

E.G. US. (ft)	371.49	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	371.43	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	370.49	Culv Frctn Ls (ft)	0.42
W.S. DS (ft)	370.41	Culv Exit Loss (ft)	0.37
Delta EG (ft)	1.00	Culv Entr Loss (ft)	0.22
Delta WS (ft)	1.02	Q Weir (cfs)	501.97
E.G. IC (ft)	362.95	Weir Sta Lft (ft)	264.04
E.G. OC (ft)	371.50	Weir Sta Rgt (ft)	458.61
Culvert Control	Outlet	Weir Submerg	0.16
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	1.60
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	0.95
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	185.18
Culv Crt Depth (ft)	2.17	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	43.31	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.17
Q Barrel (cfs)	43.31	Culv Vel DS (ft/s)	2.17
E.G. US. (ft)	372.35	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.22	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.25	Culv Frctn Ls (ft)	0.07
W.S. DS (ft)	372.11	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.10	Culv Entr Loss (ft)	0.04
Delta WS (ft)	0.11	Q Weir (cfs)	1243.49
E.G. IC (ft)	361.30	Weir Sta Lft (ft)	218.85
E.G. OC (ft)	372.35	Weir Sta Rgt (ft)	478.80
Culvert Control	Outlet	Weir Submerg	0.85
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.46
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.48
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	384.33
Culv Crt Depth (ft)	1.28	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	40.39	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.03
Q Barrel (cfs)	40.39	Culv Vel DS (ft/s)	2.03
E.G. US. (ft)	372.65	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.47	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.56	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.37	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.09	Q Weir (cfs)	1570.31
E.G. IC (ft)	361.22	Weir Sta Lft (ft)	202.03
E.G. OC (ft)	372.65	Weir Sta Rgt (ft)	486.71
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.76
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.64
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	465.91
Culv Crt Depth (ft)	1.22	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	31.03	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	1.56
Q Barrel (cfs)	31.03	Culv Vel DS (ft/s)	1.56
E.G. US. (ft)	372.86	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.63	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.80	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	372.56	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.05	Culv Entr Loss (ft)	0.02
Delta WS (ft)	0.07	Q Weir (cfs)	1909.01
E.G. IC (ft)	360.94	Weir Sta Lft (ft)	197.23
E.G. OC (ft)	372.86	Weir Sta Rgt (ft)	493.35
Culvert Control	Outlet	Weir Submerg	0.85
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	3.00
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.81
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	536.35
Culv Crt Depth (ft)	1.08	Min El Weir Flow (ft)	370.12

CROSS SECTION

RIVER: Plumtree

REACH: Plumtree RS: 4932

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.34	1.15	381.36	5.15	381.18	6.14	381.2	7.86	381.16
10.94	381.18	23.92	381	30.33	380.86	45.55	380.35	51.93	380.07
65.77	379.6	68.46	379.68	70.71	379.61	75.04	379.33	80.36	379.11
107.04	378.79	117.65	378.45	125.92	378	132.09	376.99	138.71	376
142.75	375.74	145.13	375.77	151.41	375.65	152.99	375.6	162.62	375.4
164.08	375.33	165.89	375.33	172.24	375.73	177.38	376	177.63	376.05
181.27	376.17	185.16	376.34	192.75	376.58	200.87	376.58	208.17	376.57
210.94	376.5	239.9	376	245.1	375.7	245.52	375.7	248.29	375.54
248.6	375.54	250.31	375.45	256.27	375.5	262.18	375.3	281.18	374
296.71	372.3	299.71	372	320.36	371.86	345.94	370.82	375.13	370.26
405.43	368.96	424.73	368.62	429.83	363.66	442.94	363.7	444	363.1
444.02	363.09	449.76	359.84	461.09	359.04	468.33	363.925	475.48	368.75
476.07	368.78	476.1	368.79	501.36	370.51	527.01	371.18	549.43	374
568.87	375.7	572.79	376	583.63	376.6	584.84	376.64	587.35	376.78
588.79	376.83	590.9	376.94	610.8	377.12	614.03	377.22	619.02	377.46
633.02	378.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	442.94	.04	468.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
442.94	468.33	86.54	87.15	87.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	442	370.15	F
476.1	633.02	370.15	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4845

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.58	4.55	380.55	6.68	380.49	9.66	380.28	16.63	379.98
26.33	379.81	62.1	378.84	98.92	378	99.32	377.89	136.94	376
143	375.91	149.44	376	152.28	376.1	156.17	376.13	191.4	376.8
203.32	376.79	209.98	376.63	238.93	376.59	244.45	376.21	250.81	376
261.25	374.62	275.77	372	281.64	371.31	290.21	370.67	304.89	369.51
331.41	367.13	348.83	364.14	380.45	364.27	402.65	363.64	402.68	363.64
406.34	363.53	414.27	358.13	417.64	357.81	425.27	358.61	432.32	365.43
433.19	365.53	433.22	365.53	453.71	367.76	474.07	367.76	485.62	368
502.49	370	503.75	370.14	505.06	370.4	505.48	370.53	507.56	370.13
509	370	513.04	370	518.39	370.19	521.7	370.19	524.91	370.37
537.92	371.65	541.22	371.89	542.32	372.1	545.8	372.19	575.74	373.74
577.08	373.86	599.27	377.01	605.31	377.77	608.04	378.01	611.15	378.12
614.15	378.14	616.12	378.1	621.88	378.21	625.35	378.34	639.16	379.09
657.61	380	661.97	380.57	669.23	381.67	678.71	383.47		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	406.34	.04	433.22	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.34	433.22	89.54	100.49	110.66	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336.4	363.2	385	F
550.5	618	385	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
127.8	235.6	385	296.1	336.4	385	454	504.5	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4745

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.11	21.9	380.04	28.76	379.88	34.3	379.51	43.1	379.86
53.28	379.9	56.58	379.78	62.04	379.32	72.76	379.37	82.93	379.28
86.47	379.41	92.14	379.33	95.69	379.17	109.62	379.08	135.12	378.66
137.45	378.48	167.42	378.8	171.95	378.72	192.21	378	200.65	377.24
235.54	377.01	241.83	376.74	253.23	377.1	255.58	376.97	271.08	376.62
275.97	376.65	279.99	377.08	282.06	377.08	293.56	376.33	300.79	376.13
316.78	375.92	330.78	375.45	339.87	375.04	353.65	374	362.03	373.25
376.22	371.8	398.14	369.91	398.19	368.67	441.73	364.73	471.43	362.82
491.34	362.87	497.92	361.09	497.93	361.09	503.16	359.68	507.05	359.79
508.57	357.67	513.05	357.45	516.27	357.67	524	363.35	528.02	363.37
528.05	363.37	543.42	363.45	576.59	363.78	580.38	364	587.66	364.1
599.83	364.36	607.95	364.42	639.8	366	660.86	367.5	675.48	368.86
685.51	370	701.05	372.18	718.22	373.29	725.55	373.48	731.12	374.02
748.44	374.98	752.53	375.3	765.7	375.87	778.37	376.85	791.24	378
806.37	380	808.13	380.31	815.79	381.16	824.93	382	831.66	382.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	491.34	.04	524	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
491.34	524	111.08	108.67	106.25	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4636

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.34	6.89	380.72	8.14	380.72	21.8	379.64	39.34	378
67.85	376	132.49	373.43	147.33	374	162.25	376	169.4	376.34
178.16	375.89	185.65	375.64	200.34	375.76	233.4	375.68	239.11	375.36
249.5	375.34	251.25	375.42	257.5	375.35	267.44	374.96	277.67	374.75
315.27	374.57	318.08	374.63	344.76	374	355.8	372	365.77	370
409.43	368	426.89	366.86	461.95	364.11	477.5	361.95	477.88	361.7
477.89	361.69	483.5	357.91	493.33	357.61	499.07	357.85	502.3	362.25
508.59	362.41	508.61	362.41	524.4	362.83	556.76	362.64	588.33	363.03
609.48	362.74	620.82	363.21	643.23	363.52	650.91	363.84	673.28	365.16
690.67	365.89	697.4	365.96	767.85	369.67	776.5	370	791.17	370.91
827.59	374	829.12	374.06	835.04	374	840.77	373.45	865.39	370
874.22	368	886.48	367.07	898.7	368	908.05	370	921.08	372
930.79	374	936.24	376	940.95	378	945.37	380	961.95	388
966.25	390	970.84	392	976.29	394	984.5	396		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	477.5	.04	502.3	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
477.5	502.3	90.09	85.72	81.01	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
829.12	930.96	374.06	T

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
12.5	47.6	385	159.7	233.5	385	289.2	333.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4550

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.61	5.72	380	14.44	379.53	24.98	379.26	49.94	378
51.11	377.81	52.48	377.77	57.27	377.13	65.46	377.09	83.13	376.44
115.32	376.53	129.27	376.2	134.89	375.7	161.6	375.1	180.09	374.38
184.24	374	192.05	373.05	194.36	373.3	203.06	373.7	213.23	373.33

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  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         487.5  517.99           205.67  206.54  206.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 4400

INPUT
Description: US 40
Distance from Upstream XS =      53
Deck/Roadway Width        =     104
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     5.8     380              83     378             165     376
     237     374             324     372             391 371.588
     429 371.157           463.7 370.927           490.9 370.876
   527.4 371.004           560.1 371.263           596.7  371.72
     644     372             732     374             786     376
     860     378             928     380             999     382

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         487.5  517.99             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

Downstream  Deck/Roadway Coordinates
    num=      11
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
```

```
      13     378              97     376             158     374
   290.3 372.244             328  371.79           354.7 371.615
   387.1 371.555           419.8  371.62           453.4 371.896
   491.3 372.287             600     374

Downstream Bridge Cross Section Data
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.39     3.9  379.26    7.14  379.08    8.79  379.03   11.22  378.89
   14.53  378.78   17.41  378.61   25.86  378.28    32.7   378.1   37.64  377.91
   47.11  377.39    52.1  377.51   58.99  377.54   77.62  377.45   88.21  377.23
   92.02  377.21   95.64  377.34  113.55  377.38  122.03     377  137.03  376.62
  138.43  376.63   139.9  376.54  142.13  376.29  145.36     376  158.31  375.76
  187.11  374.72  198.02   374.5  200.77  374.48  208.31  374.54   212.2  374.51
   224.1     374  231.63  372.98   244.2   372.1  267.66  371.03  274.63  370.67
  284.57     370  294.75  364.77  310.72  364.84   317.5  367.36  326.34  364.31
  347.85  362.45  366.55  361.42  369.78  361.24  371.99  357.69   373.8  356.67
  379.51  351.69   381.6     352  394.25  354.75  396.69  357.39  399.49  360.42
  420.27  362.04  443.45   362.5  460.82  363.19  487.61     366  491.52  366.47
  492.41  366.52  501.31  366.41  508.11  366.82  510.99  366.89  511.84  366.96
  518.45  367.09  530.63  367.88  531.82     368  543.84     370  556.98     372
  567.14  372.99  573.69  373.54  580.03     374  596.09  374.78  599.01  375.01
   603.8  375.23  612.54     376  624.11  376.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  369.78     .04  399.49    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        369.78  399.49             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     369   361.7       F
     400  624.11   361.7       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                32   136.5     .013     .013        0                  .3                1
Upstream   Elevation =  357.575
           Centerline Station =  502.25
Downstream Elevation =  357.07
           Centerline Station =  382

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        208.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          9.42
  Q Barrel (cfs)            208.00    Culv Vel DS (ft/s)          9.58
  E.G. US. (ft)             362.13    Culv Inv El Up (ft)       357.58
  W.S. US. (ft)             362.05    Culv Inv El Dn (ft)       357.07
  E.G. DS (ft)              359.47    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              359.43    Culv Exit Loss (ft)         1.74
  Delta EG (ft)               2.66    Culv Entr Loss (ft)         0.41
  Delta WS (ft)               2.61    Q Weir (cfs)
  E.G. IC (ft)              362.01    Weir Sta Lft (ft)
  E.G. OC (ft)              362.13    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        360.33    Weir Max Depth (ft)
  Culv WS Outlet (ft)       359.78    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.71    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.76    Min El Weir Flow (ft)     371.57


Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.
```

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
Warning: During the supercritical analysis, the program could not converge on a supercritical answer in the downstream cross
section. The program used the solution with the least error.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	315.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.73
Q Barrel (cfs)	315.00	Culv Vel DS (ft/s)	10.82
E.G. US. (ft)	363.57	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	363.49	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	360.21	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	360.15	Culv Exit Loss (ft)	2.32
Delta EG (ft)	3.36	Culv Entr Loss (ft)	0.54
Delta WS (ft)	3.34	Q Weir (cfs)	
E.G. IC (ft)	363.51	Weir Sta Lft (ft)	
E.G. OC (ft)	363.57	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	361.24	Weir Max Depth (ft)	
Culv WS Outlet (ft)	360.71	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.67	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.64	Min El Weir Flow (ft)	371.57

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	716.00	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	17.90
Q Barrel (cfs)	716.00	Culv Vel DS (ft/s)	17.90
E.G. US. (ft)	370.43	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	370.40	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	361.88	Culv Frctn Ls (ft)	1.89
W.S. DS (ft)	361.69	Culv Exit Loss (ft)	5.17
Delta EG (ft)	8.55	Culv Entr Loss (ft)	1.49
Delta WS (ft)	8.71	Q Weir (cfs)	
E.G. IC (ft)	372.98	Weir Sta Lft (ft)	
E.G. OC (ft)	370.43	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	748.68	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.72
Q Barrel (cfs)	748.68	Culv Vel DS (ft/s)	18.72
E.G. US. (ft)	372.16	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.15	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	363.42	Culv Frctn Ls (ft)	2.06
W.S. DS (ft)	363.02	Culv Exit Loss (ft)	5.04
Delta EG (ft)	8.74	Culv Entr Loss (ft)	1.63
Delta WS (ft)	9.13	Q Weir (cfs)	581.32
E.G. IC (ft)	372.15	Weir Sta Lft (ft)	341.92
E.G. OC (ft)	372.16	Weir Sta Rgt (ft)	650.31
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.27
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.76
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	235.13
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	737.62	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.44
Q Barrel (cfs)	737.62	Culv Vel DS (ft/s)	18.44
E.G. US. (ft)	372.44	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.43	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	364.05	Culv Frctn Ls (ft)	2.00
W.S. DS (ft)	363.56	Culv Exit Loss (ft)	4.80
Delta EG (ft)	8.39	Culv Entr Loss (ft)	1.59
Delta WS (ft)	8.86	Q Weir (cfs)	913.38
E.G. IC (ft)	372.47	Weir Sta Lft (ft)	336.63
E.G. OC (ft)	372.44	Weir Sta Rgt (ft)	663.29
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.56
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	1.01
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	328.82
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	725.79	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.14
Q Barrel (cfs)	725.79	Culv Vel DS (ft/s)	18.14
E.G. US. (ft)	372.64	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.63	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	364.60	Culv Frctn Ls (ft)	1.94
W.S. DS (ft)	364.05	Culv Exit Loss (ft)	4.56
Delta EG (ft)	8.04	Culv Entr Loss (ft)	1.53
Delta WS (ft)	8.58	Q Weir (cfs)	1245.21
E.G. IC (ft)	372.68	Weir Sta Lft (ft)	332.14
E.G. OC (ft)	372.64	Weir Sta Rgt (ft)	674.30
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.81
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	1.21
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	412.51
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4344

INPUT
Description:

Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01
603.8	375.23	612.54	376	624.11	376.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	369.78	.04	399.49	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
369.78	399.49	54.24	54.2	54.21	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	369	361.7	F
400	624.11	361.7	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4289

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.16	4.18	376.93	6.02	376.92	13.94	376.67	20.26	376.2
24.9	376.18	33.24	377.06	38.69	377.12	40.04	377.22	48.07	377.42
60.83	377.6	66.6	377.54	72.7	377.21	85.85	376	95.14	375.32
109.02	374.79	111.75	374.73	114.36	374.6	120.7	374.51	138.66	374
141.06	373.73	149.42	372.56	154.25	372	161.5	371.27	163.79	371.11
170.81	370	173.81	369.84	195.17	369.42	204.6	369.46	213.04	369.62
222.3	370	223.43	370.15	226.4	370.41	227.06	370.31	236.85	369.39
247.27	369.56	249.28	369.5	253.56	369.2	259.27	368.95	271.49	368
281.02	366	283.53	365.58	284.63	365.72	287.61	365.54	294.16	364
296.04	363.42	300.15	363.15	323.16	361.6	346.64	361.49	362.78	361.62
366.58	358.56	372.42	353.86	381.79	352.78	389.78	353.42	392.45	357.73
395.52	357.99	397.76	358.89	397.77	358.9	401.82	360.54	427.65	361.5
461.12	362.68	474.19	364	499.06	364.89	510.36	365.54	512.25	365.53
519.79	366	531.35	367.23	537.87	368	549.98	370	574.53	371.66
580.97	371.69	592.69	371.17	604.52	371.32				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	362.78	.04	401.82	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
362.78	401.82	104.83	104.42	103.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4185

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.48	9.2	369.89	11.88	369.82	17.34	369.84	34.57	369.3
53.84	368.42	59.13	368.23	62.34	368.17	68.09	368.17	70.92	368.38
76.7	368.52	81.21	368.71	88.53	369.21	100.23	369.08	113.03	368.39
118.84	368.28	119.85	368.31	124.69	368.28	130.99	368.32	143.69	368.07
174.23	367.24	184.05	366.87	189.65	366.83	193.83	366.87	199.74	366.51
200.31	366.52	202.71	366.37	206.47	366	222.83	365.23	229.16	365.1
237.63	364.59	245.34	364	270.04	362.83	279.56	362.32	284.22	362

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  317.36  360.81  352.39  360.17  380.43  360.08  403.96  360.43  405.79  359.32
  407.94  358.02  410.35  357.61     417  355.97   420.8  354.77  430.79  360.87
   435.8  361.06  435.83  361.06  448.07  361.52  480.45   361.7  518.27  363.36
  531.33     364  532.88  364.19  543.89  364.64  551.51  365.01  553.39  365.05
  557.04   365.2  562.67  365.52  565.16  365.53  571.76  365.76  589.17  365.65
   601.4  365.75  611.19   365.7  613.71  365.74  619.92     366  625.24  366.72
   632.9  367.41  636.14  367.76  639.39     368  644.27  368.63  644.65  368.64
  646.39   368.9  647.36  368.89   650.3  369.29

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  403.96     .04  430.79    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        403.96  430.79           151.73  151.97  152.24             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4033

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  371.31    6.28  371.09    10.1  370.82   11.41  370.78   13.41  370.65
   16.07  370.59   24.34  370.14   26.91  370.09   30.53  370.19   38.94   370.2
   41.71  370.32   43.77  370.21   45.82     370   47.56  369.91   61.47  368.93
   64.73  368.91   74.46  369.43   84.71   369.4   87.19  369.59   93.43  369.89
   94.09  369.89    96.1     370   98.42   370.2  102.15  370.38  104.17   370.4
  106.65  370.37   110.1   370.2  112.15     370  115.71  369.82  128.08  369.81
  137.68   369.7  151.03  369.46  154.18  369.16  164.93  368.77  175.08  368.49
  185.11   368.1  190.59  367.77   192.4  367.74   209.8  366.53  222.55  365.72
  229.81  365.17  231.09  365.15  237.47  365.25  254.65  364.85  274.84     362
  281.46  361.45  311.04  360.26  324.61  359.69  324.63  359.69  327.57  359.56
  332.63  355.53   339.8  355.05  344.88  355.72  350.28  359.03  354.96  359.02
  354.99  359.02  368.82  358.97  388.87  359.13  402.39  358.88  463.03     360
  463.46  360.12   468.3  360.75  482.77     362  495.13  362.44  501.53  362.51
  509.75   362.5  519.32  362.16  523.42  362.13  524.98     362  532.66  361.82
  536.09  361.79  548.11  361.82  551.96     362   557.9  362.44  583.12   363.9
  596.37  364.95

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  327.57     .04  350.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        327.57  350.28           105.3  103.27  101.24             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3930

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  373.25    5.62  373.04   18.75  372.65   20.05  372.56   51.89  373.28
   67.22  372.62   75.52  372.21   81.21     372   82.89   371.8   83.35  371.81
  100.65  370.82  104.09  370.51  109.16     370   119.9  369.24   121.3  369.19
  125.83  369.28  143.55  369.25   145.3  369.37  145.92  369.31  149.12  369.58
  149.56  369.54  151.28  369.67  155.23  369.78  159.52  369.77  162.64  369.66
  165.16   369.5  170.48     369  173.88  368.53  174.87  368.43  177.64     368
  179.57  367.59  182.98  366.78  185.85     366  189.84  365.01  193.24     364
  205.26  362.99  232.35  361.15  264.16  359.45  274.41  358.31  274.42  358.31
  280.37  357.65  286.95  354.74  289.44  354.49  294.11  355.34  299.09  358.68
  305.18  358.74  305.19  358.74  321.51  358.88  353.18  358.92  436.87     360
  449.41     362  451.92  362.47  457.66  363.46  461.04     364  466.97  364.48
  469.66  364.48   474.3  364.61  476.21  364.58  476.86  364.61  477.78  364.59
  488.71  364.64  490.27  364.68  512.72  365.88  514.21     366  532.64     368
  542.86     370  544.26  370.23   546.1  370.43  549.88  370.48  552.59  370.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  280.37     .04  299.09    .075
```

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
280.37 299.09 112.01 113.72 114.59 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
176 200.4 375 F
Blocked Obstructions num= 1
Sta L Sta R Elev
163.1 176 375

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3816

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	374.86	10.9	374	35.12	372	42.05	371.48	47.58	371.12
58.88	370.34	59.53	370.34	78.46	370.9	81.56	371.04	85.42	370.91
91.5	370.8	96.65	370.74	108.4	370.09	110.41	370	112.14	369.8
112.78	369.76	116.9	369.37	121.06	369	125.02	368.8	128.66	368.54
132.43	368.4	135.47	368.11	138.27	368.07	140.86	368.14	143.7	368.03
150.81	367.6	154.5	367.24	157.37	366.85	163.04	366	174.59	362.82
217.65	358.92	236.4	357.65	236.42	357.65	237.46	357.58	243.76	354.29
251.5	353.5	252.56	353.49	255.1	356.69	266.5	357.28	266.52	357.28
271.38	357.54	301.23	358.52	327.76	358.95	350.57	360	371.84	361.19
386.87	362	399.91	363.11	404.12	363.54	410.91	364.18	416.03	364.61
421.73	365	428.74	365.37	429.75	365.39	438.84	365.39	440.51	365.38
443.31	365.3	444.17	365.29	449.76	365.05	455.01	364.86	460.03	365.2
465.28	365.49	469.1	365.73	472.03	365.86	472.64	365.86	474.82	366.04
496.26	366.8	498.97	366.85	515.31	366.69	518.73	366.8	522.16	366.85
525.33	367.02	526.96	367.04	534.8	367.32	549.03	368	554.32	368.52

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	237.46	.04	255.1	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
237.46 255.1 128.5 127.87 127.21 .1 .3
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
173.5 186.9 375 F
373.3 445.4 375 F
Blocked Obstructions num= 1
Sta L Sta R Elev
142.2 173.5 375

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3688

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	367.19	12.07	367.61	20.74	367.88	33.44	368.3	35.81	368.34
36.91	368.35	38.51	368.3	41.9	368.05	42.34	368	46.49	367.62
57.82	366.07	58.06	366	58.98	365.89	59.73	365.86	61.35	365.74
62.76	365.59	63.36	365.54	64.65	365.39	65.31	365.33	65.53	365.3
68.14	364.99	69.06	364.94	77.78	365.17	78.29	365.12	78.87	365.13
79.51	365.14	81.34	364.92	81.98	364.92	82.64	364.91	84.22	364.72
85.27	364.68	87.32	364.44	87.96	364.4	91.82	364	92.71	363.94
94.56	363.8	107.05	361.62	112.03	361.62	156.44	357.41	156.46	357.41
166.74	356.43	170.56	353.16	171.46	352.86	179.43	353.24	182.46	356.86
186.46	357	186.47	357.01	203.22	357.63	227.7	358.5	256.67	360
261.88	360.34	264.57	360.54	271.14	360.98	283.16	361.89	284.48	362
293.32	363.31	295.65	363.6	300.63	364.22	302.93	364.48	304.51	364.65
310.25	365.25	317.77	366.05	320.57	366.39	321.8	366.52	324.49	366.86
328.15	367.23	329.94	367.46	331.84	367.65	332.96	367.78	334.64	368
343.14	368.38	353.94	368.67						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	166.74	.04	182.46	.075

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        166.74  182.46           137.67  137.99   138.3             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    72.5   108.3     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   309.8   338.6     370
```

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3550

INPUT
Description:

```
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.59   21.83     366   22.15  365.93   22.36  365.91   22.65  365.88
   24.81  365.75   34.15  365.49   36.08  365.41   36.47  365.41   56.33  364.39
   62.74  364.35   64.54  364.35   78.24  364.86   78.82  364.87   80.11   364.9
   92.13  365.45   95.39  365.49   97.19  365.52   98.79  365.54  111.29  364.66
  113.06  364.51  113.63  364.52  115.75  364.34  116.17  364.34  118.14  364.18
  118.26  364.18  120.55     364  125.47  363.66  128.06  363.49  130.87  363.32
  133.62  363.17  137.86  362.93  141.25  362.78  142.84  362.67  144.42  362.54
  144.88  362.52  147.11   362.3   147.6  362.27  150.07     362  168.07  360.18
  202.08  358.28  222.67  356.22  222.69  356.22  229.29  355.55  231.57  353.11
  237.67  352.85  241.52  353.14  245.66  357.02   252.8  357.45  270.01   358.5
  299.86  361.08  320.94  363.87  322.12  363.98  326.43  364.47  335.31     366
  338.09  366.52  340.43  367.05  344.77     368  352.58  368.68  357.63  369.11
  363.94  369.54  366.26  369.71  370.89     370  376.06  370.55  378.66  370.84
  385.91   371.5  387.76   371.7  391.56     372  393.08  372.13  393.26  372.12
  394.51   372.2  396.42  372.27  400.73  372.39  401.46  372.38

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  222.67     .04  245.66    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        222.67  245.66           121.58  121.96  122.09             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     132   172.9     370       F
   358.4  401.46     375       F
```

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3428

INPUT
Description:

```
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.25     .08  366.25     .21  366.24    2.49  366.31    5.55  366.33
     6.5  366.31    6.69   366.3    6.85  366.29    6.95  366.28    7.02  366.27
    7.07  366.26    7.09  366.26    7.37  366.14     7.5  366.11    7.73  366.11
    7.81     366   17.71  365.88   17.76  365.88   35.41  362.54   54.26  359.25
   71.12  356.77   71.14  356.77   72.75  356.53   82.67  355.38    85.4  352.15
   86.22  352.06   88.74  351.86   91.45  352.09   93.89  352.39   98.94  357.17
  101.38  357.43  121.79  359.59   156.9  362.39  164.18  363.89  164.43  364.14
  168.22  363.93  172.23  363.84   172.9  363.86     176  363.96   177.1     364
  178.13   364.1  190.23  365.12  198.83  365.85  199.59  365.91  200.67     366
   208.9  367.19  214.54     368  221.01  368.41  227.99  368.94  228.59  368.95
  229.18  368.96  244.28  369.43

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   82.67     .04   98.94    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         82.67   98.94           131.85  132.32  132.95             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    31.2    57.1     370       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
```

```
     7.4    31.2     370   207.8   224.4     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3296

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  369.04    7.44  368.25    8.57   368.2   13.73     368   15.86  367.86
   16.24  367.82   20.57  367.48   24.23  367.01    30.3  366.41   32.66     366
   34.91  365.82   36.33  365.68   37.74  365.56   39.57  365.37   40.92  365.29
   43.15  365.29    43.9  365.26   57.19  365.22   65.98  364.57   67.12  364.52
   74.19     364   78.97  363.56   80.16  363.45   86.96  362.83   90.65  362.47
   94.56  362.11   95.89     362    97.9   362.2   98.84  362.19  107.93  362.58
  109.64  362.69  113.85  362.82  117.37  362.83  135.78  361.77  153.23  361.58
  168.24  361.26   168.8  361.63  178.91  362.18  192.98  358.61  195.06  357.92
  201.72  355.69  204.53  352.08  205.68  351.83  208.07  351.91  210.45  351.72
  213.06   352.1  214.14  351.94  214.68  352.11   218.9  356.65  223.16  358.34
  225.56  358.53  225.57  358.53   241.1  359.76  252.96  359.64  253.63  359.34
   274.2  360.14  298.22  360.84  338.52     362  345.28  362.49  349.83   362.8
  358.24  363.42  360.55  363.61  366.27     364  376.16  364.76  381.02   365.1
  384.43  365.36   386.5  365.49  387.73  365.58  388.62  365.62  390.74  365.78
  391.33   365.8  393.98     366  397.53  366.12  401.29  366.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  195.06     .04  223.16    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        195.06  223.16           117.57  116.94  115.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3179

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.99    2.92  366.32    4.49     366    7.03  365.74   10.65  365.61
   11.25  365.55   16.84  365.58   20.65  365.55   33.69  365.26   37.05  365.27
   37.83  365.19   39.74  365.22   40.57  365.13   41.71  365.14   42.29  365.07
   42.83  365.07    44.3  364.91   44.81  364.89   52.54  364.19   59.05  363.73
   59.96  363.72   64.43     364   81.81  364.24   90.25  364.43   92.01   364.4
   99.97     364  104.37  363.32  108.33  362.78  110.63  362.49   114.3  362.12
  115.81     362  120.17  361.84  122.87  361.79  123.54  361.75     128  361.77
  128.34  361.74  133.43  361.84  133.74  361.82  143.14  361.87   149.1  361.65
  164.07  359.25  179.76  356.13  194.67  355.75   202.4  355.27  206.08  354.62
   206.1  354.62  214.08  353.21  222.22  351.72   224.4  350.87  225.57  350.64
  226.07   350.5  226.87  350.39  227.28  351.49  228.52  356.98  237.22  357.51
  237.24  357.52   245.5  358.02  261.13  358.56  278.43  358.68  287.56  359.19
  290.34  359.37   293.7  359.56  297.36  359.67  300.98  359.87  307.03     360
  313.84  360.92  321.07     362  329.79  363.01     342  364.37  355.84     366
  363.77  366.33  385.35  367.64  391.11  368.04  397.46  368.33

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  179.76     .04  228.52    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        179.76  228.52           101.1  102.24  103.14             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0    63.2     370       F
    80.2      98     370       F
   277.5   332.8     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      98     149     370

CROSS SECTION
```

RIVER: Plumtree
REACH: Plumtree RS: 3077

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.18	1.12	364.15	2.53	364.12	3.97	364.1	8.56	364.2
8.98	364.2	10.31	364.25	11.19	364.24	13.14	364.15	13.5	364.12
14.57	364	18.43	363.88	21.38	363.78	24.61	363.74	33.92	363.48
39.77	363.33	48.31	362.93	50.98	362.82	61.21	362.37	63.02	362.31
70.2	362	74.59	361.6	77.1	361.43	82.58	360.97	83.28	360.94
95.42	360.41	99.21	360.31	103.01	360.23	103.64	360.21	104.52	360.13
105.54	360	107.69	359.58	114.03	358	134.95	356.4	140.36	356
163.01	355.01	179.63	355.11	193.39	354.95	204.81	355.12	210.64	354.59
210.65	354.59	217	354.02	219.69	351.67	221.67	350.95	222.49	350.87
223.8	350.87	226.26	350.75	228.21	350.72	229.11	350.89	230.73	354.07
234.33	355.41	241.4	355.41	250.01	355.42	265.82	356.22	283.13	356.64
290.94	357.97	293.37	357.99	293.48	358	295.67	358.42	300.65	359.3
303.5	359.83	304.53	360	320.68	361.37	322.55	361.51	328.44	362
330.19	362.24	341.42	364	344.14	364.6	349.88	366	354.73	367.09

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	204.81	.04	234.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204.81	234.33	99.64	98.98	98.39	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2978

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	362.91	26.14	362.3	28.29	362.14	29.8	362.2	30.23	362.16
30.97	362	35.23	361.59	35.47	361.59	37.04	361.43	37.26	361.43
38.5	361.3	38.73	361.31	45.76	360.54	80.82	360.96	102.15	360.38
114.55	360.01	118.88	359.77	161.71	358.87	229.91	358	230.71	357.16
236.45	357.02	243.79	356.29	243.81	356.29	245.02	356.16	250.07	353.33
252.35	352.96	254.47	350.89	255.74	350.56	257.29	350.63	259.41	350.68
261.6	350.53	263.18	350.69	263.71	350.84	265.48	354.05	274.04	355.2
274.05	355.2	275.87	355.44	297.22	357.18	316.25	361.84	320.6	362.22
347.97	363.14	347.98	363.82	352.13	364	360.46	364.7	368.43	365.33
374.4	365.77	378.19	366	379.71	366.15	380.66	366.19	383.79	366.08
384.49	366.11	386.36	366	389.31	365.95	390.69	366	391.27	366.26
391.59	366.47	398.39	367.21	402.86	368	410.75	370	415.21	370.52
417.39	370.39	425.64	370.89	432.78	372	437.01	373.28	442.02	374.48
446.02	375.38	448.25	375.83	449.28	376	451.72	376.13	455.64	376.24
456.7	376.24	472.15	376.84	479.93	377.06	491.12	376.37		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	245.02	.04	274.04	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.02	274.04	61.85	60.74	60.21	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	141.71	359.42	F
333.74	436.4	359.42	F
436.4	487.3	370	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
23.3	86.1	370	160.1	223.6	370	343	389	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2917

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84
653.46	371.06	662.64	371.32	668.42	372	676.66	372.58	679.51	372.87

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	440.02	.04	471.92	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
440.02	471.92	89.63	90.26	89.98	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	409.3	359.42	F
485.9	679.51	359.42	F

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 2900

INPUT
Description: Frederick Road
Distance from Upstream XS = 32
Deck/Roadway Width = 33
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 15

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	368.5		23	368		86	366	
146	364		200	362		259	360	
337.5	359.415		380.1	359.626		407.4	359.923	
427.3	360.169		456.8	360.827		563.7	363.651	
590	364		641	366		679.51	367	

Upstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84
653.46	371.06	662.64	371.32	668.42	372	676.66	372.58	679.51	372.87

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	440.02	.04	471.92	.075

Bank Sta: Left	Right	Coeff Contr.	Expan.
440.02	471.92	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	409.3	359.42	F
485.9	679.51	359.42	F

Downstream Deck/Roadway Coordinates

```
    num=      13
      Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
        0     368              60     366             120     364
      174     362             234     360           312.1 359.415
    354.5 359.626           382.1 359.923           401.6 360.169
    431.7 360.827           538.1 363.651             556     364
      615     366

Downstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   369.6    2.79  369.53    7.15  369.53   11.31  369.26   13.16  369.19
   29.03  369.08   30.88     369    36.7  368.66   39.93  368.57   49.72  368.38
   60.81     368    70.9  367.78   72.58  367.64    82.8  367.42   83.97  367.32
   85.38  367.24   87.77  367.18  103.95  366.38  107.73  366.28   112.2     366
   120.8  365.91  127.85  365.89  128.36  365.86  135.62  365.86  136.08  365.83
  142.61  365.76  143.72  365.66  148.33  365.55  150.36  365.39  156.37  365.12
  167.42  364.81  172.69  364.56  182.09  364.16  185.28     364  191.33   363.8
  196.54  363.59  198.83  363.62   204.7  363.42  205.45  363.36   212.4  363.01
  219.55  362.54  226.48     362  235.55  361.62  255.36     360  265.66  359.25
  278.67  358.18  280.71     358  313.84  356.42  337.03  355.63  363.87     355
  377.78   354.9  391.73  354.54   400.8  353.95  402.55  353.74  411.94  352.62
  421.34  350.08  422.54     352  426.28  353.73  432.62   354.3  432.64  354.31
  432.77  354.32  441.96   355.6  462.76  357.08  477.11  359.05  499.49  362.25
  513.76  363.04  527.63     362  539.48  362.57  551.98  362.82  561.27  363.13
  572.05  363.79   574.3     364  591.29  364.92   612.3  365.73  623.32  366.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   400.8     .04  432.64    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         400.8  432.64             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  395.05  356.75       F
   445.1  623.32  356.75       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch    8.25   12.78
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                20    56.5     .024     .024        0                  .5                1
Upstream   Elevation =  350.33
           Centerline Station =  456
Downstream Elevation =  350.16
           Centerline Station =  421

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        194.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          4.19
  Q Barrel (cfs)            194.00    Culv Vel DS (ft/s)          4.06
  E.G. US. (ft)             354.70    Culv Inv El Up (ft)       350.33
  W.S. US. (ft)             354.47    Culv Inv El Dn (ft)       350.16
  E.G. DS (ft)              354.48    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              354.23    Culv Exit Loss (ft)         0.00
  Delta EG (ft)               0.21    Culv Entr Loss (ft)         0.14
  Delta WS (ft)               0.24    Q Weir (cfs)
  E.G. IC (ft)              353.57    Weir Sta Lft (ft)
  E.G. OC (ft)              354.70    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        354.29    Weir Max Depth (ft)
  Culv WS Outlet (ft)       354.23    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         3.11    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.27    Min El Weir Flow (ft)     359.43
```

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	281.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.25
Q Barrel (cfs)	281.00	Culv Vel DS (ft/s)	5.17
E.G. US. (ft)	355.55	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	355.29	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	355.07	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	354.81	Culv Exit Loss (ft)	0.15
Delta EG (ft)	0.47	Culv Entr Loss (ft)	0.21
Delta WS (ft)	0.49	Q Weir (cfs)	
E.G. IC (ft)	354.44	Weir Sta Lft (ft)	
E.G. OC (ft)	355.55	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	354.90	Weir Max Depth (ft)	
Culv WS Outlet (ft)	354.81	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.93	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.76	Min El Weir Flow (ft)	359.43

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	684.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.89
Q Barrel (cfs)	684.00	Culv Vel DS (ft/s)	10.35
E.G. US. (ft)	358.72	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	358.53	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	356.53	Culv Frctn Ls (ft)	0.75
W.S. DS (ft)	355.94	Culv Exit Loss (ft)	1.07
Delta EG (ft)	2.19	Culv Entr Loss (ft)	0.76
Delta WS (ft)	2.59	Q Weir (cfs)	
E.G. IC (ft)	357.98	Weir Sta Lft (ft)	
E.G. OC (ft)	358.72	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	356.44	Weir Max Depth (ft)	
Culv WS Outlet (ft)	355.94	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	4.66	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	899.34	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.17
Q Barrel (cfs)	899.34	Culv Vel DS (ft/s)	11.75
E.G. US. (ft)	360.70	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.51	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	357.65	Culv Frctn Ls (ft)	0.53
W.S. DS (ft)	357.12	Culv Exit Loss (ft)	1.62
Delta EG (ft)	3.05	Culv Entr Loss (ft)	0.97
Delta WS (ft)	3.40	Q Weir (cfs)	445.66
E.G. IC (ft)	360.64	Weir Sta Lft (ft)	238.68
E.G. OC (ft)	360.70	Weir Sta Rgt (ft)	450.61
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	357.79	Weir Max Depth (ft)	1.27
Culv WS Outlet (ft)	357.12	Weir Avg Depth (ft)	0.84
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	177.09
Culv Crt Depth (ft)	5.51	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	916.07	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.16
Q Barrel (cfs)	916.07	Culv Vel DS (ft/s)	11.38
E.G. US. (ft)	361.10	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.87	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.17	Culv Frctn Ls (ft)	0.44
W.S. DS (ft)	357.63	Culv Exit Loss (ft)	1.47
Delta EG (ft)	2.93	Culv Entr Loss (ft)	0.97

Delta WS (ft)	3.25	Q Weir (cfs)	777.93
E.G. IC (ft)	361.04	Weir Sta Lft (ft)	227.01
E.G. OC (ft)	361.10	Weir Sta Rgt (ft)	466.54
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.19	Weir Max Depth (ft)	1.67
Culv WS Outlet (ft)	357.63	Weir Avg Depth (ft)	1.11
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	266.51
Culv Crt Depth (ft)	5.59	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	912.92	Culv Full Len (ft)	3.81
# Barrels	1	Culv Vel US (ft/s)	10.91
Q Barrel (cfs)	912.92	Culv Vel DS (ft/s)	11.13
E.G. US. (ft)	361.38	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	361.11	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.58	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	358.00	Culv Exit Loss (ft)	1.35
Delta EG (ft)	2.80	Culv Entr Loss (ft)	0.92
Delta WS (ft)	3.11	Q Weir (cfs)	1097.08
E.G. IC (ft)	361.35	Weir Sta Lft (ft)	217.88
E.G. OC (ft)	361.38	Weir Sta Rgt (ft)	478.25
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.58	Weir Max Depth (ft)	1.98
Culv WS Outlet (ft)	358.00	Weir Avg Depth (ft)	1.32
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	343.83
Culv Crt Depth (ft)	5.57	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2827

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
400.8	432.64	59.3	67.61	75.81	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	395.05	356.75	F
445.1	623.32	356.75	F

CROSS SECTION

RIVER: Plumtree

REACH: Plumtree RS: 2759

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	372.77	2.31	372.75	3.21	372.76	3.79	372.7	5.35	372.51
10.05	372	17.86	370.67	21.54	370	22.94	369.68	29.73	368
38.04	366	41.31	365.14	46.41	364	49.98	363.37	58.32	362
62.31	361.29	70.12	360	83.48	358.75	88.76	358.48	93.5	358.22
94.45	358.15	97.16	358	128.47	356.25	137.97	356	166.97	354.77
188.46	354.27	206.85	354.18	213.44	353.14	217.92	353.75	217.94	353.75
221.54	354.24	229.72	353.68	232.16	349.32	242.11	350.03	244.47	353.83
247.97	353.92	254.64	354.1	273.96	354.9	288.2	354.55	327.4	356
337.32	356.54	361.29	357.92	361.9	358	364.26	358.17	365.41	358.24
367	358.37	372.78	358.74	375.31	358.81	388.46	358.79	394.15	358.8
397.84	358.95	400.41	358.96	402.23	359.06	404.53	359.21	405.49	359.23
408.57	359.48	408.95	359.49	411.45	359.7	411.87	359.72	415.03	359.99
415.31	360	417.03	360.2	418.39	360.3	428.8	360.31	433.64	360.4
438.69	360.56	442.82	360.73	450.11	361.09	466.87	362	474.25	362.98
481.02	364	491.61	366	492.4	366.16	501.24	368		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	229.72	.04	244.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
229.72	244.47	166.79	169.71	170.1	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.5	6.39	370	8.12	369.55	9.88	369.06	13.59	368
15.68	366.43	16.18	366	16.5	365.69	18.44	364	19.42	363
20.51	362	21.74	361.02	22.67	360	27.21	358.55	28.42	358.17
28.89	358	48.8	356	56.94	355.65	62.31	355.06	97.9	354.08
104.04	353.91	106.64	349.71	112.07	349.9	114.29	352	118.86	352.08
128.02	352.48	129.83	352.56	142.4	352.11	158.46	352.06	163.77	353.31
176.98	353.81	195.26	354.09	212.76	355.32	219.91	355.94	220.06	355.97
220.33	356	220.34	356	220.77	356.04	224.36	356.3	227.8	356.43
228.59	356.43	235.01	356.02	235.26	356	235.49	356	244.56	356.04
247.2	356.04	248.45	356.03	254.75	356.02	257.6	356.01	259.1	356
259.88	356.04	262.22	356.13	262.67	356.15	272.42	356.42	274.41	356.5
275.87	356.57	277.84	356.65	283.08	356.9	287.67	357.1	289.83	357.2
291	357.25	295.04	357.45	305.68	358	327.61	359.52	335.25	360
342.18	360.46	349.91	360.96	357.47	361.46	361.02	361.68		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	104.04	.04	114.29	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.04	114.29	102.11	104.17	106.57	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2485

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.38	4.47	368.19	8.54	368.03	9.3	368	11.37	367.71
12.69	367.6	12.97	367.59	21.49	367.83	21.72	367.79	24.75	367.98
24.78	367.97	25.94	368.02	27.18	368.02	28.49	367.97	29.82	367.87
30.25	367.77	31.68	367.58	33.56	367.26	35	366.85	38.23	366
38.64	365.88	39.08	365.73	41.93	364.86	44.58	364	51.26	362.13
51.81	362	52.07	361.95	53.08	361.71	59.58	360.24	60.5	360
66.26	358.56	68.19	358	79.86	356.07	80.2	356	108.17	354.1
116.73	353.3	136.32	353.03	148.67	352.95	152.4	351.89	153.8	351.49

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  156.31  351.59  159.04  352.43  164.74  351.94  168.76   349.2  174.15  349.34
  176.14  352.31  183.78  352.86  185.84  353.01  202.53  353.09  228.12  353.77
  242.58     354  243.08  354.08  268.03  355.47   271.1  355.65  276.88     356
  279.61  356.42  290.09     358   293.7  358.35  295.16  358.52  296.99  358.71
  299.04  359.06  299.15  359.06  301.56  358.95  310.74  358.55  311.53  358.57
  326.08     360  343.08     362  362.94  363.92  363.84     364  373.86  364.98
  379.95  365.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  164.74     .04  176.14    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        164.74  176.14           153.6  154.59  153.42             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2331

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.49    6.68  364.41    7.02   364.4   14.19  364.07   14.82  364.03
   15.07     364   20.81  363.68   24.25  363.45   29.07  363.13   39.92  362.46
   45.16  362.09   46.53     362   47.28  361.49   49.54     360   52.15   358.3
   52.62     358   55.48  356.39   56.22     356   57.41  355.85   63.81  354.98
   71.45  353.58   95.41  352.52  117.31   352.1  137.93  352.42  139.13  352.39
  143.89  352.26   149.2  348.51  154.15   348.1  159.57  348.42  163.74  351.17
  170.01  352.12  172.55   352.5   187.7  353.21  192.26  353.51  195.07     354
  218.88  355.98  218.91  355.98   219.4  355.99  219.65     356  241.82  357.49
  246.88  357.84  249.17     358  261.51  359.33   265.1  359.63  265.64  359.68
  269.31     360  281.07  361.43  286.16     362  288.44  362.36  288.85  362.43
  290.52  362.72  297.61     364  300.67  364.91  304.17     366  307.87  366.43
     309   366.5  310.22  366.57  314.29  366.95  316.04   367.1  316.75  367.15
  319.13  367.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  143.89     .04  163.74    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        143.89  163.74           179.37   177.6  175.87             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2153

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.32    3.92  364.56    4.01  364.56     8.3   364.3   12.46  364.04
   12.76  364.02   13.08     364   13.25  363.87   13.45  363.73   16.05     362
   16.68  361.53   18.91     360   20.77  358.61    21.6     358   21.89  357.75
   24.09     356   30.84  354.47   33.11     354   52.92  352.32   74.07  351.81
  101.65  351.28  120.22  351.43  120.23  351.43   120.5  351.43  127.63  349.88
  130.12  350.05  131.34  346.86     142  346.39  144.29  352.45  150.56  352.61
  153.23  352.68  168.08  353.97  172.88   354.8  182.71     356  183.66  356.09
  183.87  356.11  184.85  356.22  185.07  356.24  187.04  356.46  193.55  357.16
  200.75     358  212.41  359.89  213.06     360  217.64  360.89  223.61     362
  228.58  363.12  232.74     364  234.97  364.51  241.92     366  244.79  366.58
  251.21     368   256.5  369.43   258.4     370   259.7  370.42  264.45     372
  269.94  372.39  273.44  372.63

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  130.12     .04  144.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.12  144.29           160.15  158.75  157.04             .1       .3

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 1994

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.16	1.03	359.27	6.73	358.67	10.37	358.29	12.97	358
17.14	356.63	19	356	24.53	354.42	26.07	354	48.12	352.4
57.17	351.28	75.62	351.28	92.39	351.14	101.12	350.8	106.95	350.57
106.96	350.57	116.46	350.19	118.2	346.45	127.95	346.81	131.85	351.13
136.96	351.29	150.75	351.72	165.28	352.31	177.37	352.98	196.01	354
199.93	354.72	201.85	354.82	202.83	354.87	204.78	354.98	212.96	355.47
214.68	355.8	216.21	355.53	218.47	355.7	222.42	356	236.41	357.33
243.08	358	253.87	359.4	258.55	360	260.61	360.31	272.91	362
275.22	362.56	277.16	363.07	277.31	363.11				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	116.46	.04	131.85	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
116.46	131.85	108.1	106.05	103.75	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1888

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.32	3.66	359.97	3.97	359.97	9.29	359.12	9.61	359.1
10.06	359.05	11.3	358.9	12.39	358.76	16.42	358	26.85	356.12
27.4	356	44.51	354.47	49.85	354	68.2	352.46	81.53	351.35
104.16	350.46	120.73	349.86	122.9	349.65	122.92	349.65	129.91	349
132.99	345.73	137.07	345.92	142.97	349.5	150.38	349.68	153.97	350.05
163.02	350.99	180.43	351.29	195.81	351.74	212.9	353.83	217.47	354.81
227.64	355.42	283.48	356	287.69	356.35	288.71	356.43	290.19	356.54
297.25	357.04	307.21	357.78	310.66	358	311.09	358.05	315.51	358.54
318.4	358.88	320.31	359.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	129.91	.04	142.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
129.91	142.97	61.13	58.24	54.2	.3	.5

BRIDGE

RIVER: Plumtree
REACH: Plumtree RS: 1850

INPUT
Description: Private Bridge
Distance from Upstream XS = 18.5
Deck/Roadway Width = 16
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 8

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
3.66	359.97		81.5	359.87	357.87	101.7	360.452	358.452
126.6	360.865	358.865	153	360.835	358.835	175.1	360.491	358.491
201	360.491	358.491	320.31	359.1				

Upstream Bridge Cross Section Data
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.32	3.66	359.97	3.97	359.97	9.29	359.12	9.61	359.1
10.06	359.05	11.3	358.9	12.39	358.76	16.42	358	26.85	356.12
27.4	356	44.51	354.47	49.85	354	68.2	352.46	81.53	351.35
104.16	350.46	120.73	349.86	122.9	349.65	122.92	349.65	129.91	349
132.99	345.73	137.07	345.92	142.97	349.5	150.38	349.68	153.97	350.05
163.02	350.99	180.43	351.29	195.81	351.74	212.9	353.83	217.47	354.81
227.64	355.42	283.48	356	287.69	356.35	288.71	356.43	290.19	356.54

```
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        129.91  142.97             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  359.24            91.4 359.823 357.823   114.8 360.523 358.523
   139.8  360.92  358.92     165 360.892 358.892   189.6 360.465 358.465
   211.7 359.771 357.771

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.24    2.43  358.98    4.52  358.77    8.77  358.35   11.48  358.04
   11.83     358   17.63  357.39   27.59  356.34   30.83     356    31.3  355.95
   50.96     354   66.68  349.58   82.55  349.15    94.6  350.53  103.53  350.29
  110.77  348.95  112.07  348.71  119.64  348.74   131.1  348.28  134.38  346.61
  143.36  346.68  149.09  351.02  155.33  350.92  161.76  350.82  177.15  351.12
  196.32  351.55  209.07  352.05  209.56  359.76  230.29  360.75  314.46  356.32
     319  356.67  323.81  357.07  332.17  357.73  334.02  357.88  335.57     358
  340.94  358.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   131.1     .04  149.09    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         131.1  149.09             .3       .5

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)               350.59    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               350.34    E.G. Elev (ft)              350.52        350.40
  Q Total (cfs)               194.00    W.S. Elev (ft)              350.24        350.29
  Q Bridge (cfs)              194.00    Crit W.S. (ft)              348.85        348.91
  Q Weir (cfs)                          Max Chl Dpth (ft)             4.51          3.68
  Weir Sta Lft (ft)                     Vel Total (ft/s)              3.36          2.16
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            57.80         89.61
  Weir Submerg                          Froude # Chl                  0.43          0.25
  Weir Max Depth (ft)                   Specif Force (cu ft)        106.52        130.15
  Min El Weir Flow (ft)       359.11    Hydr Depth (ft)               1.26          1.94
  Min El Prs (ft)             358.87    W.P. Total (ft)              48.24         48.11
  Delta EG (ft)                 0.24    Conv. Total (cfs)          3213.6        4624.0
  Delta WS (ft)                 0.09    Top Width (ft)               45.74         46.14
  BR Open Area (sq ft)        994.03    Frctn Loss (ft)               0.04          0.04
```

BR Open Vel (ft/s)	3.36	C & E Loss (ft)	0.08	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.27	0.20
BR Sel Method	Energy only	Power Total (lb/ft s)	0.92	0.44

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	351.21	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	350.93	E.G. Elev (ft)	351.14	351.02
Q Total (cfs)	281.00	W.S. Elev (ft)	350.83	350.87
Q Bridge (cfs)	281.00	Crit W.S. (ft)	349.54	349.34
Q Weir (cfs)		Max Chl Dpth (ft)	5.10	4.26
Weir Sta Lft (ft)		Vel Total (ft/s)	3.10	2.30
Weir Sta Rgt (ft)		Flow Area (sq ft)	90.56	121.95
Weir Submerg		Froude # Chl	0.44	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	161.61	201.05
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.36	1.92
Min El Prs (ft)	358.87	W.P. Total (ft)	69.14	66.39
Delta EG (ft)	0.26	Conv. Total (cfs)	4668.9	6370.7
Delta WS (ft)	0.08	Top Width (ft)	66.60	63.58
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.10	C & E Loss (ft)	0.08	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.30	0.22
BR Sel Method	Energy only	Power Total (lb/ft s)	0.92	0.51

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	352.71	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	352.40	E.G. Elev (ft)	352.64	352.54
Q Total (cfs)	684.00	W.S. Elev (ft)	352.31	352.32
Q Bridge (cfs)	684.00	Crit W.S. (ft)	351.60	350.78
Q Weir (cfs)		Max Chl Dpth (ft)	6.58	5.71
Weir Sta Lft (ft)		Vel Total (ft/s)	2.83	2.53
Weir Sta Rgt (ft)		Flow Area (sq ft)	241.54	270.41
Weir Submerg		Froude # Chl	0.32	0.27
Weir Max Depth (ft)		Specif Force (cu ft)	447.83	524.50
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	2.03	2.29
Min El Prs (ft)	358.87	W.P. Total (ft)	122.83	122.75
Delta EG (ft)	0.26	Conv. Total (cfs)	11672.2	14659.2
Delta WS (ft)	0.08	Top Width (ft)	119.25	118.06
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.83	C & E Loss (ft)	0.06	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	0.42	0.30
BR Sel Method	Energy only	Power Total (lb/ft s)	1.19	0.76

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	354.07	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	353.72	E.G. Elev (ft)	353.99	353.90
Q Total (cfs)	1345.00	W.S. Elev (ft)	353.60	353.58
Q Bridge (cfs)	1345.00	Crit W.S. (ft)	352.59	352.02
Q Weir (cfs)		Max Chl Dpth (ft)	7.87	6.97
Weir Sta Lft (ft)		Vel Total (ft/s)	3.39	3.21
Weir Sta Rgt (ft)		Flow Area (sq ft)	396.90	419.08
Weir Submerg		Froude # Chl	0.32	0.30
Weir Max Depth (ft)		Specif Force (cu ft)	958.76	1058.97
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.30	3.55
Min El Prs (ft)	358.87	W.P. Total (ft)	126.39	125.27
Delta EG (ft)	0.29	Conv. Total (cfs)	22274.5	25779.4
Delta WS (ft)	0.12	Top Width (ft)	120.17	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	3.39	C & E Loss (ft)	0.03	0.07
BR Sluice Coef		Shear Total (lb/sq ft)	0.71	0.57
BR Sel Method	Energy only	Power Total (lb/ft s)	2.42	1.82

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	354.64	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.29	E.G. Elev (ft)	354.55	354.47

Q Total (cfs)	1694.00	W.S. Elev (ft)	354.12	354.09
Q Bridge (cfs)	1694.00	Crit W.S. (ft)	352.93	352.47
Q Weir (cfs)		Max Chl Dpth (ft)	8.39	7.48
Weir Sta Lft (ft)		Vel Total (ft/s)	3.69	3.53
Weir Sta Rgt (ft)		Flow Area (sq ft)	459.40	479.33
Weir Submerg		Froude # Chl	0.32	0.32
Weir Max Depth (ft)		Specif Force (cu ft)	1243.30	1351.21
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.83	4.06
Min El Prs (ft)	358.87	W.P. Total (ft)	127.44	126.29
Delta EG (ft)	0.31	Conv. Total (cfs)	27391.8	31090.9
Delta WS (ft)	0.17	Top Width (ft)	120.10	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.06
BR Open Vel (ft/s)	3.69	C & E Loss (ft)	0.03	0.08
BR Sluice Coef		Shear Total (lb/sq ft)	0.86	0.70
BR Sel Method	Energy only	Power Total (lb/ft s)	3.17	2.49

BRIDGE OUTPUT Profile #200-YR

E.G. US. (ft)	355.12	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.75	E.G. Elev (ft)	355.02	354.94
Q Total (cfs)	2010.00	W.S. Elev (ft)	354.54	354.51
Q Bridge (cfs)	2010.00	Crit W.S. (ft)	353.20	352.78
Q Weir (cfs)		Max Chl Dpth (ft)	8.81	7.90
Weir Sta Lft (ft)		Vel Total (ft/s)	3.94	3.80
Weir Sta Rgt (ft)		Flow Area (sq ft)	510.53	528.66
Weir Submerg		Froude # Chl	0.33	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	1510.19	1623.57
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	4.25	4.48
Min El Prs (ft)	358.87	W.P. Total (ft)	128.29	127.13
Delta EG (ft)	0.33	Conv. Total (cfs)	31900.7	35749.5
Delta WS (ft)	0.21	Top Width (ft)	120.04	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.06	0.06
BR Open Vel (ft/s)	3.94	C & E Loss (ft)	0.02	0.09
BR Sluice Coef		Shear Total (lb/sq ft)	0.99	0.82
BR Sel Method	Energy only	Power Total (lb/ft s)	3.88	3.12

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1830

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.1	149.09	183.1	189.46	194.94	.3	.5

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1641

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.1	4.25	358	4.42	357.95	4.44	357.94	5.13	357.91
5.87	357.89	19.69	357.39	35.1	356.79	40.55	356.56	48.51	356.22
50.1	356.16	53.65	356	83.2	353.06	108.43	350.69	126.88	349.28
127.65	348.68	128.6	347.92	138.1	348.36	140.07	345.19	146.51	345.53
151.14	349.6	158.59	349.89	158.6	349.89	162.23	350.02	178.14	350

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  203.35  350.65   232.7     352  242.28  353.59  244.74     354  245.26  354.15
  247.65  354.81  250.51   355.6  252.04     356  253.98  356.59  258.69     358
  258.77  358.02  262.44  359.03     266     360   266.2  360.05  268.14  360.44
  269.28  360.66  271.48  361.07  272.68  361.28   273.3  361.39

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   138.1     .04  151.14    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         138.1  151.14           176.17  177.29  178.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1463

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  356.46    5.61  356.33   11.71  356.19   16.33  356.06   18.18  356.02
   18.32  356.02   18.54     356    21.8  355.67   22.14  355.65   22.36  355.64
   22.69   355.6   22.89  355.58   27.15  355.19   29.24  355.09   30.76  355.02
    40.4  354.87   40.86  354.85   41.76   354.8   42.75  354.73   52.82     354
   69.61  352.87   75.51  352.42   79.43  352.14   79.72  352.12   81.65     352
   84.43  351.86   90.72  351.56   92.09  351.48   94.79  351.34   97.19  351.19
  107.32  350.52   111.7  350.26  115.41     350  138.29   349.1  159.11   349.1
  178.46  349.47  180.13  349.17   185.3  348.24  187.99  347.08  189.19  343.45
  196.87  343.35  197.98  346.06  206.54  348.53  210.52  348.75  210.53  348.75
  221.24  349.34  234.53  349.78  266.44  352.56  278.62     358  283.38  359.43
  285.38     360     287  360.55  290.28  361.58  291.64     362  294.58  362.89
  295.91  363.28  296.57  363.47  298.25     364   302.9  365.77  303.51     366
  309.02  367.06  310.22  367.29  310.97  367.42  314.74     368  315.87  368.18
  323.73  369.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  180.13     .04  206.54    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        180.13  206.54           172.51  172.28  171.74             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1291

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  363.49     2.9  363.09   10.68  362.14   11.86     362   19.26  360.55
   22.08     360   26.38  358.97   30.59     358    34.4  357.21   38.91     356
   43.26  354.82   46.23  354.17   47.03     354   49.14  353.62   58.14     352
   66.85  350.97    70.1  350.58   71.43  350.42   75.07     350  108.53  348.38
  120.68  348.74  128.48  348.81  133.87  347.09   136.5  346.81  137.71   345.2
  141.95  344.89  151.53  345.15  155.49  348.28  157.84   348.3  161.16  349.47
  178.09  349.55  199.34  350.93  214.63   351.7   228.4  351.81  242.53  351.32
  264.66  350.52  286.44  349.15  310.41  348.72  338.21     349  371.72  348.77
   400.9  348.48   416.8  348.59  427.74  348.67  430.58  344.68   431.8  344.26
  436.65  344.85  441.26  344.51  442.29  347.58  447.46  349.08  448.01  349.24
  458.85  350.67   471.3  352.75  481.29  354.33  491.23  357.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  427.74     .04  447.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        427.74  447.46           167.7  167.44  166.86             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1124
```

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	365.04	4.51	364.72	9.16	364.27	9.25	364.27	12.12	364
15.5	363.29	21.22	362	23.39	361.54	30.93	360	35.95	358.97
39.85	358.17	50.58	356	54.08	355.4	62.03	354	62.65	353.83
63.34	353.65	73.01	352.9	74.16	352.78	80.64	352	83.69	351.62
99.16	350	114.6	348.69	124.02	348.63	131.1	347.62	149.71	348.01
162.72	347.51	168.53	347.49	170.35	344.49	173.71	344.74	179.87	343.88
182.52	344.16	184.05	346.89	186.24	347	189.68	348.23	195.55	348.19
207	347.6	214.71	347.82	233.96	347.66	252.64	348.2	276.32	348.2
304.29	347.84	332.45	347.91	346.81	348.51	347.97	348.3	348	348.3
350.12	347.92	353.36	347.9	355.26	348.34	360.2	343.58	367.1	344.05
375.37	349.26	378.03	349.7	378.05	349.7	380.33	350.08	392.73	351.02
398.58	351.56	403.03	351.81	420.09	354	435.53	356	439.63	356.61
442.77	357.02	450.32	358	455.33	358.77	457.5	359.06	460.77	359.47
461.87	359.63	462.18	359.68	465.1	360	473.65	361.11	476.71	361.53
479.97	362	480.72	362.12	480.94	362.16	483.56	362.62		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	355.26	.04	375.37	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
355.26	375.37	134.05	129.91	125.5	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
8.7	60.7	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 994

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.1	9.62	358	14.71	356.95	19.8	356	30.42	354.45
33.38	354	36.49	353.7	54.6	352	57.99	351.76	59.66	351.64
70.88	350.84	72.94	350.7	82.85	350	114.72	348.11	135.81	347.8
150.43	347.49	170.48	346.43	171.74	343.41	176.87	342.99	186.86	344.33
188.91	347.54	212.62	347.3	226.74	347	231.31	347.32	247.53	347.69
256.13	347.8	270.71	347.72	281.14	348.11	284.5	347.5	286.04	347.21
292.04	347.03	296.33	343.73	302.06	343.28	306.33	342.85	309.85	346.99
314.78	348.42	315.81	348.64	315.83	348.64	320.17	349.59	333.26	350.57
351	352.36	364.37	354	373	355.3	375.39	355.67	377.77	356
383.23	356.87	390.35	358	393.92	358.56	397.2	359.05	403.45	360
407.85	360.84	413.86	362	417.04	362.66				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	281.14	.04	315.83	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
281.14	315.83	82.93	82.66	81.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 911

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	2.24	358.56	3.51	358.32	5.22	358	12.31	356.66
15.03	356.09	15.46	356	22.75	354.09	23.08	354	23.55	353.96
24.83	353.84	24.92	353.83	25.43	353.83	29.76	353.58	30	353.57
30.58	353.5	31.25	353.48	33.98	353.69	35.3	353.7	36.97	353.98
37.02	353.98	37.13	354	37.9	354.04	38.06	354.05	38.27	354.04
38.32	354.04	38.42	354.03	38.82	354	38.99	353.95	39.2	353.82
44.56	353.53	50.12	353.05	56.89	352.42	59.95	352.14	61.41	352
82.47	350.57	91.08	350	100.51	349.7	117.56	348.31	130.96	347.87
157.71	347.03	178.22	347.23	181.99	344.27	189.47	343.55	196.66	344.12
201.78	347.5	223.44	347.06	243.05	346.93	252.46	346.76	252.6	346.85

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  292.54  347.06  306.34  347.38  312.43  347.51  317.18  343.33  321.46  342.92
   325.5  343.21  332.27  348.29  337.05     349  337.06     349  351.26  351.11
  381.21  355.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  312.43     .04  332.27    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        312.43  332.27           138.48  148.66  157.22             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 762

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  357.13    2.35  357.03    6.48  356.67    7.69  356.61    9.39  356.51
   14.41     356   19.83  355.44      21  355.32   22.74  355.12   32.28     354
   34.37   353.8   35.36  353.71   51.57  352.14   52.81  352.02   53.01     352
   61.67  351.41   65.26  351.17   67.97  350.99   73.71  350.62   76.99  350.42
   81.35  350.17   81.78  350.14   84.01  350.03   84.52     350   108.7  348.46
  145.52  346.99  169.46  347.05  186.24  347.42  197.19  345.22  199.28  343.68
  205.18   343.3  208.29  343.86  210.89  346.07  228.95  347.18  235.77   347.3
  240.55  347.28  244.65  347.26  244.66  347.26   252.8  347.23   257.6  343.09
  259.66  342.54  263.98  342.94   271.9  344.77  276.21  346.65  276.24  346.66
  276.97  346.98  298.22  347.67  328.56  347.99  360.33  351.01  370.76  351.97
  371.89     352   373.6  352.14  375.07  352.27  376.35   352.4  384.34  353.82
  384.65  353.87  384.83   353.9  384.94  353.92   385.3     354     392  355.62
  393.35     356  395.32   356.4  403.54     358  408.28  358.51  410.83  358.82
  411.55  358.82  412.84   358.8  416.14  358.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   252.8     .04  276.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         252.8  276.97           101.69  104.14  104.96             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   366.8   407.4     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 658

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  358.95    2.26  358.79     5.3  358.55    9.28   358.2   11.48     358
   14.26  357.65   16.66  357.36   20.41  356.87   26.22  356.16   35.44  355.02
   41.74  354.15   42.79     354   59.31   352.1    59.6  352.07   59.76  352.05
    60.3     352   70.49  351.39    76.4  351.02   86.06  350.44   92.55     350
  118.81     348  200.75  346.51  222.09  346.42  240.58  346.42  240.59  346.42
   245.1  346.43  248.95  343.16  255.63  340.34   262.8   340.2  267.31  342.59
  270.68  343.91  277.89  346.74  301.79  346.57  332.03  346.36  388.47  347.88
  391.63  347.92  394.29  347.92  394.49  347.91  400.05     348  401.61  348.21
  402.93   348.4  404.42  348.65   405.7  348.87  406.58  349.04  407.19  349.17
  412.03     350  415.92  350.98  417.72  351.13  418.47  351.21  420.03  351.39
  422.64  351.75  422.86  351.79  424.26     352  426.31  352.71  429.22  353.83
  429.43  353.91  429.85  354.09  434.45     356  442.51  357.75  442.83  357.83
  443.54     358  450.24  358.39  464.98  359.29  465.18  359.32  466.53  359.48
  470.64     360  471.72  360.06  477.88   360.4  481.52  360.61  490.37  361.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   245.1     .04  277.89    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         245.1  277.89           129.48  132.55  137.52             .1       .3

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 526

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.29	9.33	356.07	9.88	356	15.36	355.41	18.93	355.03
21	354.81	28.17	354	30.46	353.79	34.1	353.48	42.62	352.81
46.05	352.53	47.8	352.4	49.22	352.29	53.02	352	59.04	351.42
61.87	351.16	67.63	350.62	73.95	350	93.12	348.67	121.73	346.39
157.75	346.18	186.76	345.79	188.34	345.18	188.36	345.17	195.28	342.48
203.56	341.63	212.23	342.05	213.87	346.6	218.56	346.44	218.57	346.44
237.47	345.8	275.28	345.64	307.64	346.39	309.73	346.39	311.5	346.41
313.11	346.41	314.75	346.4	329.39	346.38	337.83	346.31	340.98	346.28
350.53	346.19	372.03	346	378.64	346.57	382.54	346.9	390.22	347.56
395.28	348	402.02	349.12	407.12	350	408.46	350.19	409.19	350.29
409.96	350.41	415.16	351.21	417.91	351.63	420.21	352	425.22	352.92
430.26	354	432.81	354.65	434.33	355	437.88	355.74	438.42	355.87
439.17	356	441.01	356.24	446.9	356.96	448.95	357.26	452.86	357.84
453.18	357.89	453.89	358	458.07	358.55	459.62	358.79	462.41	359.19
467.23	360	483.54	360.76						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.76	.04	213.87	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.76	213.87	143.66	145.78	147.57	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
443	476.3	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 380

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.67	.48	366.64	10.41	366	17.37	364.74	21.25	364
25.91	363.14	31.6	362	37.28	360.91	41.95	360	46.91	359.56
63.27	358	71.54	357.11	76.74	356.56	81.96	356	84.51	355.63
95.36	354	101.45	352.61	104.07	352	106.08	351.38	110.9	350
116.69	348.33	117.74	348	119.59	347.7	121.4	347.41	126.04	346.65
130	346	133.26	346.1	135.45	346.16	138.15	346.24	146.78	346.47
149.42	346.45	150.34	346.44	151.1	346.43	151.57	346.42	155.44	346.29
164.04	345.66	193.28	345.53	212.79	346.39	212.81	346.39	215.37	346.51
219.06	341.92	227.8	342.05	238.17	343.21	243.49	346.6	243.7	346.6
243.72	346.59	260.79	346.48	291.92	346.27	304.59	346	319.84	347.43
322.97	347.65	328.49	348	330.64	348.16	332.41	348.38	334.7	348.61
337.77	348.94	346.14	350	350.1	350.95	354.1	352	360.75	353.66
362.11	354	365.83	354.84	369.98	355.77	370.39	355.85	371.06	356
372.08	356.17	382.09	358	386.28	358.59	390.61	359.14		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.37	.04	243.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.37	243.7	235.8	234.15	232.25	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10	44.6	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 146

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	6.37	358.83	15.88	358.07	16.47	358.02	16.84	358
21.14	357.01	25.77	356	28.06	355.5	30.16	355.06	34.73	354.18
35.2	354.08	35.66	354	37.68	353.72	38.1	353.66	41.6	353.18
44.05	352.85	45.88	352.61	50.58	352.01	50.71	352	52.8	351.88
60.34	351.5	61.05	351.44	66.3	351.17	67.3	351.09	70.18	350.94
72.76	350.72	76.24	350.54	81.27	350	100.43	348.85	105.06	348.54
115.51	348	138.29	346.9	181.73	345.23	210.07	344.41	210.09	344.41
215.13	344.26	220.35	341.19	225.41	340.73	231.22	340.96	236.01	344.28
240.33	344.79	253.16	346.33	258.95	349.49	260.11	349.59	263.96	350.56
267.35	352	269.7	353.13	271.51	354	273.55	355.07	275.21	356
277.09	356.89	279.29	358	283.62	359.32	285.5	359.78	286.47	360
291.06	360.4	294.96	360.73	299.25	361.08	301.38	361.31	304.13	361.54
306.53	361.84	306.74	361.86	307.86	362	314.98	363.37	318.1	364
325.64	365.64	327.27	366	335.18	367.64	336.93	368	339.58	368.18
343.85	368.49	346.34	368.31						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.13	.04	236.01	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.13	236.01	88.09	82.88	77.62	.1 .3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
15.2	56.5	365	296.2	338	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 63

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	354	7.34	353.26	12.41	352.73	16.79	352.29	19.4	352
27.1	350.79	31.84	350	38.59	349.24	50.74	348	57.78	347.37
58.67	347.29	60.21	347.18	62.82	346.94	66.66	346.68	68.29	346.54
76.91	346	79.38	345.88	79.63	345.86	80	345.83	80.68	345.78
83.85	345.58	87.55	345.35	103.02	344	108.36	342.62	114.01	342
118.01	340	138.02	340	142.02	342	147.2	343.25	150.03	344
151.66	344.32	153.16	344.61	153.93	344.74	155.1	344.92	156.66	345.2
158.34	345.42	159.11	345.56	160.97	345.74	161.25	345.79	163.2	345.94
163.62	346	170.72	346	174.59	346.47	175.77	346.56	176.48	346.66
177.66	346.84	178.56	346.94	180.57	347.23	181.89	347.4	182.5	347.49
185.96	348	187.92	348.58	193.03	350	195.4	350.82	198.31	352
201.23	353.21	203.77	354	207.9	355.67	208.87	356	212.01	357.21
214.25	358	216.21	358.46	223.24	360	225.85	360.29	227.5	360.52
231.62	361.04	238.04	362	248.29	363.79	249.46	364	253.46	364.5
253.68	364.53								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	103.02	.04	150.03	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
103.02	150.03	0	0	0 .1	.3

SUMMARY OF MANNING'S N VALUES

River:Plumtree

Reach	River Sta.	n1	n2	n3
Plumtree	10286	.085	.04	.085
Plumtree	10044	.085	.04	.085
Plumtree	9814	.085	.04	.085
Plumtree	9762	.085	.04	.085
Plumtree	9732	.075	.04	.075
Plumtree	9650	Culvert		
Plumtree	9589	.075	.04	.075
Plumtree	9499	.075	.04	.075
Plumtree	9398	.085	.04	.085
Plumtree	9301	.085	.04	.085
Plumtree	9196	.085	.04	.085

Plumtree	8987	.085	.04	.085
Plumtree	8753	.065	.04	.085
Plumtree	8579	.075	.04	.085
Plumtree	8374	.075	.04	.085
Plumtree	8229	.075	.04	.085
Plumtree	8094	.075	.04	.085
Plumtree	7954	.075	.04	.085
Plumtree	7800	.075	.04	.085
Plumtree	7548	.075	.04	.085
Plumtree	7367	.075	.04	.075
Plumtree	7216	.075	.04	.075
Plumtree	7030	.075	.04	.075
Plumtree	6893	.075	.04	.075
Plumtree	6766	.075	.04	.075
Plumtree	6663	.075	.04	.075
Plumtree	6568	.075	.04	.075
Plumtree	6454	.075	.04	.075
Plumtree	6350	.075	.04	.075
Plumtree	6296	.075	.04	.075
Plumtree	6250	Culvert		
Plumtree	6197	.075	.04	.075
Plumtree	6122	.075	.04	.075
Plumtree	6028	.075	.04	.075
Plumtree	5926	.075	.04	.075
Plumtree	5824	.075	.04	.075
Plumtree	5745	.075	.04	.075
Plumtree	5711	.075	.04	.075
Plumtree	5650	Culvert		
Plumtree	5614	.075	.04	.075
Plumtree	5560	.075	.04	.075
Plumtree	5510	.075	.04	.075
Plumtree	5500	Bridge		
Plumtree	5474	.075	.04	.075
Plumtree	5419	.075	.04	.075
Plumtree	5323	.075	.04	.075
Plumtree	5209	.075	.04	.075
Plumtree	5107	.075	.04	.075
Plumtree	5040	.075	.04	.075
Plumtree	5000	Culvert		
Plumtree	4932	.075	.04	.075
Plumtree	4845	.075	.04	.075
Plumtree	4745	.075	.04	.075
Plumtree	4636	.075	.04	.075
Plumtree	4550	.075	.04	.075
Plumtree	4400	Culvert		
Plumtree	4344	.075	.04	.075
Plumtree	4289	.075	.04	.075
Plumtree	4185	.075	.04	.075
Plumtree	4033	.075	.04	.075
Plumtree	3930	.075	.04	.075
Plumtree	3816	.075	.04	.075
Plumtree	3688	.075	.04	.075
Plumtree	3550	.075	.04	.075
Plumtree	3428	.075	.04	.075
Plumtree	3296	.075	.04	.075
Plumtree	3179	.075	.04	.075
Plumtree	3077	.075	.04	.075
Plumtree	2978	.075	.04	.075
Plumtree	2917	.075	.04	.075
Plumtree	2900	Culvert		
Plumtree	2827	.075	.04	.075
Plumtree	2759	.075	.04	.075
Plumtree	2589	.075	.04	.075
Plumtree	2485	.075	.04	.075
Plumtree	2331	.075	.04	.075
Plumtree	2153	.075	.04	.075
Plumtree	1994	.075	.04	.075
Plumtree	1888	.075	.04	.075
Plumtree	1850	Bridge		
Plumtree	1830	.075	.04	.075
Plumtree	1641	.075	.04	.075
Plumtree	1463	.075	.04	.075
Plumtree	1291	.075	.04	.075
Plumtree	1124	.075	.04	.075
Plumtree	994	.075	.04	.075
Plumtree	911	.075	.04	.075
Plumtree	762	.075	.04	.075
Plumtree	658	.075	.04	.075
Plumtree	526	.075	.04	.075

Plumtree	380	.075	.04	.075
Plumtree	146	.075	.04	.075
Plumtree	63	.075	.04	.075

SUMMARY OF REACH LENGTHS

River: Plumtree

Reach	River Sta.	Left	Channel	Right
Plumtree	10286	240.46	241.25	237.2
Plumtree	10044	233.9	230.57	222.97
Plumtree	9814	52.19	51.52	50.85
Plumtree	9762	32.64	30.09	27.57
Plumtree	9732	145.71	143.47	141.55
Plumtree	9650	Culvert		
Plumtree	9589	74.95	89.37	103.36
Plumtree	9499	98.65	101.8	104.92
Plumtree	9398	97.24	96.47	94.54
Plumtree	9301	109.84	105	100.42
Plumtree	9196	197.07	208.89	195.59
Plumtree	8987	233.38	233.77	226.61
Plumtree	8753	178.41	174.76	168.62
Plumtree	8579	198.29	204.23	206.04
Plumtree	8374	144.9	145.45	146.03
Plumtree	8229	135.27	135.16	134.66
Plumtree	8094	138.21	139.81	140.01
Plumtree	7954	155.28	153.64	152.99
Plumtree	7800	252.37	252.82	252.55
Plumtree	7548	174.12	180.41	186.79
Plumtree	7367	143.37	150.84	157.8
Plumtree	7216	190.28	186.42	181.46
Plumtree	7030	140.13	137.19	133.92
Plumtree	6893	124.46	126.53	128.02
Plumtree	6766	103.31	103.53	104.46
Plumtree	6663	90.58	94.53	97.72
Plumtree	6568	112.95	114.27	115.74
Plumtree	6454	102.69	103.78	104.74
Plumtree	6350	52.33	53.78	55.24
Plumtree	6296	98.47	99.02	99.58
Plumtree	6250	Culvert		
Plumtree	6197	75.78	74.81	73.83
Plumtree	6122	98.18	94.21	91.92
Plumtree	6028	100.93	101.91	101.19
Plumtree	5926	102.11	102.54	102.93
Plumtree	5824	75.62	79.21	82.75
Plumtree	5745	34.07	34.02	34.04
Plumtree	5711	96.24	96.18	98.71
Plumtree	5650	Culvert		
Plumtree	5614	60.47	54.67	45.26
Plumtree	5560	56.62	49.74	41.3
Plumtree	5510	36.56	36.42	38.18
Plumtree	5500	Bridge		
Plumtree	5474	54.4	54.86	54.94
Plumtree	5419	93.04	95.36	97.65
Plumtree	5323	116.69	114.31	111.9
Plumtree	5209	111.42	101.59	91.47
Plumtree	5107	67.29	67.07	66.86
Plumtree	5040	104.82	108.2	107.53
Plumtree	5000	Culvert		
Plumtree	4932	86.54	87.15	87.5
Plumtree	4845	89.54	100.49	110.66
Plumtree	4745	111.08	108.67	106.25
Plumtree	4636	90.09	85.72	81.01
Plumtree	4550	205.67	206.54	206.28
Plumtree	4400	Culvert		
Plumtree	4344	54.24	54.2	54.21
Plumtree	4289	104.83	104.42	103.52
Plumtree	4185	151.73	151.97	152.24
Plumtree	4033	105.3	103.27	101.24
Plumtree	3930	112.01	113.72	114.59
Plumtree	3816	128.5	127.87	127.21
Plumtree	3688	137.67	137.99	138.3
Plumtree	3550	121.58	121.96	122.09
Plumtree	3428	131.85	132.32	132.95
Plumtree	3296	117.57	116.94	115.99

Plumtree	3179	101.1	102.24	103.14
Plumtree	3077	99.64	98.98	98.39
Plumtree	2978	61.85	60.74	60.21
Plumtree	2917	89.63	90.26	89.98
Plumtree	2900	Culvert		
Plumtree	2827	59.3	67.61	75.81
Plumtree	2759	166.79	169.71	170.1
Plumtree	2589	102.11	104.17	106.57
Plumtree	2485	153.6	154.59	153.42
Plumtree	2331	179.37	177.6	175.87
Plumtree	2153	160.15	158.75	157.04
Plumtree	1994	108.1	106.05	103.75
Plumtree	1888	61.13	58.24	54.2
Plumtree	1850	Bridge		
Plumtree	1830	183.1	189.46	194.94
Plumtree	1641	176.17	177.29	178.52
Plumtree	1463	172.51	172.28	171.74
Plumtree	1291	167.7	167.44	166.86
Plumtree	1124	134.05	129.91	125.5
Plumtree	994	82.93	82.66	81.8
Plumtree	911	138.48	148.66	157.22
Plumtree	762	101.69	104.14	104.96
Plumtree	658	129.48	132.55	137.52
Plumtree	526	143.66	145.78	147.57
Plumtree	380	235.8	234.15	232.25
Plumtree	146	88.09	82.88	77.62
Plumtree	63	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Plumtree

Reach	River Sta.	Contr.	Expan.
Plumtree	10286	.1	.3
Plumtree	10044	.1	.3
Plumtree	9814	.1	.3
Plumtree	9762	.1	.3
Plumtree	9732	.3	.5
Plumtree	9650	Culvert	
Plumtree	9589	.3	.5
Plumtree	9499	.1	.3
Plumtree	9398	.1	.3
Plumtree	9301	.1	.3
Plumtree	9196	.1	.3
Plumtree	8987	.1	.3
Plumtree	8753	.1	.3
Plumtree	8579	.1	.3
Plumtree	8374	.1	.3
Plumtree	8229	.1	.3
Plumtree	8094	.1	.3
Plumtree	7954	.1	.3
Plumtree	7800	.1	.3
Plumtree	7548	.1	.3
Plumtree	7367	.1	.3
Plumtree	7216	.1	.3
Plumtree	7030	.1	.3
Plumtree	6893	.1	.3
Plumtree	6766	.1	.3
Plumtree	6663	.1	.3
Plumtree	6568	.1	.3
Plumtree	6454	.1	.3
Plumtree	6350	.1	.3
Plumtree	6296	.3	.5
Plumtree	6250	Culvert	
Plumtree	6197	.3	.5
Plumtree	6122	.1	.3
Plumtree	6028	.1	.3
Plumtree	5926	.1	.3
Plumtree	5824	.1	.3
Plumtree	5745	.1	.3
Plumtree	5711	.3	.5
Plumtree	5650	Culvert	
Plumtree	5614	.3	.5
Plumtree	5560	.1	.3
Plumtree	5510	.3	.5

Plumtree	5500	Bridge		
Plumtree	5474		.3	.5
Plumtree	5419		.1	.3
Plumtree	5323		.1	.3
Plumtree	5209		.1	.3
Plumtree	5107		.1	.3
Plumtree	5040		.3	.5
Plumtree	5000	Culvert		
Plumtree	4932		.3	.5
Plumtree	4845		.1	.3
Plumtree	4745		.1	.3
Plumtree	4636		.1	.3
Plumtree	4550		.3	.5
Plumtree	4400	Culvert		
Plumtree	4344		.3	.5
Plumtree	4289		.1	.3
Plumtree	4185		.1	.3
Plumtree	4033		.1	.3
Plumtree	3930		.1	.3
Plumtree	3816		.1	.3
Plumtree	3688		.1	.3
Plumtree	3550		.1	.3
Plumtree	3428		.1	.3
Plumtree	3296		.1	.3
Plumtree	3179		.1	.3
Plumtree	3077		.1	.3
Plumtree	2978		.1	.3
Plumtree	2917		.3	.5
Plumtree	2900	Culvert		
Plumtree	2827		.3	.5
Plumtree	2759		.1	.3
Plumtree	2589		.1	.3
Plumtree	2485		.1	.3
Plumtree	2331		.1	.3
Plumtree	2153		.1	.3
Plumtree	1994		.1	.3
Plumtree	1888		.3	.5
Plumtree	1850	Bridge		
Plumtree	1830		.3	.5
Plumtree	1641		.1	.3
Plumtree	1463		.1	.3
Plumtree	1291		.1	.3
Plumtree	1124		.1	.3
Plumtree	994		.1	.3
Plumtree	911		.1	.3
Plumtree	762		.1	.3
Plumtree	658		.1	.3
Plumtree	526		.1	.3
Plumtree	380		.1	.3
Plumtree	146		.1	.3
Plumtree	63		.1	.3

HEC-RAS Plan: G River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	10286	1-YR	223.00	395.09	396.81	396.59	396.90	0.008138	3.23	121.42	150.01	0.58
Plumtree	10286	2-YR	307.00	395.09	396.98	396.60	397.10	0.008539	3.69	147.05	154.15	0.62
Plumtree	10286	10-YR	596.00	395.09	397.61	396.95	397.76	0.006496	4.33	248.53	169.55	0.58
Plumtree	10286	50-YR	995.00	395.09	398.02	397.34	398.28	0.008482	5.70	320.10	179.36	0.68
Plumtree	10286	100-YR	1200.00	395.09	398.13	397.51	398.46	0.010191	6.47	340.77	180.17	0.76
Plumtree	10286	200-YR	1441.00	395.09	398.27	397.71	398.69	0.011788	7.24	366.18	181.16	0.82
Plumtree	10044	1-YR	223.00	392.49	394.38	394.17	394.55	0.012033	4.01	95.57	160.05	0.71
Plumtree	10044	2-YR	307.00	392.49	394.57	394.26	394.76	0.011179	4.31	128.57	181.74	0.71
Plumtree	10044	10-YR	596.00	392.49	394.81	394.81	395.21	0.019905	6.42	174.65	200.40	0.97
Plumtree	10044	50-YR	995.00	392.49	395.38		395.77	0.013198	6.60	297.17	233.97	0.84
Plumtree	10044	100-YR	1200.00	392.49	395.72		396.06	0.009890	6.37	380.69	254.77	0.74
Plumtree	10044	200-YR	1441.00	392.49	396.08		396.40	0.007749	6.22	476.76	273.51	0.67
Plumtree	9814	1-YR	223.00	388.76	391.65	391.32	391.94	0.010722	4.30	51.91	43.53	0.69
Plumtree	9814	2-YR	307.00	388.76	392.01	391.61	392.32	0.010099	4.47	68.69	52.13	0.69
Plumtree	9814	10-YR	596.00	388.76	393.96	392.33	394.04	0.001001	2.53	423.21	271.98	0.25
Plumtree	9814	50-YR	995.00	388.76	395.23	393.16	395.29	0.000602	2.45	787.15	304.26	0.20
Plumtree	9814	100-YR	1200.00	388.76	395.53	393.38	395.60	0.000659	2.68	880.30	314.85	0.22
Plumtree	9814	200-YR	1441.00	388.76	395.84	393.58	395.93	0.000754	2.99	996.42	365.08	0.23
Plumtree	9762	1-YR	223.00	388.00	390.84		391.29	0.014434	5.36	41.63	30.27	0.81
Plumtree	9762	2-YR	307.00	388.00	391.35	390.95	391.76	0.011211	5.14	64.39	69.11	0.73
Plumtree	9762	10-YR	596.00	388.00	393.94		393.99	0.000652	2.22	478.08	227.81	0.20
Plumtree	9762	50-YR	995.00	388.00	395.20		395.26	0.000542	2.46	794.76	286.52	0.19
Plumtree	9762	100-YR	1200.00	388.00	395.50		395.57	0.000608	2.71	884.47	320.88	0.21
Plumtree	9762	200-YR	1441.00	388.00	395.80		395.89	0.000713	3.04	984.23	335.42	0.23
Plumtree	9732	1-YR	223.00	387.00	390.89	389.66	391.03	0.002737	3.09	72.07	34.50	0.38
Plumtree	9732	2-YR	307.00	387.00	391.35	390.00	391.54	0.002875	3.45	88.96	37.48	0.39
Plumtree	9732	10-YR	596.00	387.00	393.80	390.90	393.96	0.000994	3.22	193.50	166.76	0.26
Plumtree	9732	50-YR	995.00	387.00	395.10	391.81	395.24	0.000771	3.33	525.31	223.62	0.24
Plumtree	9732	100-YR	1200.00	387.00	395.38	392.17	395.54	0.000895	3.70	588.60	234.51	0.26
Plumtree	9732	200-YR	1441.00	387.00	395.66	392.59	395.86	0.001029	4.08	657.24	244.65	0.28
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	223.00	386.27	389.31	388.43	389.52	0.004152	3.67	61.60	35.83	0.46
Plumtree	9589	2-YR	307.00	386.27	389.91	388.79	390.13	0.003190	3.84	82.71	42.28	0.43
Plumtree	9589	10-YR	596.00	386.27	390.90	389.65	391.33	0.003865	5.28	118.52	59.14	0.50
Plumtree	9589	50-YR	995.00	386.27	391.93	390.53	392.50	0.003980	6.35	210.86	103.74	0.52
Plumtree	9589	100-YR	1200.00	386.27	392.39	390.93	393.01	0.003896	6.70	281.34	209.24	0.53
Plumtree	9589	200-YR	1441.00	386.27	392.87	391.55	393.46	0.003561	6.81	398.28	266.88	0.51
Plumtree	9499	1-YR	204.00	385.35	388.97		389.15	0.003898	3.51	70.65	50.97	0.44
Plumtree	9499	2-YR	303.00	385.35	389.65		389.82	0.003045	3.57	114.93	94.68	0.41
Plumtree	9499	10-YR	660.00	385.35	390.73		390.93	0.002644	4.25	271.52	157.15	0.40
Plumtree	9499	50-YR	1190.00	385.35	391.84		392.06	0.002335	4.81	452.59	169.63	0.40
Plumtree	9499	100-YR	1474.00	385.35	392.33		392.57	0.002252	5.06	537.12	174.40	0.40
Plumtree	9499	200-YR	1767.00	385.35	392.80		393.05	0.002176	5.27	620.07	178.62	0.40
Plumtree	9398	1-YR	204.00	384.42	388.37		388.70	0.004701	4.54	44.89	15.87	0.48
Plumtree	9398	2-YR	303.00	384.42	388.85	387.67	389.35	0.006624	5.72	58.77	77.23	0.57
Plumtree	9398	10-YR	660.00	384.42	390.27		390.60	0.003894	5.62	259.11	164.05	0.47
Plumtree	9398	50-YR	1190.00	384.42	391.53		391.79	0.002935	5.75	478.34	181.61	0.42
Plumtree	9398	100-YR	1474.00	384.42	392.05		392.31	0.002787	5.93	573.67	187.07	0.42
Plumtree	9398	200-YR	1767.00	384.42	392.53		392.80	0.002725	6.16	667.14	197.09	0.42
Plumtree	9301	1-YR	204.00	383.31	388.11		388.33	0.002680	3.80	62.04	32.60	0.37
Plumtree	9301	2-YR	303.00	383.31	388.45		388.81	0.004102	4.98	77.69	65.11	0.47
Plumtree	9301	10-YR	660.00	383.31	389.14	389.02	390.01	0.008541	8.09	134.69	89.90	0.69
Plumtree	9301	50-YR	1190.00	383.31	390.05	390.05	391.22	0.010359	10.15	221.09	99.28	0.79
Plumtree	9301	100-YR	1474.00	383.31	390.45	390.45	391.73	0.010880	10.93	261.58	103.18	0.82
Plumtree	9301	200-YR	1767.00	383.31	390.80	390.80	392.21	0.011535	11.72	297.87	106.55	0.85
Plumtree	9196	1-YR	204.00	383.81	387.40	387.40	387.81	0.010238	5.48	61.09	107.80	0.69
Plumtree	9196	2-YR	303.00	383.81	387.70	387.70	388.14	0.010645	6.06	95.66	120.63	0.72
Plumtree	9196	10-YR	660.00	383.81	388.69		389.04	0.006939	6.26	227.82	142.32	0.62
Plumtree	9196	50-YR	1190.00	383.81	389.68	388.93	390.04	0.005970	6.94	373.32	153.75	0.60
Plumtree	9196	100-YR	1474.00	383.81	390.10	389.19	390.48	0.005811	7.30	438.92	157.84	0.60
Plumtree	9196	200-YR	1767.00	383.81	390.50	389.44	390.90	0.005698	7.63	502.63	162.06	0.60
Plumtree	8987	1-YR	204.00	382.77	386.54	385.23	386.67	0.002345	3.34	119.75	115.30	0.34
Plumtree	8987	2-YR	303.00	382.77	386.94	386.22	387.09	0.002522	3.77	166.78	120.24	0.36
Plumtree	8987	10-YR	660.00	382.77	387.85		388.07	0.003285	5.05	281.24	131.50	0.43
Plumtree	8987	50-YR	1190.00	382.77	388.70		389.02	0.004246	6.49	397.32	140.81	0.51
Plumtree	8987	100-YR	1474.00	382.77	389.06		389.43	0.004670	7.12	448.44	144.19	0.54
Plumtree	8987	200-YR	1767.00	382.77	389.41		389.83	0.004968	7.66	499.88	147.51	0.56

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	8753	1-YR	204.00	381.99	385.24	385.24	385.66	0.009692	5.85	60.16	79.52	0.66
Plumtree	8753	2-YR	303.00	381.99	385.56	385.51	386.01	0.010193	6.51	86.40	86.08	0.69
Plumtree	8753	10-YR	660.00	381.99	386.59		386.95	0.007409	6.85	200.78	158.99	0.62
Plumtree	8753	50-YR	1190.00	381.99	387.69		387.95	0.004847	6.57	417.35	221.78	0.52
Plumtree	8753	100-YR	1474.00	381.99	388.17		388.40	0.003931	6.30	530.16	242.42	0.48
Plumtree	8753	200-YR	1767.00	381.99	388.61		388.82	0.003445	6.21	637.63	251.53	0.45
Plumtree	8579	1-YR	204.00	381.13	384.21	383.48	384.40	0.004728	4.12	88.21	90.48	0.48
Plumtree	8579	2-YR	303.00	381.13	384.68		384.86	0.004013	4.30	133.65	100.67	0.46
Plumtree	8579	10-YR	660.00	381.13	385.82		386.04	0.003539	5.09	258.52	118.38	0.45
Plumtree	8579	50-YR	1190.00	381.13	386.92		387.21	0.003698	6.14	400.36	138.78	0.48
Plumtree	8579	100-YR	1474.00	381.13	387.39		387.70	0.003812	6.62	467.62	148.80	0.50
Plumtree	8579	200-YR	1767.00	381.13	387.82		388.16	0.003835	6.99	533.51	154.62	0.51
Plumtree	8374	1-YR	204.00	380.31	383.79		383.88	0.001467	2.73	125.40	87.23	0.28
Plumtree	8374	2-YR	303.00	380.31	384.22		384.33	0.001724	3.17	164.47	93.27	0.31
Plumtree	8374	10-YR	660.00	380.31	385.28		385.46	0.002275	4.32	271.81	109.73	0.37
Plumtree	8374	50-YR	1190.00	380.31	386.28		386.55	0.002847	5.57	387.82	122.59	0.43
Plumtree	8374	100-YR	1474.00	380.31	386.69		387.01	0.003124	6.14	438.92	127.75	0.46
Plumtree	8374	200-YR	1767.00	380.31	387.06		387.44	0.003380	6.67	487.99	133.84	0.48
Plumtree	8229	1-YR	204.00	379.79	382.85	382.85	383.38	0.010607	6.43	55.07	65.24	0.72
Plumtree	8229	2-YR	303.00	379.79	383.35	383.25	383.82	0.008676	6.57	92.81	83.98	0.67
Plumtree	8229	10-YR	660.00	379.79	384.36		384.86	0.008227	7.76	191.80	112.21	0.68
Plumtree	8229	50-YR	1190.00	379.79	385.30		385.86	0.008357	8.99	309.78	134.89	0.71
Plumtree	8229	100-YR	1474.00	379.79	385.69		386.28	0.008418	9.49	363.25	140.31	0.72
Plumtree	8229	200-YR	1767.00	379.79	386.03		386.67	0.008662	10.03	411.69	145.12	0.74
Plumtree	8094	1-YR	204.00	378.24	381.72	380.86	382.12	0.007250	5.29	52.91	63.21	0.57
Plumtree	8094	2-YR	303.00	378.24	382.02	381.93	382.58	0.009541	6.47	75.25	90.41	0.66
Plumtree	8094	10-YR	660.00	378.24	382.88	382.88	383.57	0.010918	8.19	167.32	122.69	0.74
Plumtree	8094	50-YR	1190.00	378.24	383.61	383.61	384.46	0.012747	9.95	265.15	143.69	0.82
Plumtree	8094	100-YR	1474.00	378.24	383.91	383.91	384.83	0.013506	10.68	309.46	150.74	0.85
Plumtree	8094	200-YR	1767.00	378.24	384.20	384.20	385.17	0.013876	11.26	354.52	157.23	0.87
Plumtree	7954	1-YR	204.00	377.79	381.03	380.76	381.13	0.005744	3.86	126.50	155.83	0.50
Plumtree	7954	2-YR	303.00	377.79	381.27	380.92	381.39	0.006148	4.33	164.92	159.97	0.53
Plumtree	7954	10-YR	660.00	377.79	381.91	381.35	382.08	0.007039	5.53	270.73	170.78	0.59
Plumtree	7954	50-YR	1190.00	377.79	382.59	381.81	382.83	0.007837	6.76	393.11	186.15	0.64
Plumtree	7954	100-YR	1474.00	377.79	382.90	381.97	383.16	0.008021	7.24	450.56	190.97	0.66
Plumtree	7954	200-YR	1767.00	377.79	383.19	382.23	383.48	0.008143	7.66	506.46	195.42	0.67
Plumtree	7800	1-YR	204.00	378.73	379.84		379.92	0.011082	3.70	118.96	173.24	0.67
Plumtree	7800	2-YR	303.00	378.73	380.04		380.14	0.011145	4.20	153.32	178.07	0.69
Plumtree	7800	10-YR	660.00	378.73	380.61		380.76	0.010448	5.32	257.10	187.27	0.72
Plumtree	7800	50-YR	1190.00	378.73	381.29		381.50	0.009385	6.31	388.64	198.24	0.72
Plumtree	7800	100-YR	1474.00	378.73	381.61		381.85	0.008986	6.71	452.80	203.38	0.72
Plumtree	7800	200-YR	1767.00	378.73	381.92		382.18	0.008652	7.07	515.92	208.31	0.72
Plumtree	7548	1-YR	204.00	375.57	378.60		378.65	0.002822	3.01	196.75	273.00	0.37
Plumtree	7548	2-YR	303.00	375.57	378.86		378.91	0.002663	3.16	269.00	278.99	0.36
Plumtree	7548	10-YR	660.00	375.57	379.60		379.65	0.002303	3.52	481.86	296.87	0.35
Plumtree	7548	50-YR	1190.00	375.57	380.43		380.49	0.002067	3.90	735.32	312.50	0.35
Plumtree	7548	100-YR	1474.00	375.57	380.77		380.84	0.002073	4.13	843.16	317.14	0.35
Plumtree	7548	200-YR	1767.00	375.57	381.11		381.18	0.002053	4.33	950.41	321.55	0.36
Plumtree	7367	1-YR	204.00	378.30	377.68		377.74	0.010709		102.04	116.77	0.00
Plumtree	7367	2-YR	303.00	378.30	377.96		378.04	0.010498		139.69	145.36	0.00
Plumtree	7367	10-YR	660.00	378.30	378.94		379.01	0.005879	1.40	325.44	236.71	0.41
Plumtree	7367	50-YR	1190.00	378.30	379.91		379.97	0.004173	2.39	641.08	398.33	0.41
Plumtree	7367	100-YR	1474.00	378.30	380.32		380.38	0.003160	2.60	806.64	407.24	0.38
Plumtree	7367	200-YR	1767.00	378.30	380.70		380.76	0.002607	2.76	963.54	414.08	0.36
Plumtree	7216	1-YR	204.00	375.26	377.08	376.50	377.12	0.002049	1.88	169.34	193.43	0.30
Plumtree	7216	2-YR	303.00	375.26	377.29	376.65	377.34	0.002463	2.30	210.38	205.19	0.34
Plumtree	7216	10-YR	660.00	375.26	378.71	377.04	378.75	0.000779	2.06	551.89	267.18	0.22
Plumtree	7216	50-YR	1190.00	375.26	379.68	377.48	379.73	0.000807	2.56	824.51	297.22	0.23
Plumtree	7216	100-YR	1474.00	375.26	380.09	377.68	380.16	0.000826	2.77	950.73	309.00	0.24
Plumtree	7216	200-YR	1767.00	375.26	380.48	377.85	380.55	0.000838	2.96	1071.49	317.20	0.24
Plumtree	7030	1-YR	204.00	373.43	376.00	376.00	376.26	0.015907	6.07	87.90	152.85	0.83
Plumtree	7030	2-YR	303.00	373.43	376.33		376.50	0.010125	5.46	139.92	165.15	0.68
Plumtree	7030	10-YR	660.00	373.43	378.57		378.60	0.000760	2.48	589.91	222.61	0.21
Plumtree	7030	50-YR	1190.00	373.43	379.52		379.56	0.000962	3.19	806.21	235.14	0.25
Plumtree	7030	100-YR	1474.00	373.43	379.92		379.98	0.001075	3.54	903.03	246.28	0.26
Plumtree	7030	200-YR	1767.00	373.43	380.30		380.36	0.001182	3.88	997.85	258.46	0.28

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	6893	1-YR	204.00	370.68	374.17	373.50	374.35	0.004903	3.95	90.84	108.10	0.49
Plumtree	6893	2-YR	303.00	370.68	376.32		376.34	0.000287	1.55	408.72	179.14	0.13
Plumtree	6893	10-YR	660.00	370.68	378.54		378.55	0.000182	1.64	865.31	230.13	0.11
Plumtree	6893	50-YR	1190.00	370.68	379.46		379.49	0.000316	2.37	1085.12	247.63	0.15
Plumtree	6893	100-YR	1474.00	370.68	379.85		379.89	0.000382	2.70	1183.71	254.90	0.17
Plumtree	6893	200-YR	1767.00	370.68	380.21		380.26	0.000444	3.00	1277.52	261.02	0.19
Plumtree	6766	1-YR	204.00	369.76	373.73		373.85	0.003048	3.12	103.55	102.85	0.39
Plumtree	6766	2-YR	303.00	369.76	376.30		376.31	0.000163	1.25	491.45	205.84	0.10
Plumtree	6766	10-YR	660.00	369.76	378.52		378.53	0.000119	1.40	1029.03	280.31	0.09
Plumtree	6766	50-YR	1190.00	369.76	379.43		379.46	0.000222	2.07	1304.60	325.42	0.13
Plumtree	6766	100-YR	1474.00	369.76	379.81		379.85	0.000271	2.36	1434.71	345.85	0.15
Plumtree	6766	200-YR	1767.00	369.76	380.17		380.21	0.000315	2.62	1560.98	357.59	0.16
Plumtree	6663	1-YR	204.00	369.26	373.53		373.64	0.001460	2.78	109.51	93.10	0.28
Plumtree	6663	2-YR	303.00	369.26	376.28		376.30	0.000120	1.22	550.98	225.15	0.09
Plumtree	6663	10-YR	660.00	369.26	378.51		378.52	0.000092	1.33	1189.35	326.76	0.08
Plumtree	6663	50-YR	1190.00	369.26	379.41		379.43	0.000163	1.89	1492.43	344.22	0.11
Plumtree	6663	100-YR	1474.00	369.26	379.80		379.82	0.000198	2.15	1626.03	352.46	0.12
Plumtree	6663	200-YR	1767.00	369.26	380.15		380.18	0.000231	2.37	1752.67	357.77	0.13
Plumtree	6568	1-YR	208.00	368.65	373.35		373.48	0.001767	3.27	107.03	87.18	0.30
Plumtree	6568	2-YR	315.00	368.65	376.27		376.28	0.000141	1.35	556.41	214.71	0.09
Plumtree	6568	10-YR	716.00	368.65	378.50		378.51	0.000126	1.55	1110.80	279.20	0.09
Plumtree	6568	50-YR	1330.00	368.65	379.39		379.41	0.000248	2.31	1367.99	300.09	0.13
Plumtree	6568	100-YR	1651.00	368.65	379.76		379.80	0.000311	2.66	1483.00	311.83	0.15
Plumtree	6568	200-YR	1971.00	368.65	380.11		380.16	0.000370	2.96	1593.89	323.55	0.16
Plumtree	6454	1-YR	208.00	368.30	373.17		373.29	0.001492	2.84	91.59	59.89	0.29
Plumtree	6454	2-YR	315.00	368.30	376.26		376.27	0.000105	1.20	542.09	190.22	0.09
Plumtree	6454	10-YR	716.00	368.30	378.48		378.50	0.000109	1.51	997.12	232.78	0.09
Plumtree	6454	50-YR	1330.00	368.30	379.35		379.39	0.000231	2.34	1212.62	264.40	0.14
Plumtree	6454	100-YR	1651.00	368.30	379.71		379.76	0.000294	2.71	1311.41	278.29	0.15
Plumtree	6454	200-YR	1971.00	368.30	380.05		380.11	0.000357	3.06	1407.60	293.84	0.17
Plumtree	6350	1-YR	208.00	366.97	373.10	370.04	373.17	0.000804	2.17	96.19	29.77	0.21
Plumtree	6350	2-YR	315.00	366.97	376.22	370.73	376.26	0.000172	1.53	279.23	100.10	0.11
Plumtree	6350	10-YR	716.00	366.97	378.42	372.28	378.48	0.000229	2.16	585.25	218.99	0.13
Plumtree	6350	50-YR	1330.00	366.97	379.21	373.92	379.34	0.000506	3.40	750.67	253.49	0.20
Plumtree	6350	100-YR	1651.00	366.97	379.54	374.66	379.71	0.000651	3.94	826.43	267.33	0.22
Plumtree	6350	200-YR	1971.00	366.97	379.84	375.35	380.05	0.000783	4.41	900.41	277.54	0.25
Plumtree	6296	1-YR	208.00	367.41	373.00	370.55	373.11	0.001230	2.97	92.39	32.80	0.25
Plumtree	6296	2-YR	315.00	367.41	376.19	371.18	376.24	0.000306	2.14	236.99	86.90	0.14
Plumtree	6296	10-YR	716.00	367.41	378.37	372.81	378.46	0.000467	3.13	512.93	157.22	0.18
Plumtree	6296	50-YR	1330.00	367.41	379.07	374.56	379.29	0.001126	5.09	635.00	222.66	0.28
Plumtree	6296	100-YR	1651.00	367.41	379.36	374.94	379.65	0.001437	5.85	701.59	235.93	0.31
Plumtree	6296	200-YR	1971.00	367.41	379.63	376.22	379.97	0.001742	6.55	766.44	254.57	0.35
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	208.00	366.39	371.04	368.06	371.10	0.000478	1.91	110.17	30.74	0.17
Plumtree	6197	2-YR	315.00	366.39	371.83	368.52	371.92	0.000590	2.40	135.26	32.97	0.20
Plumtree	6197	10-YR	716.00	366.39	373.64	369.86	373.87	0.000997	3.88	199.64	38.12	0.27
Plumtree	6197	50-YR	1330.00	366.39	375.18	371.30	375.68	0.001661	5.77	267.79	58.51	0.36
Plumtree	6197	100-YR	1651.00	366.39	375.77	371.97	376.41	0.001974	6.59	306.84	74.04	0.40
Plumtree	6197	200-YR	1971.00	366.39	376.29	372.58	377.08	0.002265	7.34	349.70	98.53	0.43
Plumtree	6122	1-YR	208.00	366.62	369.71	369.69	370.71	0.023248	8.03	25.92	12.66	0.99
Plumtree	6122	2-YR	315.00	366.62	370.71	370.50	371.56	0.016327	7.42	43.70	29.98	0.87
Plumtree	6122	10-YR	716.00	366.62	372.18	372.09	373.39	0.013110	9.26	98.72	44.82	0.84
Plumtree	6122	50-YR	1330.00	366.62	373.61	373.61	375.12	0.011852	10.92	179.78	77.64	0.85
Plumtree	6122	100-YR	1651.00	366.62	374.13	374.13	375.80	0.012149	11.77	211.74	82.42	0.87
Plumtree	6122	200-YR	1971.00	366.62	374.58	374.58	376.43	0.012440	12.54	240.83	89.40	0.89
Plumtree	6028	1-YR	208.00	365.53	369.77	368.83	369.91	0.002523	3.31	95.13	71.84	0.37
Plumtree	6028	2-YR	315.00	365.53	371.01	369.30	371.09	0.001012	2.73	203.09	102.46	0.25
Plumtree	6028	10-YR	716.00	365.53	372.72	370.28	372.83	0.000981	3.45	424.27	158.65	0.26
Plumtree	6028	50-YR	1330.00	365.53	373.83	371.25	373.99	0.001306	4.50	606.76	208.77	0.31
Plumtree	6028	100-YR	1651.00	365.53	374.30	371.69	374.48	0.001430	4.93	688.82	219.54	0.33
Plumtree	6028	200-YR	1971.00	365.53	374.73	372.05	374.94	0.001517	5.28	766.99	228.32	0.34
Plumtree	5926	1-YR	208.00	365.38	369.17	368.47	369.50	0.006147	5.21	57.13	35.66	0.55
Plumtree	5926	2-YR	315.00	365.38	370.78	368.97	370.94	0.001912	3.93	141.76	101.19	0.33
Plumtree	5926	10-YR	716.00	365.38	372.49	370.47	372.69	0.001867	4.82	291.60	156.61	0.34
Plumtree	5926	50-YR	1330.00	365.38	373.40	371.76	373.77	0.003224	6.94	383.14	165.79	0.46
Plumtree	5926	100-YR	1651.00	365.38	373.77	372.15	374.23	0.003858	7.86	422.71	169.52	0.51
Plumtree	5926	200-YR	1971.00	365.38	374.11	372.53	374.66	0.004390	8.64	460.59	172.38	0.55

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5824	1-YR	208.00	365.08	368.65		368.90	0.005249	4.03	51.57	26.94	0.51
Plumtree	5824	2-YR	315.00	365.08	370.68		370.79	0.000971	2.70	137.82	75.68	0.25
Plumtree	5824	10-YR	716.00	365.08	372.39		372.54	0.000947	3.43	357.36	160.46	0.26
Plumtree	5824	50-YR	1330.00	365.08	373.25		373.52	0.001551	4.84	499.28	169.43	0.34
Plumtree	5824	100-YR	1651.00	365.08	373.61		373.92	0.001820	5.44	559.60	173.10	0.37
Plumtree	5824	200-YR	1971.00	365.08	373.94		374.31	0.002040	5.95	617.54	176.62	0.40
Plumtree	5745	1-YR	208.00	363.03	368.58	366.09	368.68	0.001157	2.55	82.50	30.26	0.25
Plumtree	5745	2-YR	315.00	363.03	370.66	366.70	370.73	0.000449	2.14	172.64	79.16	0.17
Plumtree	5745	10-YR	716.00	363.03	372.33	368.27	372.47	0.000729	3.31	293.88	103.64	0.23
Plumtree	5745	50-YR	1330.00	363.03	373.00	369.97	373.38	0.001686	5.37	350.81	120.90	0.35
Plumtree	5745	100-YR	1651.00	363.03	373.21	370.67	373.74	0.002307	6.41	369.66	137.80	0.41
Plumtree	5745	200-YR	1971.00	363.03	373.37	371.27	374.08	0.003012	7.42	384.16	143.94	0.47
Plumtree	5711	1-YR	208.00	362.51	368.57	365.31	368.64	0.000664	2.15	101.29	36.33	0.20
Plumtree	5711	2-YR	315.00	362.51	370.66	365.97	370.71	0.000300	1.90	211.63	70.33	0.14
Plumtree	5711	10-YR	716.00	362.51	372.32	367.62	372.45	0.000553	3.07	361.92	132.09	0.20
Plumtree	5711	50-YR	1330.00	362.51	373.00	369.40	373.30	0.001291	4.97	467.55	173.96	0.31
Plumtree	5711	100-YR	1651.00	362.51	373.21	370.16	373.64	0.001754	5.90	506.15	180.39	0.36
Plumtree	5711	200-YR	1971.00	362.51	373.39	370.74	373.94	0.002215	6.72	539.33	184.16	0.41
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	208.00	361.81	366.72	364.14	366.79	0.000832	2.19	95.17	30.30	0.22
Plumtree	5614	2-YR	315.00	361.81	367.72	364.67	367.81	0.000787	2.46	134.63	52.39	0.22
Plumtree	5614	10-YR	716.00	361.81	371.68	366.07	371.74	0.000233	2.10	589.08	187.30	0.13
Plumtree	5614	50-YR	1330.00	361.81	372.72	367.81	372.83	0.000444	3.15	802.72	227.21	0.19
Plumtree	5614	100-YR	1651.00	361.81	373.11	368.35	373.25	0.000545	3.60	894.70	238.22	0.21
Plumtree	5614	200-YR	1971.00	361.81	373.30	368.90	373.48	0.000692	4.11	939.86	239.07	0.24
Plumtree	5560	1-YR	208.00	362.08	366.62		366.73	0.001388	2.66	78.34	26.10	0.27
Plumtree	5560	2-YR	315.00	362.08	367.61		367.75	0.001283	2.96	112.75	55.67	0.27
Plumtree	5560	10-YR	716.00	362.08	371.68		371.72	0.000219	2.00	782.32	289.25	0.13
Plumtree	5560	50-YR	1330.00	362.08	372.72		372.79	0.000352	2.75	1101.69	324.47	0.16
Plumtree	5560	100-YR	1651.00	362.08	373.12		373.20	0.000417	3.09	1233.38	337.98	0.18
Plumtree	5560	200-YR	1971.00	362.08	373.31		373.41	0.000525	3.51	1298.64	343.03	0.20
Plumtree	5510	1-YR	208.00	362.16	366.23	365.15	366.58	0.005695	4.73	43.99	17.58	0.53
Plumtree	5510	2-YR	315.00	362.16	367.22	365.82	367.61	0.004988	5.02	62.81	20.61	0.51
Plumtree	5510	10-YR	716.00	362.16	371.60	367.56	371.70	0.000553	2.96	480.16	229.46	0.19
Plumtree	5510	50-YR	1330.00	362.16	372.59	369.61	372.75	0.000921	4.16	668.04	251.97	0.26
Plumtree	5510	100-YR	1651.00	362.16	372.96	369.92	373.15	0.001101	4.68	742.74	257.18	0.28
Plumtree	5510	200-YR	1971.00	362.16	373.09	370.95	373.35	0.001432	5.40	771.22	259.13	0.32
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	208.00	361.52	366.15	364.20	366.34	0.002412	3.46	60.04	19.96	0.35
Plumtree	5474	2-YR	315.00	361.52	367.12	364.86	367.36	0.002481	3.90	80.86	22.84	0.37
Plumtree	5474	10-YR	716.00	361.52	371.55	366.63	371.63	0.000409	2.66	517.58	182.54	0.17
Plumtree	5474	50-YR	1330.00	361.52	372.48	368.76	372.63	0.000752	3.89	700.38	204.68	0.23
Plumtree	5474	100-YR	1651.00	361.52	372.82	369.57	373.01	0.000931	4.44	770.79	208.77	0.26
Plumtree	5474	200-YR	1971.00	361.52	373.09	370.24	373.32	0.001127	4.98	826.72	211.96	0.29
Plumtree	5419	1-YR	208.00	361.46	365.94	364.24	366.17	0.003097	3.87	53.79	17.95	0.39
Plumtree	5419	2-YR	315.00	361.46	366.89	364.90	367.18	0.003234	4.39	71.78	20.17	0.41
Plumtree	5419	10-YR	716.00	361.46	371.53	366.69	371.60	0.000408	2.69	524.82	203.65	0.17
Plumtree	5419	50-YR	1330.00	361.46	372.44	368.91	372.59	0.000779	3.99	683.61	222.66	0.23
Plumtree	5419	100-YR	1651.00	361.46	372.77	369.79	372.96	0.000979	4.58	743.96	226.46	0.26
Plumtree	5419	200-YR	1971.00	361.46	373.02	370.28	373.26	0.001199	5.16	791.18	229.30	0.29
Plumtree	5323	1-YR	208.00	361.32	365.59		365.84	0.003801	4.06	51.79	26.26	0.43
Plumtree	5323	2-YR	315.00	361.32	366.66		366.89	0.002590	3.98	104.74	62.94	0.37
Plumtree	5323	10-YR	716.00	361.32	371.53		371.56	0.000229	2.09	672.03	156.02	0.13
Plumtree	5323	50-YR	1330.00	361.32	372.43		372.51	0.000485	3.25	817.74	169.32	0.19
Plumtree	5323	100-YR	1651.00	361.32	372.75		372.86	0.000635	3.80	872.75	174.65	0.22
Plumtree	5323	200-YR	1971.00	361.32	372.99		373.14	0.000803	4.34	915.59	178.54	0.24
Plumtree	5209	1-YR	208.00	361.10	364.78	363.86	365.23	0.007522	5.42	38.41	14.90	0.59
Plumtree	5209	2-YR	315.00	361.10	366.30	364.58	366.57	0.002853	4.46	105.03	71.37	0.39
Plumtree	5209	10-YR	716.00	361.10	371.51	366.63	371.54	0.000185	1.98	769.13	177.70	0.12
Plumtree	5209	50-YR	1330.00	361.10	372.39	367.80	372.46	0.000399	3.09	932.07	199.25	0.17
Plumtree	5209	100-YR	1651.00	361.10	372.70	368.24	372.79	0.000535	3.65	993.84	208.77	0.20
Plumtree	5209	200-YR	1971.00	361.10	372.92	368.64	373.04	0.000689	4.21	1041.65	215.84	0.23
Plumtree	5107	1-YR	208.00	359.92	363.87	363.11	364.37	0.009543	5.67	36.69	16.18	0.66
Plumtree	5107	2-YR	315.00	359.92	366.07	363.88	366.29	0.002353	3.81	88.44	37.60	0.36
Plumtree	5107	10-YR	716.00	359.92	371.44	365.67	371.51	0.000296	2.43	484.78	245.13	0.15

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5107	50-YR	1330.00	359.92	372.23	367.45	372.39	0.000650	3.82	629.23	286.81	0.22
Plumtree	5107	100-YR	1651.00	359.92	372.49	368.02	372.71	0.000872	4.50	683.30	303.30	0.26
Plumtree	5107	200-YR	1971.00	359.92	372.65	368.55	372.94	0.001137	5.20	720.16	314.34	0.29
Plumtree	5040	1-YR	208.00	359.23	363.52	362.43	363.85	0.005368	4.55	45.74	18.96	0.52
Plumtree	5040	2-YR	315.00	359.23	366.01	363.08	366.15	0.001336	3.03	103.99	27.89	0.28
Plumtree	5040	10-YR	716.00	359.23	371.43	364.77	371.49	0.000225	2.25	609.73	251.68	0.13
Plumtree	5040	50-YR	1330.00	359.23	372.22	366.43	372.35	0.000466	3.42	824.30	288.72	0.19
Plumtree	5040	100-YR	1651.00	359.23	372.47	367.10	372.64	0.000622	4.02	898.19	308.02	0.22
Plumtree	5040	200-YR	1971.00	359.23	372.63	367.73	372.86	0.000799	4.61	948.48	313.77	0.25
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	208.00	359.04	362.54	361.41	362.81	0.004271	4.10	50.73	21.30	0.47
Plumtree	4932	2-YR	315.00	359.04	363.80	361.98	364.04	0.002720	3.93	80.21	38.47	0.39
Plumtree	4932	10-YR	716.00	359.04	370.41	363.52	370.49	0.000240	2.47	463.12	132.46	0.14
Plumtree	4932	50-YR	1330.00	359.04	372.11	365.07	372.25	0.000377	3.44	782.20	235.77	0.18
Plumtree	4932	100-YR	1651.00	359.04	372.37	365.77	372.56	0.000503	4.04	845.46	240.48	0.21
Plumtree	4932	200-YR	1971.00	359.04	372.56	366.40	372.80	0.000649	4.63	890.55	243.66	0.24
Plumtree	4845	1-YR	208.00	357.81	362.37	360.23	362.52	0.001766	3.10	67.12	21.12	0.31
Plumtree	4845	2-YR	315.00	357.81	363.67	360.84	363.84	0.001471	3.26	96.97	28.93	0.29
Plumtree	4845	10-YR	716.00	357.81	370.42	362.51	370.45	0.000119	1.72	633.91	140.26	0.09
Plumtree	4845	50-YR	1330.00	357.81	372.12	364.80	372.19	0.000210	2.53	861.10	177.24	0.13
Plumtree	4845	100-YR	1651.00	357.81	372.39	365.42	372.48	0.000293	3.04	902.28	185.18	0.15
Plumtree	4845	200-YR	1971.00	357.81	372.57	365.89	372.70	0.000390	3.54	932.06	189.82	0.18
Plumtree	4745	1-YR	208.00	357.45	362.23		362.34	0.001609	2.70	77.15	28.76	0.29
Plumtree	4745	2-YR	315.00	357.45	363.60		363.70	0.000934	2.54	145.31	99.42	0.23
Plumtree	4745	10-YR	716.00	357.45	370.43		370.44	0.000027	0.87	1702.45	296.51	0.05
Plumtree	4745	50-YR	1330.00	357.45	372.15		372.16	0.000046	1.25	2239.93	328.08	0.06
Plumtree	4745	100-YR	1651.00	357.45	372.43		372.45	0.000064	1.49	2332.47	334.89	0.07
Plumtree	4745	200-YR	1971.00	357.45	372.63		372.65	0.000084	1.74	2400.65	340.00	0.09
Plumtree	4636	1-YR	208.00	357.61	362.12		362.21	0.000888	2.37	87.97	25.92	0.22
Plumtree	4636	2-YR	315.00	357.61	363.55		363.62	0.000519	2.26	228.05	177.87	0.18
Plumtree	4636	10-YR	716.00	357.61	370.43		370.44	0.000018	0.76	2254.96	468.39	0.04
Plumtree	4636	50-YR	1330.00	357.61	372.15		372.16	0.000029	1.05	3005.01	522.62	0.05
Plumtree	4636	100-YR	1651.00	357.61	372.43		372.44	0.000040	1.24	3131.60	530.81	0.06
Plumtree	4636	200-YR	1971.00	357.61	372.63		372.64	0.000053	1.44	3224.09	536.73	0.07
Plumtree	4550	1-YR	208.00	357.24	362.05	359.43	362.13	0.000929	2.28	91.19	31.74	0.23
Plumtree	4550	2-YR	315.00	357.24	363.49	359.99	363.57	0.000566	2.28	150.40	187.73	0.19
Plumtree	4550	10-YR	716.00	357.24	370.40	361.49	370.43	0.000077	1.57	644.05	446.15	0.08
Plumtree	4550	50-YR	1330.00	357.24	372.15	363.08	372.16	0.000023	0.95	3299.34	505.54	0.05
Plumtree	4550	100-YR	1651.00	357.24	372.43	363.66	372.44	0.000032	1.13	3440.48	532.91	0.05
Plumtree	4550	200-YR	1971.00	357.24	372.63	364.23	372.64	0.000042	1.31	3543.92	582.39	0.06
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	208.00	351.69	359.43	354.76	359.47	0.000248	1.51	137.64	27.67	0.12
Plumtree	4344	2-YR	315.00	351.69	360.15	355.29	360.21	0.000387	2.00	157.81	28.78	0.15
Plumtree	4344	10-YR	716.00	351.69	361.69	356.83	361.88	0.000916	3.52	204.06	53.98	0.24
Plumtree	4344	50-YR	1330.00	351.69	363.02	358.52	363.42	0.001578	5.21	327.82	115.11	0.32
Plumtree	4344	100-YR	1651.00	351.69	363.56	359.24	364.05	0.001814	5.83	395.43	129.42	0.35
Plumtree	4344	200-YR	1971.00	351.69	364.05	359.90	364.60	0.001998	6.34	460.84	139.68	0.37
Plumtree	4289	1-YR	208.00	352.78	359.42		359.45	0.000256	1.44	144.48	33.55	0.12
Plumtree	4289	2-YR	315.00	352.78	360.13		360.18	0.000383	1.86	169.22	36.18	0.15
Plumtree	4289	10-YR	716.00	352.78	361.66		361.81	0.000807	3.12	248.68	109.93	0.23
Plumtree	4289	50-YR	1330.00	352.78	363.01		363.27	0.001167	4.31	435.59	162.18	0.28
Plumtree	4289	100-YR	1651.00	352.78	363.58		363.87	0.001260	4.71	530.93	174.45	0.30
Plumtree	4289	200-YR	1971.00	352.78	364.08		364.40	0.001327	5.04	619.84	182.45	0.31
Plumtree	4185	1-YR	194.00	354.77	359.13		359.37	0.004168	3.91	49.58	21.83	0.46
Plumtree	4185	2-YR	281.00	354.77	359.78		360.07	0.004178	4.36	64.39	23.96	0.47
Plumtree	4185	10-YR	684.00	354.77	361.07	360.51	361.60	0.005608	6.17	165.73	126.19	0.57
Plumtree	4185	50-YR	1345.00	354.77	362.76		363.08	0.002919	5.73	481.50	233.16	0.44
Plumtree	4185	100-YR	1694.00	354.77	363.40		363.69	0.002462	5.68	640.74	261.16	0.41
Plumtree	4185	200-YR	2010.00	354.77	363.95		364.21	0.002141	5.62	789.29	283.80	0.39
Plumtree	4033	1-YR	194.00	355.05	358.59		358.80	0.003219	3.69	52.60	20.78	0.41
Plumtree	4033	2-YR	281.00	355.05	359.24		359.50	0.003259	4.12	81.83	94.09	0.42
Plumtree	4033	10-YR	684.00	355.05	360.76		360.98	0.002345	4.55	290.49	169.76	0.38
Plumtree	4033	50-YR	1345.00	355.05	362.52		362.72	0.001666	4.79	665.64	288.22	0.34
Plumtree	4033	100-YR	1694.00	355.05	363.22		363.38	0.001345	4.62	873.12	305.25	0.31
Plumtree	4033	200-YR	2010.00	355.05	363.80		363.94	0.001170	4.55	1051.96	319.20	0.29

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	3930	1-YR	194.00	354.49	357.91	357.18	358.31	0.007228	5.04	38.76	19.95	0.60
Plumtree	3930	2-YR	281.00	354.49	358.52	357.71	359.00	0.006951	5.63	52.76	26.31	0.61
Plumtree	3930	10-YR	684.00	354.49	360.45	359.75	360.72	0.002793	5.10	295.73	194.26	0.42
Plumtree	3930	50-YR	1345.00	354.49	362.42	360.67	362.55	0.001212	4.27	724.37	238.08	0.29
Plumtree	3930	100-YR	1694.00	354.49	363.12	360.96	363.25	0.001088	4.33	896.18	252.06	0.28
Plumtree	3930	200-YR	2010.00	354.49	363.70	361.20	363.82	0.001003	4.37	1043.90	262.37	0.28
Plumtree	3816	1-YR	194.00	353.49	357.44	356.09	357.69	0.003718	4.05	52.55	31.80	0.43
Plumtree	3816	2-YR	281.00	353.49	358.14	356.65	358.42	0.003300	4.40	83.71	60.30	0.42
Plumtree	3816	10-YR	684.00	353.49	360.26	358.52	360.45	0.001691	4.37	323.09	152.31	0.33
Plumtree	3816	50-YR	1345.00	353.49	362.28	359.95	362.42	0.001066	4.27	679.80	209.68	0.27
Plumtree	3816	100-YR	1694.00	353.49	362.99	360.36	363.13	0.001016	4.43	810.80	224.47	0.27
Plumtree	3816	200-YR	2010.00	353.49	363.56	360.66	363.70	0.000989	4.57	917.95	230.84	0.27
Plumtree	3688	1-YR	194.00	352.86	357.03	355.33	357.27	0.002913	3.86	52.30	26.75	0.38
Plumtree	3688	2-YR	281.00	352.86	357.74	355.91	358.02	0.002875	4.38	80.39	53.28	0.39
Plumtree	3688	10-YR	684.00	352.86	359.99	358.20	360.22	0.001794	4.70	288.37	127.18	0.33
Plumtree	3688	50-YR	1345.00	352.86	362.07	359.68	362.26	0.001321	4.90	608.04	180.49	0.30
Plumtree	3688	100-YR	1694.00	352.86	362.78	360.18	362.98	0.001266	5.07	735.71	189.39	0.30
Plumtree	3688	200-YR	2010.00	352.86	363.36	360.55	363.56	0.001235	5.22	842.22	196.70	0.30
Plumtree	3550	1-YR	194.00	352.85	356.59	355.13	356.81	0.003779	3.72	52.73	26.24	0.43
Plumtree	3550	2-YR	281.00	352.85	357.37	355.76	357.61	0.002977	3.95	77.36	40.21	0.40
Plumtree	3550	10-YR	684.00	352.85	359.73	357.48	359.98	0.001724	4.42	250.98	108.18	0.33
Plumtree	3550	50-YR	1345.00	352.85	361.84	359.22	362.08	0.001311	4.80	510.43	154.01	0.31
Plumtree	3550	100-YR	1694.00	352.85	362.53	359.82	362.79	0.001358	5.18	603.09	166.11	0.32
Plumtree	3550	200-YR	2010.00	352.85	363.09	360.32	363.37	0.001391	5.47	681.48	179.96	0.33
Plumtree	3428	1-YR	194.00	351.86	356.15	354.43	356.39	0.003057	3.95	51.24	21.82	0.39
Plumtree	3428	2-YR	281.00	351.86	356.93	355.02	357.23	0.003127	4.46	71.06	28.64	0.40
Plumtree	3428	10-YR	684.00	351.86	359.29	357.13	359.70	0.002656	5.63	178.98	64.99	0.40
Plumtree	3428	50-YR	1345.00	351.86	361.29	359.25	361.82	0.002754	6.92	325.82	100.54	0.43
Plumtree	3428	100-YR	1694.00	351.86	361.87	359.89	362.51	0.003143	7.74	377.41	111.06	0.46
Plumtree	3428	200-YR	2010.00	351.86	362.34	360.42	363.07	0.003414	8.36	423.44	119.80	0.49
Plumtree	3296	1-YR	194.00	351.72	355.75		355.98	0.003120	3.85	50.42	16.51	0.39
Plumtree	3296	2-YR	281.00	351.72	356.47		356.78	0.003739	4.43	63.37	19.34	0.43
Plumtree	3296	10-YR	684.00	351.72	358.76		359.26	0.004096	5.67	122.54	36.15	0.48
Plumtree	3296	50-YR	1345.00	351.72	360.55		361.35	0.004343	7.37	240.26	103.06	0.53
Plumtree	3296	100-YR	1694.00	351.72	360.89	359.52	361.93	0.005445	8.56	277.32	116.02	0.60
Plumtree	3296	200-YR	2010.00	351.72	361.10	360.49	362.40	0.006654	9.67	302.03	123.99	0.66
Plumtree	3179	1-YR	194.00	350.39	355.46	353.81	355.60	0.002853	3.05	63.53	28.81	0.36
Plumtree	3179	2-YR	281.00	350.39	356.14	354.33	356.29	0.003730	3.17	88.59	48.61	0.41
Plumtree	3179	10-YR	684.00	350.39	358.81	356.14	358.94	0.001014	2.99	270.31	114.45	0.25
Plumtree	3179	50-YR	1345.00	350.39	360.78	357.22	360.96	0.000912	3.62	501.17	158.33	0.25
Plumtree	3179	100-YR	1694.00	350.39	361.21	357.74	361.44	0.001118	4.18	554.06	163.93	0.28
Plumtree	3179	200-YR	2010.00	350.39	361.52	358.17	361.80	0.001321	4.67	592.84	167.89	0.31
Plumtree	3077	1-YR	194.00	350.72	355.09		355.27	0.003712	3.37	59.60	65.72	0.42
Plumtree	3077	2-YR	281.00	350.72	355.88		356.01	0.002025	3.04	133.93	116.13	0.32
Plumtree	3077	10-YR	684.00	350.72	358.82		358.86	0.000367	2.11	606.87	187.15	0.16
Plumtree	3077	50-YR	1345.00	350.72	360.81		360.87	0.000380	2.62	1007.76	227.84	0.17
Plumtree	3077	100-YR	1694.00	350.72	361.25		361.32	0.000474	3.04	1110.37	239.98	0.19
Plumtree	3077	200-YR	2010.00	350.72	361.57		361.66	0.000562	3.40	1188.32	248.18	0.21
Plumtree	2978	1-YR	194.00	350.53	354.72	352.93	354.91	0.003428	3.56	54.56	22.85	0.41
Plumtree	2978	2-YR	281.00	350.53	355.55	353.58	355.76	0.003007	3.68	76.82	31.11	0.39
Plumtree	2978	10-YR	684.00	350.53	358.60	355.46	358.78	0.001106	3.63	253.93	79.43	0.27
Plumtree	2978	50-YR	1345.00	350.53	360.52	357.28	360.78	0.001223	4.64	470.03	150.46	0.30
Plumtree	2978	100-YR	1694.00	350.53	360.87	357.87	361.21	0.001579	5.43	524.25	162.68	0.34
Plumtree	2978	200-YR	2010.00	350.53	361.09	358.38	361.53	0.001939	6.13	561.09	163.60	0.38
Plumtree	2917	1-YR	194.00	350.36	354.47	352.82	354.70	0.003637	3.82	50.85	19.74	0.42
Plumtree	2917	2-YR	281.00	350.36	355.29	353.45	355.55	0.004041	4.02	69.91	28.07	0.45
Plumtree	2917	10-YR	684.00	350.36	358.53	355.50	358.71	0.001147	3.62	239.66	109.21	0.27
Plumtree	2917	50-YR	1345.00	350.36	360.51	357.06	360.69	0.000928	4.01	668.51	264.65	0.26
Plumtree	2917	100-YR	1694.00	350.36	360.87	357.78	361.10	0.001129	4.56	767.18	283.75	0.29
Plumtree	2917	200-YR	2010.00	350.36	361.11	358.40	361.38	0.001338	5.07	836.80	296.49	0.32
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	194.00	350.08	354.23	353.52	354.48	0.007196	4.05	48.48	35.30	0.57
Plumtree	2827	2-YR	281.00	350.08	354.81	354.01	355.07	0.005131	4.17	70.98	54.82	0.51
Plumtree	2827	10-YR	684.00	350.08	355.94	355.18	356.53	0.006592	6.32	122.47	118.66	0.62
Plumtree	2827	50-YR	1345.00	350.08	357.12	356.48	357.65	0.005058	6.82	345.02	163.88	0.57
Plumtree	2827	100-YR	1694.00	350.08	357.63	356.85	358.17	0.004801	7.15	431.51	178.17	0.57
Plumtree	2827	200-YR	2010.00	350.08	358.00	357.18	358.58	0.004763	7.48	500.83	188.81	0.57

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	2759	1-YR	194.00	349.32	354.01		354.20	0.002303	3.53	60.63	38.10	0.32
Plumtree	2759	2-YR	281.00	349.32	354.57		354.82	0.002628	4.15	98.08	92.38	0.36
Plumtree	2759	10-YR	684.00	349.32	355.77		356.08	0.003326	5.51	270.45	177.73	0.42
Plumtree	2759	50-YR	1345.00	349.32	356.97		357.27	0.003212	6.18	518.39	229.28	0.42
Plumtree	2759	100-YR	1694.00	349.32	357.51		357.79	0.002996	6.29	647.12	248.29	0.41
Plumtree	2759	200-YR	2010.00	349.32	357.91		358.18	0.002960	6.48	747.74	262.19	0.42
Plumtree	2589	1-YR	194.00	349.71	353.61		353.74	0.002925	3.59	99.38	67.53	0.36
Plumtree	2589	2-YR	281.00	349.71	354.20		354.33	0.002776	3.87	147.64	103.17	0.36
Plumtree	2589	10-YR	684.00	349.71	355.27		355.46	0.003595	5.22	286.47	151.61	0.42
Plumtree	2589	50-YR	1345.00	349.71	356.42		356.65	0.003839	6.25	492.52	226.96	0.46
Plumtree	2589	100-YR	1694.00	349.71	356.93		357.19	0.004216	6.92	611.11	244.13	0.48
Plumtree	2589	200-YR	2010.00	349.71	357.36		357.60	0.003863	6.92	719.39	257.90	0.47
Plumtree	2485	1-YR	194.00	349.20	352.27	352.17	353.06	0.016590	7.27	30.07	22.59	0.85
Plumtree	2485	2-YR	281.00	349.20	352.89	352.83	353.71	0.013332	7.65	48.55	35.32	0.79
Plumtree	2485	10-YR	684.00	349.20	354.47		354.93	0.006687	7.24	218.29	147.21	0.60
Plumtree	2485	50-YR	1345.00	349.20	355.88		356.21	0.004449	7.10	460.01	193.08	0.52
Plumtree	2485	100-YR	1694.00	349.20	356.46		356.76	0.003882	7.06	574.36	202.38	0.49
Plumtree	2485	200-YR	2010.00	349.20	356.93		357.21	0.003558	7.08	669.94	208.28	0.47
Plumtree	2331	1-YR	194.00	348.10	351.56		351.81	0.003863	4.04	48.43	21.42	0.45
Plumtree	2331	2-YR	281.00	348.10	352.29		352.59	0.003609	4.47	68.21	50.05	0.45
Plumtree	2331	10-YR	684.00	348.10	353.83		354.20	0.003293	5.58	220.78	124.01	0.46
Plumtree	2331	50-YR	1345.00	348.10	355.20		355.62	0.003241	6.57	406.18	147.36	0.47
Plumtree	2331	100-YR	1694.00	348.10	355.74		356.19	0.003317	7.04	488.00	157.75	0.48
Plumtree	2331	200-YR	2010.00	348.10	356.19		356.66	0.003322	7.36	561.19	166.62	0.49
Plumtree	2153	1-YR	194.00	346.39	351.13		351.30	0.002036	3.41	61.98	21.90	0.30
Plumtree	2153	2-YR	281.00	346.39	351.81		352.05	0.002459	4.05	93.52	69.91	0.33
Plumtree	2153	10-YR	684.00	346.39	353.31		353.62	0.003032	5.32	240.41	119.33	0.38
Plumtree	2153	50-YR	1345.00	346.39	354.66		355.01	0.003359	6.39	419.11	142.06	0.41
Plumtree	2153	100-YR	1694.00	346.39	355.18		355.56	0.003521	6.85	494.35	148.26	0.43
Plumtree	2153	200-YR	2010.00	346.39	355.63		356.03	0.003567	7.15	562.26	153.92	0.43
Plumtree	1994	1-YR	194.00	346.45	350.69		350.92	0.002876	3.81	53.73	27.64	0.37
Plumtree	1994	2-YR	281.00	346.45	351.26		351.58	0.003507	4.58	74.72	58.37	0.41
Plumtree	1994	10-YR	684.00	346.45	352.72		353.09	0.003643	5.78	227.37	128.85	0.44
Plumtree	1994	50-YR	1345.00	346.45	354.06		354.45	0.003680	6.75	428.48	170.44	0.46
Plumtree	1994	100-YR	1694.00	346.45	354.62		355.00	0.003464	6.92	526.83	175.59	0.45
Plumtree	1994	200-YR	2010.00	346.45	355.09		355.47	0.003368	7.11	610.33	184.40	0.45
Plumtree	1888	1-YR	194.00	345.73	350.34	348.84	350.59	0.003212	4.17	62.43	49.36	0.40
Plumtree	1888	2-YR	281.00	345.73	350.93	349.55	351.21	0.003164	4.62	97.95	70.38	0.41
Plumtree	1888	10-YR	684.00	345.73	352.40	351.58	352.71	0.003118	5.68	259.63	132.36	0.43
Plumtree	1888	50-YR	1345.00	345.73	353.72	352.58	354.07	0.003261	6.72	451.75	158.88	0.46
Plumtree	1888	100-YR	1694.00	345.73	354.29	352.96	354.64	0.003232	7.06	544.04	168.43	0.46
Plumtree	1888	200-YR	2010.00	345.73	354.75	353.21	355.12	0.003184	7.31	624.58	175.88	0.46
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	194.00	346.61	350.26		350.35	0.001593	2.87	108.38	72.28	0.29
Plumtree	1830	2-YR	281.00	346.61	350.85		350.95	0.001542	3.09	157.37	90.09	0.30
Plumtree	1830	10-YR	684.00	346.61	352.32		352.45	0.001484	3.83	353.62	152.17	0.31
Plumtree	1830	50-YR	1345.00	346.61	353.60		353.78	0.001764	4.88	550.81	156.79	0.35
Plumtree	1830	100-YR	1694.00	346.61	354.12		354.33	0.001902	5.35	632.77	159.45	0.37
Plumtree	1830	200-YR	2010.00	346.61	354.54		354.78	0.002032	5.77	701.40	163.76	0.38
Plumtree	1641	1-YR	194.00	345.19	349.67		349.90	0.003208	4.02	60.72	31.27	0.39
Plumtree	1641	2-YR	281.00	345.19	350.09		350.43	0.004263	5.02	78.24	65.10	0.46
Plumtree	1641	10-YR	684.00	345.19	351.23		351.81	0.006283	7.28	183.88	113.38	0.58
Plumtree	1641	50-YR	1345.00	345.19	352.55		353.11	0.005808	8.21	358.76	147.37	0.58
Plumtree	1641	100-YR	1694.00	345.19	353.13		353.67	0.005366	8.38	447.06	157.00	0.57
Plumtree	1641	200-YR	2010.00	345.19	353.58		354.12	0.005156	8.57	519.78	164.28	0.56
Plumtree	1463	1-YR	194.00	343.35	349.50		349.58	0.000923	2.19	109.18	98.22	0.21
Plumtree	1463	2-YR	281.00	343.35	349.90		350.00	0.001149	2.64	152.66	118.10	0.24
Plumtree	1463	10-YR	684.00	343.35	350.92		351.12	0.002005	4.11	286.86	146.24	0.34
Plumtree	1463	50-YR	1345.00	343.35	352.11		352.39	0.002450	5.30	481.67	181.37	0.39
Plumtree	1463	100-YR	1694.00	343.35	352.70		352.99	0.002362	5.55	593.11	194.91	0.39
Plumtree	1463	200-YR	2010.00	343.35	353.16		353.45	0.002321	5.76	684.33	202.46	0.39
Plumtree	1291	1-YR	409.00	344.26	349.04		349.21	0.003527	4.09	194.27	220.19	0.41
Plumtree	1291	2-YR	588.00	344.26	349.39		349.58	0.003918	4.61	273.85	239.74	0.44
Plumtree	1291	10-YR	1267.00	344.26	350.43		350.62	0.003619	5.28	567.44	311.15	0.44
Plumtree	1291	50-YR	2334.00	344.26	351.74		351.90	0.002744	5.45	1024.72	393.69	0.40
Plumtree	1291	100-YR	2969.00	344.26	352.40		352.55	0.002292	5.36	1294.42	413.26	0.37

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	1291	200-YR	3502.00	344.26	352.90		353.04	0.002032	5.30	1503.26	419.10	0.35
Plumtree	1124	1-YR	409.00	343.58	348.36		348.57	0.004090	4.55	208.66	243.53	0.46
Plumtree	1124	2-YR	588.00	343.58	348.83		348.98	0.003170	4.29	326.97	261.69	0.41
Plumtree	1124	10-YR	1267.00	343.58	349.99		350.11	0.002334	4.39	642.74	280.57	0.37
Plumtree	1124	50-YR	2334.00	343.58	351.39		351.51	0.001869	4.71	1055.16	310.81	0.34
Plumtree	1124	100-YR	2969.00	343.58	352.07		352.21	0.001746	4.90	1273.72	325.07	0.34
Plumtree	1124	200-YR	3502.00	343.58	352.59		352.73	0.001682	5.06	1443.96	333.39	0.34
Plumtree	994	1-YR	409.00	342.85	347.96		348.09	0.003019	3.47	217.89	183.33	0.39
Plumtree	994	2-YR	588.00	342.85	348.49		348.60	0.002455	3.40	323.77	206.79	0.36
Plumtree	994	10-YR	1267.00	342.85	349.68		349.81	0.002198	4.05	585.15	233.12	0.36
Plumtree	994	50-YR	2334.00	342.85	351.09		351.26	0.001957	4.70	942.23	271.07	0.36
Plumtree	994	100-YR	2969.00	342.85	351.78		351.96	0.001885	5.00	1134.75	287.56	0.36
Plumtree	994	200-YR	3502.00	342.85	352.30		352.49	0.001843	5.23	1286.64	298.96	0.36
Plumtree	911	1-YR	409.00	342.92	347.66		347.83	0.003124	4.12	215.20	193.68	0.40
Plumtree	911	2-YR	588.00	342.92	348.29		348.40	0.002179	3.77	344.28	214.09	0.34
Plumtree	911	10-YR	1267.00	342.92	349.51		349.64	0.002020	4.38	619.95	237.64	0.35
Plumtree	911	50-YR	2334.00	342.92	350.94		351.09	0.001901	5.03	987.02	273.10	0.35
Plumtree	911	100-YR	2969.00	342.92	351.64		351.80	0.001853	5.32	1182.56	288.14	0.35
Plumtree	911	200-YR	3502.00	342.92	352.16		352.33	0.001829	5.54	1335.84	298.74	0.35
Plumtree	762	1-YR	409.00	342.54	347.00		347.27	0.004546	4.67	123.72	68.67	0.49
Plumtree	762	2-YR	588.00	342.54	347.54		347.91	0.005241	5.60	191.35	162.35	0.54
Plumtree	762	10-YR	1267.00	342.54	349.03		349.28	0.002970	5.41	508.07	239.77	0.44
Plumtree	762	50-YR	2334.00	342.54	350.56		350.79	0.002271	5.69	906.73	281.00	0.40
Plumtree	762	100-YR	2969.00	342.54	351.28		351.51	0.002113	5.90	1116.21	299.77	0.39
Plumtree	762	200-YR	3502.00	342.54	351.82		352.05	0.002024	6.06	1280.52	311.17	0.39
Plumtree	658	1-YR	409.00	340.20	346.93		347.04	0.000944	2.82	191.78	175.08	0.24
Plumtree	658	2-YR	588.00	340.20	347.49		347.63	0.001043	3.22	306.50	227.57	0.26
Plumtree	658	10-YR	1267.00	340.20	348.93		349.08	0.001036	3.82	704.31	299.43	0.27
Plumtree	658	50-YR	2334.00	340.20	350.47		350.62	0.000974	4.29	1187.10	328.33	0.27
Plumtree	658	100-YR	2969.00	340.20	351.19		351.35	0.000974	4.55	1429.48	344.63	0.27
Plumtree	658	200-YR	3502.00	340.20	351.73		351.89	0.000982	4.76	1617.67	357.61	0.28
Plumtree	526	1-YR	409.00	341.63	346.79		346.90	0.001209	2.98	268.33	264.50	0.26
Plumtree	526	2-YR	588.00	341.63	347.40		347.48	0.000978	2.95	433.61	279.23	0.24
Plumtree	526	10-YR	1267.00	341.63	348.85		348.93	0.000828	3.26	864.17	309.96	0.23
Plumtree	526	50-YR	2334.00	341.63	350.39		350.48	0.000804	3.73	1364.67	339.90	0.24
Plumtree	526	100-YR	2969.00	341.63	351.11		351.21	0.000811	3.98	1614.07	352.16	0.24
Plumtree	526	200-YR	3502.00	341.63	351.65		351.75	0.000822	4.18	1804.92	361.35	0.25
Plumtree	380	1-YR	409.00	341.92	346.39		346.63	0.002735	4.07	137.31	139.39	0.39
Plumtree	380	2-YR	588.00	341.92	347.06	345.29	347.27	0.002208	4.07	259.16	192.43	0.36
Plumtree	380	10-YR	1267.00	341.92	348.58		348.76	0.001710	4.44	570.83	218.51	0.33
Plumtree	380	50-YR	2334.00	341.92	350.10		350.31	0.001622	5.10	919.08	236.04	0.34
Plumtree	380	100-YR	2969.00	341.92	350.81		351.04	0.001631	5.45	1088.03	241.46	0.35
Plumtree	380	200-YR	3502.00	341.92	351.33		351.58	0.001655	5.73	1214.86	245.32	0.35
Plumtree	146	1-YR	409.00	340.73	343.99	343.99	345.17	0.019890	8.74	46.80	19.99	1.01
Plumtree	146	2-YR	588.00	340.73	344.83	344.83	346.08	0.014900	9.05	70.94	44.91	0.91
Plumtree	146	10-YR	1267.00	340.73	346.68	346.68	347.87	0.009273	9.77	218.25	109.70	0.78
Plumtree	146	50-YR	2334.00	340.73	348.03	348.03	349.43	0.009357	11.54	389.16	141.40	0.81
Plumtree	146	100-YR	2969.00	340.73	348.61	348.61	350.14	0.009699	12.46	473.87	153.27	0.84
Plumtree	146	200-YR	3502.00	340.73	349.02	349.02	350.65	0.009988	13.15	538.60	160.49	0.86
Plumtree	63	1-YR	409.00	340.00	343.56	342.21	343.79	0.003500	3.88	105.38	43.62	0.44
Plumtree	63	2-YR	588.00	340.00	344.20	342.77	344.50	0.003507	4.36	135.27	50.35	0.45
Plumtree	63	10-YR	1267.00	340.00	345.82	344.14	346.34	0.003506	5.87	239.67	81.42	0.49
Plumtree	63	50-YR	2334.00	340.00	347.52	345.70	348.27	0.003501	7.27	424.21	126.63	0.51
Plumtree	63	100-YR	2969.00	340.00	348.30	346.56	349.14	0.003500	7.86	528.05	139.18	0.53
Plumtree	63	200-YR	3502.00	340.00	348.88	347.12	349.79	0.003504	8.30	610.50	146.84	0.53

HEC-RAS Plan: G River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	10286	1-YR	396.90	396.81	0.09	2.35	0.01	2.21	100.81	119.97	150.01	0.48
Plumtree	10286	2-YR	397.10	396.98	0.12	2.33	0.01	4.42	135.53	167.05	154.15	0.59
Plumtree	10286	10-YR	397.76	397.61	0.15	2.52	0.03	19.19	248.06	328.76	169.55	0.71
Plumtree	10286	50-YR	398.28	398.02	0.26	2.50	0.01	43.93	402.79	548.28	179.36	1.14
Plumtree	10286	100-YR	398.46	398.13	0.33	2.40	0.00	58.41	481.43	660.16	180.17	1.44
Plumtree	10286	200-YR	398.69	398.27	0.41	2.26	0.03	77.51	572.31	791.19	181.16	1.77
Plumtree	10044	1-YR	394.55	394.38	0.18	2.60	0.01		152.30	70.70	160.05	0.73
Plumtree	10044	2-YR	394.76	394.57	0.19	2.43	0.01		195.94	111.06	181.74	0.80
Plumtree	10044	10-YR	395.21	394.81	0.41	0.61	0.10	0.00	352.99	243.01	200.40	1.68
Plumtree	10044	50-YR	395.77	395.38	0.39	0.37	0.10	0.60	515.42	478.99	233.97	1.59
Plumtree	10044	100-YR	396.06	395.72	0.34	0.38	0.08	1.76	584.95	613.28	254.77	1.40
Plumtree	10044	200-YR	396.40	396.08	0.31	0.40	0.07	3.79	661.98	775.24	273.51	1.27
Plumtree	9814	1-YR	391.94	391.65	0.29	0.64	0.02		223.00		43.53	0.79
Plumtree	9814	2-YR	392.32	392.01	0.31	0.55	0.01	0.00	307.00		52.13	0.83
Plumtree	9814	10-YR	394.04	393.96	0.08	0.04	0.01	24.95	447.03	124.02	271.98	0.20
Plumtree	9814	50-YR	395.29	395.23	0.06	0.03	0.00	75.66	607.15	312.19	304.26	0.17
Plumtree	9814	100-YR	395.60	395.53	0.07	0.03	0.00	98.10	708.04	393.86	314.85	0.19
Plumtree	9814	200-YR	395.93	395.84	0.09	0.04	0.00	127.89	841.44	471.66	365.08	0.24
Plumtree	9762	1-YR	391.29	390.84	0.45	0.16	0.09		223.00		30.27	1.18
Plumtree	9762	2-YR	391.76	391.35	0.41	0.15	0.07		303.98	3.02	69.11	1.05
Plumtree	9762	10-YR	393.99	393.94	0.05	0.02	0.01	13.30	402.05	180.65	227.81	0.15
Plumtree	9762	50-YR	395.26	395.20	0.06	0.02	0.01	47.74	599.28	347.99	286.52	0.16
Plumtree	9762	100-YR	395.57	395.50	0.07	0.02	0.01	63.26	699.04	437.71	320.88	0.19
Plumtree	9762	200-YR	395.89	395.80	0.09	0.03	0.01	84.40	831.16	525.44	335.42	0.24
Plumtree	9732	1-YR	391.03	390.89	0.15				223.00		34.50	0.34
Plumtree	9732	2-YR	391.54	391.35	0.19				307.00		37.48	0.41
Plumtree	9732	10-YR	393.96	393.80	0.16			3.47	589.57	2.96	166.76	0.28
Plumtree	9732	50-YR	395.24	395.10	0.14			35.47	778.19	181.33	223.62	0.28
Plumtree	9732	100-YR	395.54	395.38	0.16			49.24	903.45	247.31	234.51	0.34
Plumtree	9732	200-YR	395.86	395.66	0.19			67.74	1043.22	330.04	244.65	0.41
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	389.52	389.31	0.21	0.36	0.02	0.20	222.44	0.37	35.83	0.49
Plumtree	9589	2-YR	390.13	389.91	0.23	0.28	0.03	1.52	303.47	2.01	42.28	0.49
Plumtree	9589	10-YR	391.33	390.90	0.42	0.28	0.11	6.35	580.89	8.76	59.14	0.83
Plumtree	9589	50-YR	392.50	391.93	0.57	0.26	0.17	65.48	901.22	28.30	103.74	1.11
Plumtree	9589	100-YR	393.01	392.39	0.61	0.25	0.19	101.42	1048.94	49.64	209.24	1.20
Plumtree	9589	200-YR	393.46	392.87	0.59	0.24	0.17	145.41	1166.12	129.46	266.88	1.20
Plumtree	9499	1-YR	389.15	388.97	0.18	0.44	0.01		186.11	17.89	50.97	0.45
Plumtree	9499	2-YR	389.82	389.65	0.17	0.44	0.03	0.18	260.43	42.39	94.68	0.44
Plumtree	9499	10-YR	390.93	390.73	0.20	0.32	0.01	67.46	450.76	141.78	157.15	0.55
Plumtree	9499	50-YR	392.06	391.84	0.22	0.27	0.00	219.41	672.97	297.62	169.63	0.64
Plumtree	9499	100-YR	392.57	392.33	0.24	0.25	0.00	308.70	783.54	381.76	174.40	0.68
Plumtree	9499	200-YR	393.05	392.80	0.25	0.25	0.00	404.31	893.04	469.65	178.62	0.72
Plumtree	9398	1-YR	388.70	388.37	0.32	0.34	0.03		204.00		15.87	0.70
Plumtree	9398	2-YR	389.35	388.85	0.50	0.50	0.04	1.99	300.74	0.27	77.23	1.08
Plumtree	9398	10-YR	390.60	390.27	0.33	0.53	0.05	130.16	430.95	98.88	164.05	0.92
Plumtree	9398	50-YR	391.79	391.53	0.27	0.48	0.09	364.39	563.42	262.19	181.61	0.88
Plumtree	9398	100-YR	392.31	392.05	0.26	0.47	0.10	489.84	633.54	350.62	187.07	0.92
Plumtree	9398	200-YR	392.80	392.53	0.27	0.47	0.11	629.42	708.44	429.14	197.09	0.96
Plumtree	9301	1-YR	388.33	388.11	0.22	0.49	0.02	6.54	197.46		32.60	0.46
Plumtree	9301	2-YR	388.81	388.45	0.36	0.66	0.01	16.15	285.55	1.29	65.11	0.77
Plumtree	9301	10-YR	390.01	389.14	0.86	0.81	0.16	59.38	555.49	45.13	89.90	1.93
Plumtree	9301	50-YR	391.22	390.05	1.17	0.82	0.24	146.57	846.16	197.27	99.28	2.84
Plumtree	9301	100-YR	391.73	390.45	1.28	0.82	0.27	198.39	982.27	293.34	103.18	3.22
Plumtree	9301	200-YR	392.21	390.80	1.41	0.83	0.30	253.55	1118.71	394.74	106.55	3.62
Plumtree	9196	1-YR	387.81	387.40	0.42	0.89	0.09	21.05	181.15	1.80	107.80	1.13
Plumtree	9196	2-YR	388.14	387.70	0.44	0.94	0.09	63.48	231.67	7.85	120.63	1.32
Plumtree	9196	10-YR	389.04	388.69	0.34	0.94	0.04	253.08	346.16	60.76	142.32	1.25
Plumtree	9196	50-YR	390.04	389.68	0.36	1.01	0.01	529.16	500.68	160.16	153.75	1.40
Plumtree	9196	100-YR	390.48	390.10	0.38	1.05	0.00	680.05	579.29	214.66	157.84	1.50
Plumtree	9196	200-YR	390.90	390.50	0.41	1.07	0.00	836.39	658.43	272.18	162.06	1.60
Plumtree	8987	1-YR	386.67	386.54	0.13	0.98	0.03	16.01	152.73	35.26	115.30	0.37
Plumtree	8987	2-YR	387.09	386.94	0.15	1.05	0.03	33.38	195.90	73.71	120.24	0.45
Plumtree	8987	10-YR	388.07	387.85	0.22	1.10	0.01	104.41	334.24	221.35	131.50	0.75
Plumtree	8987	50-YR	389.02	388.70	0.32	1.05	0.02	225.87	515.19	448.94	140.81	1.16
Plumtree	8987	100-YR	389.43	389.06	0.38	0.99	0.05	296.23	605.22	572.55	144.19	1.37
Plumtree	8987	200-YR	389.83	389.41	0.42	0.95	0.06	372.10	692.95	701.96	147.51	1.55

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	8753	1-YR	385.66	385.24	0.42	1.15	0.07	44.58	157.65	1.76	79.52	1.22
Plumtree	8753	2-YR	386.01	385.56	0.45	1.06	0.08	98.47	198.15	6.38	86.08	1.45
Plumtree	8753	10-YR	386.95	386.59	0.37	0.87	0.05	342.61	286.30	31.09	158.99	1.45
Plumtree	8753	50-YR	387.95	387.69	0.26	0.74	0.00	771.96	354.92	63.12	221.78	1.23
Plumtree	8753	100-YR	388.40	388.17	0.22	0.68	0.01	1019.51	373.80	80.69	242.42	1.09
Plumtree	8753	200-YR	388.82	388.61	0.21	0.64	0.01	1267.38	398.40	101.22	251.53	1.03
Plumtree	8579	1-YR	384.40	384.21	0.19	0.49	0.03	52.18	145.55	6.26	90.48	0.60
Plumtree	8579	2-YR	384.86	384.68	0.19	0.51	0.02	99.53	183.48	19.99	100.67	0.62
Plumtree	8579	10-YR	386.04	385.82	0.22	0.57	0.01	267.50	307.18	85.33	118.38	0.77
Plumtree	8579	50-YR	387.21	386.92	0.28	0.65	0.00	516.36	475.67	197.96	138.78	1.04
Plumtree	8579	100-YR	387.70	387.39	0.32	0.69	0.00	653.61	560.11	260.28	148.80	1.17
Plumtree	8579	200-YR	388.16	387.82	0.34	0.72	0.00	796.55	638.14	332.31	154.62	1.27
Plumtree	8374	1-YR	383.88	383.79	0.09	0.45	0.04	54.74	149.26		87.23	0.24
Plumtree	8374	2-YR	384.33	384.22	0.11	0.48	0.04	103.00	200.00		93.27	0.32
Plumtree	8374	10-YR	385.46	385.28	0.18	0.57	0.03	295.91	363.51	0.58	109.73	0.54
Plumtree	8374	50-YR	386.55	386.28	0.27	0.66	0.03	603.08	579.44	7.48	122.59	0.84
Plumtree	8374	100-YR	387.01	386.69	0.32	0.70	0.03	771.76	688.37	13.87	127.75	0.99
Plumtree	8374	200-YR	387.44	387.06	0.37	0.74	0.03	947.53	797.47	22.00	133.84	1.14
Plumtree	8229	1-YR	383.38	382.85	0.53	1.17	0.04	31.07	165.38	7.55	65.24	1.44
Plumtree	8229	2-YR	383.82	383.35	0.46	1.23	0.01	77.59	202.58	22.83	83.98	1.42
Plumtree	8229	10-YR	384.86	384.36	0.50	1.27	0.02	239.46	319.47	101.07	112.21	1.79
Plumtree	8229	50-YR	385.86	385.30	0.56	1.38	0.03	484.69	456.77	248.54	134.89	2.25
Plumtree	8229	100-YR	386.28	385.69	0.59	1.42	0.03	619.25	519.88	334.87	140.31	2.44
Plumtree	8229	200-YR	386.67	386.03	0.64	1.46	0.03	757.95	584.37	424.68	145.12	2.67
Plumtree	8094	1-YR	382.12	381.72	0.40	0.90	0.09	12.66	189.37	1.97	63.21	0.98
Plumtree	8094	2-YR	382.58	382.02	0.56	1.05	0.13	34.18	257.99	10.83	90.41	1.42
Plumtree	8094	10-YR	383.57	382.88	0.69	1.21	0.16	145.88	420.76	93.36	122.69	2.09
Plumtree	8094	50-YR	384.46	383.61	0.85	1.37	0.18	326.98	607.89	255.13	143.69	2.91
Plumtree	8094	100-YR	384.83	383.91	0.92	1.43	0.20	424.63	696.03	353.34	150.74	3.28
Plumtree	8094	200-YR	385.17	384.20	0.97	1.45	0.20	530.97	777.60	458.43	157.23	3.57
Plumtree	7954	1-YR	381.13	381.03	0.10	1.20	0.01	84.35	76.38	43.27	155.83	0.58
Plumtree	7954	2-YR	381.39	381.27	0.12	1.25	0.01	127.21	96.85	78.94	159.97	0.70
Plumtree	7954	10-YR	382.08	381.91	0.17	1.31	0.00	282.07	160.92	217.01	170.78	1.04
Plumtree	7954	50-YR	382.83	382.59	0.23	1.32	0.01	514.36	244.99	430.65	186.15	1.44
Plumtree	7954	100-YR	383.16	382.90	0.26	1.31	0.01	644.65	285.55	543.81	190.97	1.61
Plumtree	7954	200-YR	383.48	383.19	0.29	1.29	0.01	780.72	325.75	660.53	195.42	1.76
Plumtree	7800	1-YR	379.92	379.84	0.08	1.26	0.01	47.75	51.02	105.23	173.24	0.64
Plumtree	7800	2-YR	380.14	380.04	0.10	1.21	0.01	74.14	69.94	158.92	178.07	0.77
Plumtree	7800	10-YR	380.76	380.61	0.15	1.08	0.03	176.86	132.62	350.53	187.27	1.08
Plumtree	7800	50-YR	381.50	381.29	0.21	0.97	0.04	338.28	219.87	631.85	198.24	1.36
Plumtree	7800	100-YR	381.85	381.61	0.23	0.96	0.05	427.91	265.11	780.98	203.38	1.48
Plumtree	7800	200-YR	382.18	381.92	0.26	0.94	0.06	522.30	310.94	933.76	208.31	1.58
Plumtree	7548	1-YR	378.65	378.60	0.05	0.91	0.00	45.78	61.92	96.30	273.00	0.33
Plumtree	7548	2-YR	378.91	378.86	0.05	0.87	0.00	94.29	73.12	135.59	278.99	0.35
Plumtree	7548	10-YR	379.65	379.60	0.05	0.64	0.00	287.58	107.01	265.41	296.87	0.40
Plumtree	7548	50-YR	380.49	380.43	0.06	0.52	0.00	587.70	150.28	452.02	312.50	0.45
Plumtree	7548	100-YR	380.84	380.77	0.07	0.46	0.00	749.06	172.97	551.97	317.14	0.49
Plumtree	7548	200-YR	381.18	381.11	0.07	0.42	0.01	917.43	195.23	654.34	321.55	0.53
Plumtree	7367	1-YR	377.74	377.68	0.06	0.61	0.01	0.59		203.41	116.77	
Plumtree	7367	2-YR	378.04	377.96	0.08	0.69	0.01	6.76		296.24	145.36	
Plumtree	7367	10-YR	379.01	378.94	0.07	0.26	0.01	86.59	3.18	570.23	236.71	0.13
Plumtree	7367	50-YR	379.97	379.91	0.06	0.24	0.00	269.68	26.58	893.74	398.33	0.26
Plumtree	7367	100-YR	380.38	380.32	0.06	0.22	0.00	392.04	40.34	1041.62	407.24	0.27
Plumtree	7367	200-YR	380.76	380.70	0.06	0.21	0.00	515.81	54.15	1197.04	414.08	0.29
Plumtree	7216	1-YR	377.12	377.08	0.04	0.83	0.02	57.16	127.66	19.18	193.43	0.15
Plumtree	7216	2-YR	377.34	377.29	0.05	0.83	0.01	86.56	182.84	33.60	205.19	0.21
Plumtree	7216	10-YR	378.75	378.71	0.04	0.14	0.00	205.06	332.37	122.57	267.18	0.14
Plumtree	7216	50-YR	379.73	379.68	0.06	0.16	0.00	384.75	553.63	251.62	297.22	0.19
Plumtree	7216	100-YR	380.16	380.09	0.07	0.18	0.00	485.92	666.30	321.79	309.00	0.22
Plumtree	7216	200-YR	380.55	380.48	0.07	0.19	0.00	596.74	777.34	392.92	317.20	0.24
Plumtree	7030	1-YR	376.26	376.00	0.26	1.12	0.02	112.49	83.91	7.60	152.85	1.47
Plumtree	7030	2-YR	376.50	376.33	0.17	0.12	0.05	194.07	90.45	18.48	165.15	1.12
Plumtree	7030	10-YR	378.60	378.57	0.03	0.05	0.00	464.96	87.42	107.62	222.61	0.18
Plumtree	7030	50-YR	379.56	379.52	0.04	0.07	0.00	837.92	137.63	214.45	235.14	0.28
Plumtree	7030	100-YR	379.98	379.92	0.05	0.08	0.00	1048.89	164.90	260.21	246.28	0.33
Plumtree	7030	200-YR	380.36	380.30	0.06	0.09	0.00	1258.53	192.69	315.78	258.46	0.39

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	6893	1-YR	374.35	374.17	0.19	0.48	0.02	47.59	153.88	2.52	108.10	0.57
Plumtree	6893	2-YR	376.34	376.32	0.02	0.03	0.00	152.10	125.16	25.74	179.14	0.07
Plumtree	6893	10-YR	378.55	378.54	0.02	0.02	0.00	375.18	202.74	82.08	230.13	0.07
Plumtree	6893	50-YR	379.49	379.46	0.03	0.03	0.00	695.67	334.93	159.39	247.63	0.13
Plumtree	6893	100-YR	379.89	379.85	0.04	0.04	0.00	869.78	401.48	202.74	254.90	0.17
Plumtree	6893	200-YR	380.26	380.21	0.05	0.05	0.00	1051.67	467.24	248.09	261.02	0.21
Plumtree	6766	1-YR	373.85	373.73	0.12	0.21	0.00	44.40	158.58	1.02	102.85	0.36
Plumtree	6766	2-YR	376.31	376.30	0.01	0.01	0.00	135.21	144.87	22.92	205.84	0.04
Plumtree	6766	10-YR	378.53	378.52	0.01	0.01	0.00	326.87	240.28	92.85	280.31	0.05
Plumtree	6766	50-YR	379.46	379.43	0.03	0.02	0.00	598.90	403.36	187.74	325.42	0.10
Plumtree	6766	100-YR	379.85	379.81	0.04	0.02	0.00	749.23	484.35	240.42	345.85	0.13
Plumtree	6766	200-YR	380.21	380.17	0.04	0.03	0.00	899.69	560.52	306.79	357.59	0.16
Plumtree	6663	1-YR	373.64	373.53	0.11	0.15	0.00	25.57	178.40	0.03	93.10	0.25
Plumtree	6663	2-YR	376.30	376.28	0.01	0.01	0.00	127.56	147.61	27.83	225.15	0.04
Plumtree	6663	10-YR	378.52	378.51	0.01	0.01	0.00	327.45	221.52	111.03	326.76	0.04
Plumtree	6663	50-YR	379.43	379.41	0.02	0.02	0.00	604.31	351.06	234.64	344.22	0.08
Plumtree	6663	100-YR	379.82	379.80	0.03	0.02	0.00	752.22	415.50	306.28	352.46	0.10
Plumtree	6663	200-YR	380.18	380.15	0.03	0.03	0.00	908.90	477.27	380.82	357.77	0.12
Plumtree	6568	1-YR	373.48	373.35	0.14	0.19	0.01	37.37	167.18	3.44	87.18	0.33
Plumtree	6568	2-YR	376.28	376.27	0.01	0.01	0.00	138.77	122.46	53.77	214.71	0.05
Plumtree	6568	10-YR	378.51	378.50	0.01	0.01	0.00	368.18	186.28	161.54	279.20	0.06
Plumtree	6568	50-YR	379.41	379.39	0.03	0.03	0.00	709.34	306.28	314.38	300.09	0.12
Plumtree	6568	100-YR	379.80	379.76	0.04	0.03	0.00	886.52	365.05	399.44	311.83	0.16
Plumtree	6568	200-YR	380.16	380.11	0.04	0.04	0.00	1061.09	420.95	488.96	323.55	0.19
Plumtree	6454	1-YR	373.29	373.17	0.12	0.11	0.01	5.83	195.44	6.73	59.89	0.26
Plumtree	6454	2-YR	376.27	376.26	0.01	0.01	0.00	52.80	167.56	94.64	190.22	0.04
Plumtree	6454	10-YR	378.50	378.48	0.02	0.02	0.00	134.52	286.07	295.41	232.78	0.05
Plumtree	6454	50-YR	379.39	379.35	0.04	0.03	0.01	263.49	491.17	575.34	264.40	0.12
Plumtree	6454	100-YR	379.76	379.71	0.05	0.04	0.01	334.31	591.92	724.77	278.29	0.16
Plumtree	6454	200-YR	380.11	380.05	0.06	0.05	0.01	402.72	690.76	877.52	293.84	0.20
Plumtree	6350	1-YR	373.17	373.10	0.07	0.05	0.00		207.92	0.08	29.77	0.15
Plumtree	6350	2-YR	376.26	376.22	0.03	0.01	0.00	20.55	286.14	8.31	100.10	0.06
Plumtree	6350	10-YR	378.48	378.42	0.06	0.02	0.00	130.30	541.11	44.59	218.99	0.11
Plumtree	6350	50-YR	379.34	379.21	0.13	0.04	0.01	288.52	930.37	111.11	253.49	0.26
Plumtree	6350	100-YR	379.71	379.54	0.17	0.05	0.01	382.53	1116.69	151.79	267.33	0.34
Plumtree	6350	200-YR	380.05	379.84	0.20	0.06	0.01	487.17	1288.50	195.33	277.54	0.43
Plumtree	6296	1-YR	373.11	373.00	0.12			36.03	171.07	0.90	32.80	0.26
Plumtree	6296	2-YR	376.24	376.19	0.05			86.00	213.26	15.75	86.90	0.11
Plumtree	6296	10-YR	378.46	378.37	0.09			261.45	401.39	53.16	157.22	0.22
Plumtree	6296	50-YR	379.29	379.07	0.22			558.73	700.14	71.12	222.66	0.58
Plumtree	6296	100-YR	379.65	379.36	0.29			713.46	827.79	109.76	235.93	0.76
Plumtree	6296	200-YR	379.97	379.63	0.34			871.57	949.25	150.19	254.57	0.94
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	371.10	371.04	0.06	0.11	0.28	0.29	207.59	0.12	30.74	0.11
Plumtree	6197	2-YR	371.92	371.83	0.09	0.12	0.23	1.35	313.03	0.62	32.97	0.16
Plumtree	6197	10-YR	373.87	373.64	0.23	0.18	0.29	10.52	700.32	5.16	38.12	0.37
Plumtree	6197	50-YR	375.68	375.18	0.50	0.26	0.30	26.76	1286.50	16.73	58.51	0.77
Plumtree	6197	100-YR	376.41	375.77	0.65	0.30	0.31	43.66	1577.93	29.41	74.04	0.98
Plumtree	6197	200-YR	377.08	376.29	0.79	0.33	0.32	62.24	1861.95	46.81	98.53	1.20
Plumtree	6122	1-YR	370.71	369.71	1.00	0.54	0.26		208.00		12.66	2.45
Plumtree	6122	2-YR	371.56	370.71	0.85	0.25	0.23	0.20	314.16	0.64	29.98	1.99
Plumtree	6122	10-YR	373.39	372.18	1.21	0.23	0.33	21.76	644.54	49.71	44.82	2.63
Plumtree	6122	50-YR	375.12	373.61	1.50	0.28	0.40	125.77	1049.80	154.43	77.64	3.28
Plumtree	6122	100-YR	375.80	374.13	1.68	0.30	0.45	197.09	1242.86	211.05	82.42	3.70
Plumtree	6122	200-YR	376.43	374.58	1.85	0.32	0.49	271.98	1428.69	270.34	89.40	4.09
Plumtree	6028	1-YR	369.91	369.77	0.14	0.38	0.02	38.83	167.03	2.13	71.84	0.37
Plumtree	6028	2-YR	371.09	371.01	0.08	0.14	0.01	97.21	204.65	13.13	102.46	0.22
Plumtree	6028	10-YR	372.83	372.72	0.11	0.13	0.01	275.67	375.55	64.77	158.65	0.31
Plumtree	6028	50-YR	373.99	373.83	0.16	0.20	0.02	593.43	587.76	148.81	208.77	0.50
Plumtree	6028	100-YR	374.48	374.30	0.19	0.22	0.03	763.62	689.25	198.14	219.54	0.59
Plumtree	6028	200-YR	374.94	374.73	0.21	0.24	0.03	932.06	783.16	255.78	228.32	0.66
Plumtree	5926	1-YR	369.50	369.17	0.34	0.58	0.03	46.80	159.88	1.32	35.66	0.92
Plumtree	5926	2-YR	370.94	370.78	0.16	0.14	0.01	99.39	189.22	26.39	101.19	0.45
Plumtree	5926	10-YR	372.69	372.49	0.19	0.13	0.01	225.90	321.71	168.38	156.61	0.61
Plumtree	5926	50-YR	373.77	373.40	0.37	0.22	0.03	406.75	531.32	391.94	165.79	1.20
Plumtree	5926	100-YR	374.23	373.77	0.47	0.26	0.04	498.08	632.58	520.34	169.52	1.51
Plumtree	5926	200-YR	374.66	374.11	0.55	0.30	0.05	586.09	727.19	657.72	172.38	1.80

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5824	1-YR	368.90	368.65	0.25	0.17	0.05		208.00		26.94	0.60
Plumtree	5824	2-YR	370.79	370.68	0.11	0.05	0.01	6.31	302.24	6.45	75.68	0.22
Plumtree	5824	10-YR	372.54	372.39	0.15	0.07	0.00	69.64	562.46	83.91	160.46	0.31
Plumtree	5824	50-YR	373.52	373.25	0.26	0.13	0.01	175.85	920.18	233.96	169.43	0.58
Plumtree	5824	100-YR	373.92	373.61	0.32	0.16	0.02	236.92	1091.97	322.11	173.10	0.72
Plumtree	5824	200-YR	374.31	373.94	0.37	0.19	0.03	301.36	1253.82	415.82	176.62	0.85
Plumtree	5745	1-YR	368.68	368.58	0.10	0.03	0.01		207.77	0.23	30.26	0.21
Plumtree	5745	2-YR	370.73	370.66	0.07	0.01	0.00	3.33	297.55	14.11	79.16	0.13
Plumtree	5745	10-YR	372.47	372.33	0.15	0.02	0.01	50.03	616.02	49.95	103.64	0.27
Plumtree	5745	50-YR	373.38	373.00	0.38	0.05	0.02	127.87	1101.38	100.76	120.90	0.70
Plumtree	5745	100-YR	373.74	373.21	0.53	0.07	0.03	172.20	1351.18	127.62	137.80	0.98
Plumtree	5745	200-YR	374.08	373.37	0.71	0.09	0.05	217.62	1598.91	154.46	143.94	1.31
Plumtree	5711	1-YR	368.64	368.57	0.07				206.24	1.76	36.33	0.14
Plumtree	5711	2-YR	370.71	370.66	0.05			3.34	287.35	24.32	70.33	0.10
Plumtree	5711	10-YR	372.45	372.32	0.12			34.18	598.26	83.56	132.09	0.23
Plumtree	5711	50-YR	373.30	373.00	0.31			86.25	1058.45	185.31	173.96	0.58
Plumtree	5711	100-YR	373.64	373.21	0.43			119.70	1289.79	241.51	180.39	0.81
Plumtree	5711	200-YR	373.94	373.39	0.54			154.95	1503.34	312.71	184.16	1.04
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	366.79	366.72	0.07	0.06	0.01		208.00		30.30	0.15
Plumtree	5614	2-YR	367.81	367.72	0.09	0.05	0.01	3.61	311.39		52.39	0.18
Plumtree	5614	10-YR	371.74	371.68	0.05	0.01	0.01	114.71	542.98	58.31	187.30	0.10
Plumtree	5614	50-YR	372.83	372.72	0.11	0.02	0.02	229.62	923.10	177.29	227.21	0.22
Plumtree	5614	100-YR	373.25	373.11	0.14	0.03	0.03	298.90	1100.93	251.17	238.22	0.29
Plumtree	5614	200-YR	373.48	373.30	0.18	0.03	0.04	372.45	1283.74	314.81	239.07	0.37
Plumtree	5560	1-YR	366.73	366.62	0.11	0.12	0.02		208.00		26.10	0.23
Plumtree	5560	2-YR	367.75	367.61	0.13	0.11	0.03	0.77	312.93	1.29	55.67	0.27
Plumtree	5560	10-YR	371.72	371.68	0.04	0.02	0.01	184.59	442.07	89.34	289.25	0.09
Plumtree	5560	50-YR	372.79	372.72	0.07	0.03	0.01	423.98	691.08	214.95	324.47	0.17
Plumtree	5560	100-YR	373.20	373.12	0.08	0.03	0.01	554.41	809.51	287.08	337.98	0.21
Plumtree	5560	200-YR	373.41	373.31	0.10	0.04	0.02	679.13	939.52	352.35	343.03	0.27
Plumtree	5510	1-YR	366.58	366.23	0.35	0.05	0.01		208.00		17.58	0.78
Plumtree	5510	2-YR	367.61	367.22	0.39	0.05	0.01		315.00		20.61	0.82
Plumtree	5510	10-YR	371.70	371.60	0.09	0.01	0.02	119.91	473.50	122.59	229.46	0.22
Plumtree	5510	50-YR	372.75	372.59	0.16	0.01	0.04	272.96	756.65	300.39	251.97	0.41
Plumtree	5510	100-YR	373.15	372.96	0.20	0.01	0.05	355.04	890.60	405.36	257.18	0.51
Plumtree	5510	200-YR	373.35	373.09	0.26			430.48	1043.27	497.25	259.13	0.67
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	366.34	366.15	0.19	0.15	0.01		208.00		19.96	0.39
Plumtree	5474	2-YR	367.36	367.12	0.24	0.15	0.02		315.00		22.84	0.47
Plumtree	5474	10-YR	371.63	371.55	0.08	0.02	0.00	144.36	498.22	73.42	182.54	0.17
Plumtree	5474	50-YR	372.63	372.48	0.15	0.04	0.00	320.23	815.75	194.02	204.68	0.35
Plumtree	5474	100-YR	373.01	372.82	0.19	0.05	0.00	414.21	967.88	268.91	208.77	0.45
Plumtree	5474	200-YR	373.32	373.09	0.23	0.06	0.00	508.24	1117.55	345.21	211.96	0.56
Plumtree	5419	1-YR	366.17	365.94	0.23	0.33	0.00		208.00		17.95	0.49
Plumtree	5419	2-YR	367.18	366.89	0.30	0.27	0.02		315.00		20.17	0.60
Plumtree	5419	10-YR	371.60	371.53	0.07	0.03	0.01	148.89	452.05	115.06	203.65	0.17
Plumtree	5419	50-YR	372.59	372.44	0.15	0.06	0.02	329.32	745.84	254.84	222.66	0.37
Plumtree	5419	100-YR	372.96	372.77	0.19	0.07	0.02	425.91	887.13	337.97	226.46	0.48
Plumtree	5419	200-YR	373.26	373.02	0.23	0.09	0.03	522.48	1026.54	421.98	229.30	0.60
Plumtree	5323	1-YR	365.84	365.59	0.26	0.59	0.02	0.11	207.89		26.26	0.56
Plumtree	5323	2-YR	366.89	366.66	0.22	0.31	0.00	27.81	286.95	0.24	62.94	0.49
Plumtree	5323	10-YR	371.56	371.53	0.04	0.02	0.00	279.62	352.98	83.40	156.02	0.10
Plumtree	5323	50-YR	372.51	372.43	0.09	0.05	0.01	544.46	607.66	177.88	169.32	0.24
Plumtree	5323	100-YR	372.86	372.75	0.12	0.07	0.01	687.48	735.71	227.81	174.65	0.32
Plumtree	5323	200-YR	373.14	372.99	0.15	0.09	0.01	830.69	861.95	278.36	178.54	0.42
Plumtree	5209	1-YR	365.23	364.78	0.46	0.86	0.00		208.00		14.90	1.02
Plumtree	5209	2-YR	366.57	366.30	0.27	0.26	0.01	30.08	276.18	8.74	71.37	0.60
Plumtree	5209	10-YR	371.54	371.51	0.03	0.02	0.00	279.42	283.42	153.16	177.70	0.09
Plumtree	5209	50-YR	372.46	372.39	0.07	0.05	0.01	543.32	484.29	302.39	199.25	0.21
Plumtree	5209	100-YR	372.79	372.70	0.09	0.07	0.01	674.89	589.98	386.13	208.77	0.29
Plumtree	5209	200-YR	373.04	372.92	0.12	0.09	0.02	807.44	693.96	469.60	215.84	0.39
Plumtree	5107	1-YR	364.37	363.87	0.50	0.47	0.05		208.00		16.18	1.16
Plumtree	5107	2-YR	366.29	366.07	0.22	0.12	0.02		311.01	3.99	37.60	0.45
Plumtree	5107	10-YR	371.51	371.44	0.07	0.02	0.00	61.15	517.39	137.45	245.13	0.14

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5107	50-YR	372.39	372.23	0.16	0.04	0.01	183.55	888.38	258.07	286.81	0.33
Plumtree	5107	100-YR	372.71	372.49	0.22	0.05	0.01	253.88	1075.24	321.88	303.30	0.45
Plumtree	5107	200-YR	372.94	372.65	0.29	0.06	0.02	322.74	1262.74	385.52	314.34	0.60
Plumtree	5040	1-YR	363.85	363.52	0.32				208.00		18.96	0.72
Plumtree	5040	2-YR	366.15	366.01	0.14				315.00	0.00	27.89	0.28
Plumtree	5040	10-YR	371.49	371.43	0.06			105.83	573.05	37.13	251.68	0.11
Plumtree	5040	50-YR	372.35	372.22	0.13			288.30	947.13	94.56	288.72	0.26
Plumtree	5040	100-YR	372.64	372.47	0.18			383.20	1139.99	127.81	308.02	0.35
Plumtree	5040	200-YR	372.86	372.63	0.23			484.64	1326.70	159.66	313.77	0.46
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	362.81	362.54	0.26	0.23	0.06		208.00		21.30	0.59
Plumtree	4932	2-YR	364.04	363.80	0.24	0.17	0.04	0.02	314.98		38.47	0.49
Plumtree	4932	10-YR	370.49	370.41	0.08	0.01	0.02	84.63	611.58	19.80	132.46	0.13
Plumtree	4932	50-YR	372.25	372.11	0.14	0.02	0.04	240.54	1000.71	88.76	235.77	0.24
Plumtree	4932	100-YR	372.56	372.37	0.19	0.03	0.05	327.16	1201.38	122.47	240.48	0.33
Plumtree	4932	200-YR	372.80	372.56	0.24	0.04	0.06	413.47	1401.39	156.14	243.66	0.44
Plumtree	4845	1-YR	362.52	362.37	0.15	0.17	0.01		208.00		21.12	0.31
Plumtree	4845	2-YR	363.84	363.67	0.17	0.12	0.02	0.04	314.96		28.93	0.32
Plumtree	4845	10-YR	370.45	370.42	0.03	0.00	0.01	204.77	473.22	38.01	140.26	0.07
Plumtree	4845	50-YR	372.19	372.12	0.07	0.01	0.02	409.44	812.13	108.43	177.24	0.13
Plumtree	4845	100-YR	372.48	372.39	0.10	0.01	0.02	513.46	996.18	141.36	185.18	0.19
Plumtree	4845	200-YR	372.70	372.57	0.13	0.02	0.03	616.58	1178.22	176.20	189.82	0.26
Plumtree	4745	1-YR	362.34	362.23	0.11	0.13	0.01		208.00		28.76	0.24
Plumtree	4745	2-YR	363.70	363.60	0.10	0.07	0.01	8.71	305.43	0.86	99.42	0.19
Plumtree	4745	10-YR	370.44	370.43	0.01	0.00	0.00	156.88	299.05	260.07	296.51	0.02
Plumtree	4745	50-YR	372.16	372.15	0.01	0.00	0.00	303.92	498.64	527.44	328.08	0.03
Plumtree	4745	100-YR	372.45	372.43	0.02	0.01	0.00	381.81	610.88	658.31	334.89	0.04
Plumtree	4745	200-YR	372.65	372.63	0.02	0.01	0.00	459.73	722.58	788.69	340.00	0.06
Plumtree	4636	1-YR	362.21	362.12	0.09	0.08	0.00	0.01	207.99		25.92	0.17
Plumtree	4636	2-YR	363.62	363.55	0.07	0.05	0.00	3.54	278.26	33.20	177.87	0.14
Plumtree	4636	10-YR	370.44	370.43	0.00	0.00	0.00	79.55	222.93	413.52	468.39	0.01
Plumtree	4636	50-YR	372.16	372.15	0.01	0.00	0.00	188.12	351.97	789.91	522.62	0.02
Plumtree	4636	100-YR	372.44	372.43	0.01	0.00	0.00	239.86	427.07	984.07	530.81	0.03
Plumtree	4636	200-YR	372.64	372.63	0.01	0.00	0.00	291.58	501.78	1177.64	536.73	0.04
Plumtree	4550	1-YR	362.13	362.05	0.08				207.99	0.01	31.74	0.17
Plumtree	4550	2-YR	363.57	363.49	0.08			0.29	307.11	7.60	187.73	0.15
Plumtree	4550	10-YR	370.43	370.40	0.03			105.72	541.78	68.49	446.15	0.05
Plumtree	4550	50-YR	372.16	372.15	0.01			164.05	379.95	786.00	505.54	0.02
Plumtree	4550	100-YR	372.44	372.43	0.01			209.06	462.11	979.83	532.91	0.03
Plumtree	4550	200-YR	372.64	372.63	0.01			254.22	543.82	1172.96	582.39	0.03
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	359.47	359.43	0.04	0.01	0.00		208.00		27.67	0.06
Plumtree	4344	2-YR	360.21	360.15	0.06	0.02	0.00		315.00		28.78	0.11
Plumtree	4344	10-YR	361.88	361.69	0.19	0.05	0.02	0.11	715.45	0.44	53.98	0.32
Plumtree	4344	50-YR	363.42	363.02	0.40	0.07	0.07	21.11	1263.08	45.80	115.11	0.65
Plumtree	4344	100-YR	364.05	363.56	0.48	0.08	0.09	44.75	1509.01	97.25	129.42	0.80
Plumtree	4344	200-YR	364.60	364.05	0.55	0.09	0.11	75.15	1733.83	162.02	139.68	0.93
Plumtree	4289	1-YR	359.45	359.42	0.03	0.07	0.02		208.00		33.55	0.06
Plumtree	4289	2-YR	360.18	360.13	0.05	0.09	0.02		315.00		36.18	0.10
Plumtree	4289	10-YR	361.81	361.66	0.15	0.17	0.04	0.57	709.00	6.43	109.93	0.26
Plumtree	4289	50-YR	363.27	363.01	0.26	0.18	0.01	55.55	1206.94	67.51	162.18	0.46
Plumtree	4289	100-YR	363.87	363.58	0.30	0.18	0.00	105.90	1422.69	122.41	174.45	0.53
Plumtree	4289	200-YR	364.40	364.08	0.33	0.17	0.02	167.94	1620.75	182.32	182.45	0.60
Plumtree	4185	1-YR	359.37	359.13	0.24	0.55	0.01		194.00		21.83	0.54
Plumtree	4185	2-YR	360.07	359.78	0.30	0.56	0.01		281.00		23.96	0.64
Plumtree	4185	10-YR	361.60	361.07	0.52	0.53	0.09	79.93	603.90	0.18	126.19	1.16
Plumtree	4185	50-YR	363.08	362.76	0.33	0.33	0.04	440.27	820.12	84.61	233.16	0.88
Plumtree	4185	100-YR	363.69	363.40	0.29	0.27	0.04	619.71	910.82	163.48	261.16	0.83
Plumtree	4185	200-YR	364.21	363.95	0.26	0.24	0.04	781.69	982.56	245.75	283.80	0.79
Plumtree	4033	1-YR	358.80	358.59	0.21	0.48	0.02		194.00		20.78	0.47
Plumtree	4033	2-YR	359.50	359.24	0.26	0.47	0.02		274.94	6.06	94.09	0.55
Plumtree	4033	10-YR	360.98	360.76	0.22	0.26	0.00	11.53	459.81	212.66	169.76	0.59
Plumtree	4033	50-YR	362.72	362.52	0.19	0.14	0.02	115.89	676.37	552.73	288.22	0.58
Plumtree	4033	100-YR	363.38	363.22	0.16	0.12	0.01	175.93	725.96	792.11	305.25	0.52
Plumtree	4033	200-YR	363.94	363.80	0.14	0.11	0.01	230.89	773.13	1005.98	319.20	0.49

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	3930	1-YR	358.31	357.91	0.39	0.57	0.04	0.14	193.86		19.95	0.91
Plumtree	3930	2-YR	359.00	358.52	0.49	0.53	0.06	3.20	277.80		26.31	1.06
Plumtree	3930	10-YR	360.72	360.45	0.27	0.24	0.02	46.08	435.89	202.02	194.26	0.73
Plumtree	3930	50-YR	362.55	362.42	0.13	0.13	0.00	162.22	522.30	660.47	238.08	0.45
Plumtree	3930	100-YR	363.25	363.12	0.12	0.12	0.00	232.29	586.54	875.16	252.06	0.45
Plumtree	3930	200-YR	363.82	363.70	0.12	0.11	0.00	309.12	639.68	1061.20	262.37	0.45
Plumtree	3816	1-YR	357.69	357.44	0.25	0.42	0.01		190.57	3.43	31.80	0.55
Plumtree	3816	2-YR	358.42	358.14	0.28	0.39	0.00	1.11	261.22	18.66	60.30	0.61
Plumtree	3816	10-YR	360.45	360.26	0.19	0.22	0.00	51.44	422.54	210.02	152.31	0.51
Plumtree	3816	50-YR	362.42	362.28	0.14	0.15	0.01	179.26	566.29	599.45	209.68	0.44
Plumtree	3816	100-YR	363.13	362.99	0.14	0.14	0.01	254.79	641.63	797.58	224.47	0.46
Plumtree	3816	200-YR	363.70	363.56	0.14	0.14	0.01	324.29	708.60	977.11	230.84	0.48
Plumtree	3688	1-YR	357.27	357.03	0.23	0.46	0.00	0.92	192.99	0.09	26.75	0.49
Plumtree	3688	2-YR	358.02	357.74	0.28	0.40	0.01	7.16	267.48	6.36	53.28	0.59
Plumtree	3688	10-YR	360.22	359.99	0.23	0.24	0.00	81.79	452.75	149.46	127.18	0.58
Plumtree	3688	50-YR	362.26	362.07	0.19	0.18	0.00	244.41	632.53	468.06	180.49	0.57
Plumtree	3688	100-YR	362.98	362.78	0.19	0.18	0.01	346.01	711.44	636.55	189.39	0.59
Plumtree	3688	200-YR	363.56	363.36	0.19	0.18	0.01	438.70	780.48	790.82	196.70	0.62
Plumtree	3550	1-YR	356.81	356.59	0.22	0.41	0.00	0.27	193.73		26.24	0.49
Plumtree	3550	2-YR	357.61	357.37	0.24	0.37	0.01	4.89	275.78	0.34	40.21	0.51
Plumtree	3550	10-YR	359.98	359.73	0.25	0.26	0.02	75.35	548.23	60.43	108.18	0.52
Plumtree	3550	50-YR	362.08	361.84	0.23	0.22	0.03	289.11	828.72	227.17	154.01	0.55
Plumtree	3550	100-YR	362.79	362.53	0.26	0.24	0.04	395.93	975.36	322.71	166.11	0.62
Plumtree	3550	200-YR	363.37	363.09	0.28	0.25	0.04	493.70	1102.00	414.30	179.96	0.68
Plumtree	3428	1-YR	356.39	356.15	0.24	0.41	0.00	1.47	192.53		21.82	0.51
Plumtree	3428	2-YR	357.23	356.93	0.30	0.45	0.00	9.74	271.26		28.64	0.61
Plumtree	3428	10-YR	359.70	359.29	0.41	0.43	0.01	102.69	558.78	22.53	64.99	0.84
Plumtree	3428	50-YR	361.82	361.29	0.53	0.45	0.03	297.97	911.75	135.28	100.54	1.15
Plumtree	3428	100-YR	362.51	361.87	0.64	0.54	0.04	392.89	1092.21	208.90	111.06	1.41
Plumtree	3428	200-YR	363.07	362.34	0.73	0.61	0.06	478.87	1244.73	286.40	119.80	1.61
Plumtree	3296	1-YR	355.98	355.75	0.23	0.35	0.03		194.00		16.51	0.49
Plumtree	3296	2-YR	356.78	356.47	0.31	0.44	0.04		281.00		19.34	0.64
Plumtree	3296	10-YR	359.26	358.76	0.50	0.21	0.11	0.73	682.76	0.51	36.15	0.94
Plumtree	3296	50-YR	361.35	360.55	0.79	0.20	0.19	18.08	1258.07	68.85	103.06	1.42
Plumtree	3296	100-YR	361.93	360.89	1.04	0.25	0.24	28.36	1541.91	123.73	116.02	1.88
Plumtree	3296	200-YR	362.40	361.10	1.30	0.30	0.31	37.78	1796.75	175.47	123.99	2.37
Plumtree	3179	1-YR	355.60	355.46	0.14	0.33	0.00		194.00		28.81	0.34
Plumtree	3179	2-YR	356.29	356.14	0.16	0.27	0.01		281.00		48.61	0.38
Plumtree	3179	10-YR	358.94	358.81	0.13	0.06	0.03	13.66	653.97	16.37	114.45	0.25
Plumtree	3179	50-YR	360.96	360.78	0.18	0.06	0.04	56.14	1139.42	149.43	158.33	0.33
Plumtree	3179	100-YR	361.44	361.21	0.23	0.07	0.05	79.09	1403.01	211.90	163.93	0.43
Plumtree	3179	200-YR	361.80	361.52	0.28	0.08	0.06	101.07	1639.30	269.63	167.89	0.53
Plumtree	3077	1-YR	355.27	355.09	0.18	0.35	0.00	0.41	193.59		65.72	0.42
Plumtree	3077	2-YR	356.01	355.88	0.13	0.24	0.01	31.07	245.48	4.46	116.13	0.31
Plumtree	3077	10-YR	358.86	358.82	0.04	0.06	0.01	222.16	352.41	109.43	187.15	0.12
Plumtree	3077	50-YR	360.87	360.81	0.06	0.06	0.02	476.39	592.86	275.75	227.84	0.16
Plumtree	3077	100-YR	361.32	361.25	0.07	0.08	0.03	610.26	726.40	357.34	239.98	0.22
Plumtree	3077	200-YR	361.66	361.57	0.09	0.09	0.03	734.60	844.07	431.32	248.18	0.27
Plumtree	2978	1-YR	354.91	354.72	0.20	0.21	0.00		194.00		22.85	0.45
Plumtree	2978	2-YR	355.76	355.55	0.21	0.21	0.00		280.84	0.16	31.11	0.46
Plumtree	2978	10-YR	358.78	358.60	0.18	0.07	0.00	24.41	597.38	62.21	79.43	0.35
Plumtree	2978	50-YR	360.78	360.52	0.26	0.06	0.02	136.80	1021.31	186.89	150.46	0.51
Plumtree	2978	100-YR	361.21	360.87	0.35	0.08	0.04	199.77	1249.46	244.77	162.68	0.69
Plumtree	2978	200-YR	361.53	361.09	0.44	0.10	0.05	262.46	1451.20	296.34	163.60	0.88
Plumtree	2917	1-YR	354.70	354.47	0.23				194.00		19.74	0.50
Plumtree	2917	2-YR	355.55	355.29	0.25				281.00		28.07	0.56
Plumtree	2917	10-YR	358.71	358.53	0.19			30.53	622.92	30.55	109.21	0.35
Plumtree	2917	50-YR	360.69	360.51	0.18			293.36	944.57	107.07	264.65	0.39
Plumtree	2917	100-YR	361.10	360.87	0.22			425.77	1127.54	140.69	283.75	0.49
Plumtree	2917	200-YR	361.38	361.11	0.27			547.23	1291.53	171.23	296.49	0.60
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	354.48	354.23	0.25	0.25	0.03	0.27	193.73		35.30	0.65
Plumtree	2827	2-YR	355.07	354.81	0.27	0.24	0.01	4.17	276.32	0.51	54.82	0.63
Plumtree	2827	10-YR	356.53	355.94	0.59	0.31	0.14	24.59	645.84	13.57	118.66	1.25
Plumtree	2827	50-YR	357.65	357.12	0.53	0.26	0.12	333.05	954.23	57.73	163.88	1.31
Plumtree	2827	100-YR	358.17	357.63	0.55	0.25	0.14	482.74	1114.75	96.51	178.17	1.39
Plumtree	2827	200-YR	358.58	358.00	0.57	0.25	0.15	620.19	1256.71	133.10	188.81	1.48

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	2759	1-YR	354.20	354.01	0.19	0.44	0.02	3.00	190.89	0.11	38.10	0.40
Plumtree	2759	2-YR	354.82	354.57	0.25	0.46	0.03	16.78	259.19	5.03	92.38	0.53
Plumtree	2759	10-YR	356.08	355.77	0.31	0.59	0.04	153.20	441.04	89.76	177.73	0.86
Plumtree	2759	50-YR	357.27	356.97	0.29	0.59	0.02	426.46	605.03	313.51	229.28	1.01
Plumtree	2759	100-YR	357.79	357.51	0.28	0.60	0.01	583.49	665.68	444.82	248.29	1.02
Plumtree	2759	200-YR	358.18	357.91	0.28	0.57	0.01	723.82	723.34	562.84	262.19	1.06
Plumtree	2589	1-YR	353.74	353.61	0.13	0.61	0.07		112.49	81.51	67.53	0.44
Plumtree	2589	2-YR	354.33	354.20	0.13	0.55	0.07	0.43	144.05	136.52	103.17	0.48
Plumtree	2589	10-YR	355.46	355.27	0.19	0.50	0.03	32.32	252.07	399.61	151.61	0.81
Plumtree	2589	50-YR	356.65	356.42	0.23	0.43	0.01	152.18	375.65	817.17	226.96	1.07
Plumtree	2589	100-YR	357.19	356.93	0.26	0.42	0.00	245.03	451.43	997.54	244.13	1.28
Plumtree	2589	200-YR	357.60	357.36	0.24	0.39	0.00	318.25	481.98	1209.76	257.90	1.25
Plumtree	2485	1-YR	353.06	352.27	0.80	1.09	0.16	6.08	187.92		22.59	1.94
Plumtree	2485	2-YR	353.71	352.89	0.82	0.97	0.15	26.53	252.13	2.34	35.32	1.98
Plumtree	2485	10-YR	354.93	354.47	0.47	0.70	0.03	185.52	368.65	129.83	147.21	1.54
Plumtree	2485	50-YR	356.21	355.88	0.33	0.58	0.01	444.80	476.28	423.92	193.08	1.35
Plumtree	2485	100-YR	356.76	356.46	0.30	0.55	0.02	586.42	519.79	587.79	202.38	1.29
Plumtree	2485	200-YR	357.21	356.93	0.28	0.53	0.02	714.67	558.82	736.51	208.28	1.27
Plumtree	2331	1-YR	351.81	351.56	0.25	0.49	0.02		193.80	0.20	21.42	0.56
Plumtree	2331	2-YR	352.59	352.29	0.31	0.52	0.02	0.50	277.20	3.30	50.05	0.64
Plumtree	2331	10-YR	354.20	353.83	0.37	0.56	0.02	124.12	516.77	43.11	124.01	0.87
Plumtree	2331	50-YR	355.62	355.20	0.42	0.59	0.02	408.75	787.95	148.30	147.36	1.11
Plumtree	2331	100-YR	356.19	355.74	0.45	0.61	0.02	561.51	918.52	213.98	157.75	1.23
Plumtree	2331	200-YR	356.66	356.19	0.47	0.61	0.02	706.94	1026.65	276.41	166.62	1.32
Plumtree	2153	1-YR	351.30	351.13	0.18	0.38	0.00	4.88	189.12		21.90	0.37
Plumtree	2153	2-YR	352.05	351.81	0.24	0.46	0.01	17.94	263.06		69.91	0.50
Plumtree	2153	10-YR	353.62	353.31	0.31	0.53	0.01	219.39	457.97	6.64	119.33	0.79
Plumtree	2153	50-YR	355.01	354.66	0.35	0.56	0.00	614.23	672.58	58.19	142.06	1.07
Plumtree	2153	100-YR	355.56	355.18	0.38	0.56	0.00	829.52	770.62	93.86	148.26	1.20
Plumtree	2153	200-YR	356.03	355.63	0.40	0.55	0.01	1028.68	850.14	131.18	153.92	1.29
Plumtree	1994	1-YR	350.92	350.69	0.22	0.32	0.00	1.34	192.66		27.64	0.47
Plumtree	1994	2-YR	351.58	351.26	0.32	0.35	0.01	9.56	271.38	0.05	58.37	0.66
Plumtree	1994	10-YR	353.09	352.72	0.37	0.36	0.02	172.38	471.86	39.76	128.85	0.94
Plumtree	1994	50-YR	354.45	354.06	0.40	0.37	0.02	474.82	690.21	179.97	170.44	1.19
Plumtree	1994	100-YR	355.00	354.62	0.38	0.36	0.01	646.94	767.84	279.22	175.59	1.22
Plumtree	1994	200-YR	355.47	355.09	0.38	0.35	0.01	807.35	840.33	362.32	184.40	1.26
Plumtree	1888	1-YR	350.59	350.34	0.25	0.06	0.01	8.37	179.79	5.84	49.36	0.56
Plumtree	1888	2-YR	351.21	350.93	0.28	0.06	0.01	27.87	234.92	18.21	70.38	0.65
Plumtree	1888	10-YR	352.71	352.40	0.31	0.06	0.01	166.81	397.62	119.58	132.36	0.88
Plumtree	1888	50-YR	354.07	353.72	0.34	0.06	0.01	413.61	586.62	344.77	158.88	1.15
Plumtree	1888	100-YR	354.64	354.29	0.35	0.06	0.02	550.62	668.36	475.01	168.43	1.23
Plumtree	1888	200-YR	355.12	354.75	0.36	0.07	0.03	678.40	736.28	595.32	175.88	1.29
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	350.35	350.26	0.10	0.41	0.04	50.21	143.79		72.28	0.27
Plumtree	1830	2-YR	350.95	350.85	0.10	0.45	0.07	94.24	186.75	0.00	90.09	0.30
Plumtree	1830	10-YR	352.45	352.32	0.13	0.51	0.14	300.02	332.79	51.19	152.17	0.41
Plumtree	1830	50-YR	353.78	353.60	0.18	0.55	0.12	605.01	536.34	203.65	156.79	0.61
Plumtree	1830	100-YR	354.33	354.12	0.21	0.56	0.10	762.30	638.15	293.54	159.45	0.71
Plumtree	1830	200-YR	354.78	354.54	0.24	0.58	0.09	897.99	731.62	380.38	163.76	0.81
Plumtree	1641	1-YR	349.90	349.67	0.23	0.28	0.05	19.96	174.03	0.01	31.27	0.53
Plumtree	1641	2-YR	350.43	350.09	0.34	0.35	0.07	35.56	243.90	1.54	65.10	0.79
Plumtree	1641	10-YR	351.81	351.23	0.58	0.58	0.11	126.96	463.15	93.89	113.38	1.53
Plumtree	1641	50-YR	353.11	352.55	0.56	0.64	0.09	299.47	663.07	382.46	147.37	1.79
Plumtree	1641	100-YR	353.67	353.13	0.54	0.61	0.08	395.02	739.97	559.02	157.00	1.81
Plumtree	1641	200-YR	354.12	353.58	0.53	0.59	0.07	484.85	807.89	717.26	164.28	1.86
Plumtree	1463	1-YR	349.58	349.50	0.07	0.36	0.01	3.97	186.95	3.09	98.22	0.16
Plumtree	1463	2-YR	350.00	349.90	0.10	0.42	0.01	18.27	253.29	9.44	118.10	0.22
Plumtree	1463	10-YR	351.12	350.92	0.20	0.50	0.00	121.28	504.27	58.45	146.24	0.49
Plumtree	1463	50-YR	352.39	352.11	0.28	0.45	0.04	352.92	816.16	175.92	181.37	0.75
Plumtree	1463	100-YR	352.99	352.70	0.29	0.40	0.04	500.06	941.01	252.93	194.91	0.79
Plumtree	1463	200-YR	353.45	353.16	0.30	0.37	0.05	632.05	1046.47	331.48	202.46	0.84
Plumtree	1291	1-YR	349.21	349.04	0.17	0.64	0.00	159.71	249.29		220.19	0.56
Plumtree	1291	2-YR	349.58	349.39	0.19	0.59	0.01	275.80	312.14	0.06	239.74	0.68
Plumtree	1291	10-YR	350.62	350.43	0.19	0.48	0.02	795.75	465.97	5.28	311.15	0.82
Plumtree	1291	50-YR	351.90	351.74	0.16	0.38	0.01	1681.33	622.17	30.50	393.69	0.80
Plumtree	1291	100-YR	352.55	352.40	0.15	0.33	0.00	2238.17	680.77	50.06	413.26	0.75

HEC-RAS Plan: G River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	1291	200-YR	353.04	352.90	0.14	0.31	0.00	2707.61	726.37	68.03	419.10	0.71
Plumtree	1124	1-YR	348.57	348.36	0.21	0.46	0.03	145.50	263.50		243.53	0.68
Plumtree	1124	2-YR	348.98	348.83	0.15	0.37	0.01	301.10	286.90		261.69	0.58
Plumtree	1124	10-YR	350.11	349.99	0.12	0.30	0.00	870.19	396.02	0.79	280.57	0.56
Plumtree	1124	50-YR	351.51	351.39	0.13	0.25	0.00	1761.50	556.63	15.87	310.81	0.59
Plumtree	1124	100-YR	352.21	352.07	0.13	0.24	0.00	2286.31	646.67	36.01	325.07	0.61
Plumtree	1124	200-YR	352.73	352.59	0.14	0.23	0.01	2722.33	720.16	59.51	333.39	0.63
Plumtree	994	1-YR	348.09	347.96	0.13	0.25	0.00	144.39	264.61		183.33	0.42
Plumtree	994	2-YR	348.60	348.49	0.11	0.19	0.00	269.07	318.93		206.79	0.38
Plumtree	994	10-YR	349.81	349.68	0.13	0.17	0.00	718.92	546.73	1.35	233.12	0.49
Plumtree	994	50-YR	351.26	351.09	0.16	0.16	0.00	1449.47	864.00	20.54	271.07	0.59
Plumtree	994	100-YR	351.96	351.78	0.18	0.15	0.00	1885.57	1039.47	43.95	287.56	0.64
Plumtree	994	200-YR	352.49	352.30	0.19	0.15	0.01	2253.14	1180.18	68.68	298.96	0.68
Plumtree	911	1-YR	347.83	347.66	0.17	0.54	0.01	154.59	254.41		193.68	0.55
Plumtree	911	2-YR	348.40	348.29	0.12	0.47	0.03	309.22	278.78		214.09	0.44
Plumtree	911	10-YR	349.64	349.51	0.13	0.35	0.01	833.86	429.96	3.18	237.64	0.54
Plumtree	911	50-YR	351.09	350.94	0.15	0.30	0.01	1672.68	636.84	24.48	273.10	0.65
Plumtree	911	100-YR	351.80	351.64	0.16	0.28	0.01	2176.68	747.34	44.98	288.14	0.70
Plumtree	911	200-YR	352.33	352.16	0.18	0.27	0.01	2600.38	835.85	65.76	298.74	0.74
Plumtree	762	1-YR	347.27	347.00	0.27	0.19	0.05	97.62	311.38	0.00	68.67	0.72
Plumtree	762	2-YR	347.91	347.54	0.37	0.21	0.07	140.32	444.75	2.93	162.35	0.98
Plumtree	762	10-YR	349.28	349.03	0.25	0.17	0.03	543.81	624.88	98.31	239.77	0.81
Plumtree	762	50-YR	350.79	350.56	0.22	0.15	0.02	1152.57	868.48	312.95	281.00	0.82
Plumtree	762	100-YR	351.51	351.28	0.23	0.14	0.02	1515.75	1003.35	449.91	299.77	0.85
Plumtree	762	200-YR	352.05	351.82	0.23	0.14	0.02	1817.22	1109.81	574.98	311.17	0.87
Plumtree	658	1-YR	347.04	346.93	0.12	0.14	0.00	8.49	392.57	7.95	175.08	0.23
Plumtree	658	2-YR	347.63	347.49	0.14	0.13	0.02	38.55	508.73	40.72	227.57	0.29
Plumtree	658	10-YR	349.08	348.93	0.15	0.12	0.02	241.75	783.43	241.82	299.43	0.37
Plumtree	658	50-YR	350.62	350.47	0.15	0.12	0.02	623.10	1095.59	615.31	328.33	0.43
Plumtree	658	100-YR	351.35	351.19	0.16	0.12	0.02	858.83	1269.97	840.21	344.63	0.47
Plumtree	658	200-YR	351.89	351.73	0.16	0.12	0.02	1062.64	1411.48	1027.89	357.61	0.51
Plumtree	526	1-YR	346.90	346.79	0.11	0.25	0.01	20.96	324.47	63.57	264.50	0.26
Plumtree	526	2-YR	347.48	347.40	0.09	0.21	0.01	58.54	369.18	160.28	279.23	0.25
Plumtree	526	10-YR	348.93	348.85	0.08	0.17	0.01	207.44	536.35	523.21	309.96	0.27
Plumtree	526	50-YR	350.48	350.39	0.09	0.16	0.01	465.75	770.06	1098.19	339.90	0.33
Plumtree	526	100-YR	351.21	351.11	0.10	0.16	0.01	632.77	899.13	1437.10	352.16	0.37
Plumtree	526	200-YR	351.75	351.65	0.11	0.17	0.01	776.37	1004.40	1721.23	361.35	0.40
Plumtree	380	1-YR	346.63	346.39	0.24	1.36	0.09	26.83	380.66	1.51	139.39	0.52
Plumtree	380	2-YR	347.27	347.06	0.20	1.08	0.11	95.80	457.84	34.37	192.43	0.49
Plumtree	380	10-YR	348.76	348.58	0.18	0.78	0.10	362.04	689.60	215.36	218.51	0.52
Plumtree	380	50-YR	350.31	350.10	0.21	0.76	0.12	776.98	1012.46	544.56	236.04	0.64
Plumtree	380	100-YR	351.04	350.81	0.22	0.77	0.13	1020.94	1191.46	756.59	241.46	0.70
Plumtree	380	200-YR	351.58	351.33	0.24	0.78	0.14	1225.76	1338.53	937.71	245.32	0.76
Plumtree	146	1-YR	345.17	343.99	1.19	0.58	0.29		409.00		19.99	2.68
Plumtree	146	2-YR	346.08	344.83	1.26	0.53	0.29	5.67	581.05	1.28	44.91	2.62
Plumtree	146	10-YR	347.87	346.68	1.19	0.45	0.20	207.31	1005.39	54.29	109.70	2.61
Plumtree	146	50-YR	349.43	348.03	1.40	0.45	0.20	650.73	1514.39	168.88	141.40	3.36
Plumtree	146	100-YR	350.14	348.61	1.53	0.46	0.21	947.62	1783.87	237.51	153.27	3.81
Plumtree	146	200-YR	350.65	349.02	1.63	0.46	0.22	1211.76	1995.48	294.76	160.49	4.15
Plumtree	63	1-YR	343.79	343.56	0.23				409.00		43.62	0.51
Plumtree	63	2-YR	344.50	344.20	0.29			0.06	587.92	0.03	50.35	0.61
Plumtree	63	10-YR	346.34	345.82	0.52			20.39	1237.13	9.48	81.42	0.95
Plumtree	63	50-YR	348.27	347.52	0.75			135.06	2114.51	84.43	126.63	1.31
Plumtree	63	100-YR	349.14	348.30	0.84			236.84	2576.06	156.10	139.18	1.48
Plumtree	63	200-YR	349.79	348.88	0.91			334.16	2942.57	225.27	146.84	1.60

Appendix H-9

Plumtree Branch: Option H Hydraulic Modeling

1

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 ******************80-80 LIST OF INPUT DATA FOR TR-20
 HYDROLOGY******************

 JOB TR-20                                                    NOPLOTS
 TITLE     Valley Mede Ultimate LU, Fair Cond, Subdivided
 TITLE     All Plumtree storage, pond, bridges, diversion Plan 13 Flow 7
  2 XSECTN   002                  1.0      382.34
  8                            380.31        0.00        0.00
  8                            381.01       17.58        8.61
  8                            381.71       57.72       18.68
  8                            382.41       87.42       30.14
  8                            383.11      104.50       69.28
  8                            383.81      263.75      127.12
  8                            384.51      485.21      191.79
  8                            385.21      756.68      264.06
  8                            385.91     1097.04      343.49
  8                            386.61     1504.59      429.14
  8                            387.31     1935.42      521.71
  8                            388.01     2404.29      624.39
  8                            388.71     3010.65      736.45
  8                            389.41     3695.34      856.11
  8                            390.11     4464.50      983.39
  9 ENDTBL
  2 XSECTN   007                  1.0      368.32
  8                            365.53        0.00        0.00
  8                            366.13        2.41        1.85
  8                            366.73       13.26        5.96
  8                            367.33       32.81       11.12
  8                            367.93       56.86       17.33
  8                            368.53       58.83       27.09
  8                            369.13       87.92       53.94
  8                            369.73      182.33       92.49
  8                            370.33      312.70      139.48
  8                            370.93      486.35      195.36
  8                            371.53      699.83      260.83
  8                            372.13      968.75      336.90
  8                            372.73     1275.43      425.26
  8                            373.33     1614.79      529.26
  8                            373.93     2124.43      651.29
  8                            374.53     2756.14      782.07
  8                            375.13     3501.54      920.13
  8                            375.73     4298.02     1065.04
  9 ENDTBL
  2 XSECTN   010                  1.0      356.35
  8                            348.10        0.00        0.00
  8                            348.70        5.42        4.43
  8                            349.30       24.01       11.59
  8                            349.90       53.17       19.81
  8                            350.50       92.55       29.09
  8                            351.10      142.34       39.42
  8                            351.70      165.15       51.53
  8                            352.90      175.05      116.35
  8                            353.50      306.92      180.56
1

 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************
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```
  8                          354.10      516.89      254.74
  8                          354.70      768.52      334.49
  8                          355.30     1065.05      420.62
  8                          355.90     1408.22      513.66
  8                          356.50     1807.31      613.67
  8                          357.10     2263.93      719.75
  8                          357.70     2774.44      831.81
  8                          358.30     3358.23      949.51
  9 ENDTBL
  2 XSECTN   014                1.0      379.93
  8                          376.15        0.00        0.00
  8                          377.05        8.36        4.84
  8                          377.95       50.12       15.58
  8                          378.85      120.19       28.42
  8                          380.65      159.08       88.20
  8                          381.55      355.19      161.67
  8                          382.45      675.00      251.36
  8                          383.35     1104.38      349.36
  8                          384.25     1615.02      456.11
  8                          385.15     2234.68      571.32
  8                          386.05     2973.63      693.77
  8                          386.95     3792.19      822.71
  8                          387.85     4704.26      958.82
  8                          388.75     5747.20     1101.81
  8                          389.65     6882.68     1250.71
  8                          390.55     8093.30     1406.32
  8                          391.45     9366.77     1569.98
  8                          392.35    10762.79     1742.42
  9 ENDTBL
  2 XSECTN   019                1.0      357.27
  8                          353.42        0.00        0.00
  8                          354.17        5.09        3.18
  8                          354.92       23.50        9.02
  8                          355.67       54.37       16.42
  8                          357.17       67.66       39.26
  8                          357.92      141.61       78.64
  8                          358.67      290.86      152.96
  8                          359.42      578.12      249.05
  8                          360.17      989.10      363.75
  8                          360.92     1520.99      494.51
  8                          361.67     2178.56      640.80
  8                          362.42     2981.64      802.19
  8                          363.17     3939.75      976.51
  8                          363.92     5049.66     1162.33
  8                          364.67     6325.86     1358.62
  8                          365.42     7734.95     1564.62
  9 ENDTBL
  2 XSECTN   023                1.0      344.26
  8                          340.73        0.00        0.00
  8                          341.48        9.64        6.59
1
```

**********80-80 LIST OF INPUT DATA
(CONTINUED)**********

```
  8                          342.23       39.11       16.56
  8                          342.98       85.34       28.29
  8                          344.48      146.45       57.99
  8                          345.23      162.66       92.62
  8                          345.98      273.72      148.97
  8                          346.73      453.62      224.13
  8                          347.48      714.72      314.46
```

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  8                            348.23     1049.51      417.50
  8                            348.98     1470.76      532.23
  8                            349.73     1960.34      657.45
  8                            350.48     2559.41      793.58
  8                            351.23     3222.20      938.75
  8                            351.98     3947.27     1094.98
  9 ENDTBL
  2 XSECTN   026                  1.0      370.00
  8                            369.00        0.00        0.00
  8                            369.10        3.04        5.05
  8                            369.20        9.67       10.15
  8                            369.30       19.04       15.32
  8                            369.40       30.80       20.54
  8                            369.50       44.75       25.83
  8                            369.60       60.76       31.17
  8                            369.70       78.70       36.58
  8                            369.80       98.50       42.05
  8                            369.90      120.09       47.58
  8                            370.00      143.42       53.16
  8                            370.10      168.45       58.81
  8                            370.20      195.13       64.52
  8                            370.30      223.42       70.29
  8                            370.40      253.32       76.12
  8                            370.50      284.78       82.01
  8                            370.60      317.79       87.96
  8                            370.70      352.32       93.97
  8                            370.80      388.37      100.04
  8                            370.90      425.92      106.17
  9 ENDTBL
  3 STRUCT      01
  8                      387.74      0.00        0.000
  8                      389.41      62.00       3.834
  8                      390.20      124.00      5.852
  8                      390.83      186.00      7.566
  8                      391.39      248.00      9.089
  8                      391.82      300.00      10.259
  8                      392.39      372.00      11.898
  8                      392.86      434.00      13.284
  8                      393.33      496.00      14.669
  8                      393.82      558.00      16.114
  8                      394.31      620.00      17.612
  8                      394.81      752.00      19.173
  8                      395.05      884.00      19.928
1


 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

  8                      395.14      950.00      20.220
  8                      395.33      1100.00     20.835
  8                      395.36      1125.00     20.932
  8                      395.71      1500.00     22.066
  8                      396.00      1890.00     22.700
  9 ENDTBL
  3 STRUCT      02
  8                      369.00      0.00        0.000
  8                      371.73      87.00       3.83
  8                      372.48      134.0       5.06
  8                      374.52      293.0       8.74
  8                      376.95      529.0       13.88
  8                      378.15      662.0       16.67
  8                      379.32      801.0       19.74
```

```
  9 ENDTBL
  3 STRUCT      03
  8                     368.00      0.000       0.000
  8                     370.21      69.00       6.86
  8                     370.84      110.0       8.96
  8                     372.70      260.0       15.34
  8                     374.03      513.0       20.12
  8                     374.55      649.0       22.13
  8                     375.08      788.0       24.18
  9 ENDTBL
  3 STRUCT      04
  8                     367.00      0.000       0.000
  8                     369.86      64.00       3.74
  8                     370.48      106.0       4.67
  8                     372.16      256.0       7.28
  8                     373.61      510.0       9.78
  8                     374.26      645.0       10.95
  8                     374.87      784.0       12.12
  9 ENDTBL
  3 STRUCT      05
  8                     400.00      0.000       0.000
  8                     401.30      9.          2.447
  8                     401.96      18.         3.689
  8                     402.52      27.         4.847
  8                     403.05      36.         5.949
  8                     403.63      45.         7.156
  8                     403.99      50.         7.905
  8                     405.13      63.         10.508
  8                     406.10      72.         12.746
  8                     408.44      90.         18.677
  9 ENDTBL
  5 RAINFL 5             .1
  8          0.0000     0.0013      0.0023      0.0034      0.0044
  8          0.0055     0.0065      0.0076      0.0087      0.0098
  8          0.0109     0.0121      0.0132      0.0143      0.0155
  8          0.0167     0.0178      0.0190      0.0202      0.0214
1
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 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

  8          0.0226     0.0238      0.0251      0.0263      0.0276
  8          0.0288     0.0301      0.0314      0.0327      0.0340
  8          0.0353     0.0366      0.0379      0.0393      0.0406
  8          0.0420     0.0434      0.0447      0.0461      0.0475
  8          0.0489     0.0504      0.0518      0.0532      0.0547
  8          0.0562     0.0576      0.0591      0.0606      0.0621
  8          0.0636     0.0651      0.0667      0.0682      0.0697
  8          0.0713     0.0729      0.0745      0.0760      0.0776
  8          0.0793     0.0809      0.0826      0.0843      0.0861
  8          0.0879     0.0898      0.0916      0.0936      0.0955
  8          0.0975     0.0996      0.1017      0.1038      0.1060
  8          0.1082     0.1104      0.1127      0.1150      0.1174
  8          0.1198     0.1223      0.1247      0.1273      0.1298
  8          0.1324     0.1351      0.1378      0.1405      0.1432
  8          0.1461     0.1490      0.1521      0.1554      0.1588
  8          0.1623     0.1660      0.1699      0.1739      0.1780
  8          0.1823     0.1868      0.1914      0.1961      0.2010
  8          0.2061     0.2117      0.2179      0.2247      0.2321
  8          0.2400     0.2490      0.2591      0.2702      0.2825
  8          0.2955     0.3157      0.3370      0.3662      0.4067
  8          0.4766     0.5933      0.6338      0.6630      0.6843
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  8           0.7045      0.7176      0.7298      0.7409      0.7510
  8           0.7600      0.7679      0.7753      0.7821      0.7883
  8           0.7939      0.7990      0.8039      0.8086      0.8132
  8           0.8177      0.8220      0.8261      0.8301      0.8340
  8           0.8377      0.8412      0.8446      0.8479      0.8510
  8           0.8540      0.8568      0.8595      0.8622      0.8649
  8           0.8676      0.8702      0.8727      0.8753      0.8778
  8           0.8802      0.8826      0.8850      0.8873      0.8896
  8           0.8918      0.8940      0.8962      0.8983      0.9004
  8           0.9025      0.9045      0.9064      0.9084      0.9103
  8           0.9121      0.9139      0.9157      0.9174      0.9191
  8           0.9208      0.9224      0.9240      0.9256      0.9271
  8           0.9287      0.9303      0.9318      0.9334      0.9349
  8           0.9364      0.9379      0.9394      0.9409      0.9424
  8           0.9439      0.9453      0.9468      0.9482      0.9496
  8           0.9511      0.9525      0.9539      0.9553      0.9566
  8           0.9580      0.9594      0.9607      0.9621      0.9634
  8           0.9647      0.9660      0.9673      0.9686      0.9699
  8           0.9712      0.9724      0.9737      0.9749      0.9762
  8           0.9774      0.9786      0.9798      0.9810      0.9822
  8           0.9834      0.9845      0.9857      0.9868      0.9879
  8           0.9891      0.9902      0.9913      0.9924      0.9935
  8           0.9945      0.9956      0.9967      0.9977      0.9987
  8           1.0000      1.0000      1.0000      1.0000      1.0000
  9 ENDTBL
  6 RUNOFF 1 001       1 0.4053      83.135       0.444      1        1  DA5
  6 RESVOR 2    01 1   2 387.74                                 1        1  Mway
  6 REACH  3  26   2   1 3113                                          1        1
  6 RUNOFF 1 003       3 0.0673      77.021       0.303      1        1  DA6
1


 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************

  6 RESVOR 2    05 3   4 400.                                   1        1  Pond
  6 REACH  3  26   4   2 1954                                   1        1
  6 ADDHYD 4  04   1 2 5                                        1        1
  6 RUNOFF 1 005       2 0.1867      76.388       0.530      1        1  DA4
  6 ADDHYD 4  06   5 2 1                                        1        1
  6 RESVOR 2    02 1   2 369                                    1        1  Weir1
  6 RESVOR 2    03 2   3 368                                    1        1  Weir2
  6 RESVOR 2    04 3   4 367                                    1        1  Weir3
  6 REACH  3  07   4   1 2088                                   1        1
  6 RUNOFF 1 008       2 0.2020      75.944       0.428      1        1  DA3
  6 ADDHYD 4 009   1 2 3                                        1        1
  6 REACH  3  10   3   1 3852                                   1        1
  6 RUNOFF 1 011       2 0.2366      76.760       0.443      1        1  DA2
  6 ADDHYD 4 012   1 2 6                                        1        1
  6 RUNOFF 1 013       1 0.3775      78.713       0.667      1        1  DA10
  6 REACH  3  14   1   2 2484                                   1        1
  6 RUNOFF 1 015       3 0.0886      84.806       0.443      1        1  DA9
  6 ADDHYD 4 016   2 3 4                                        1        1
  6 RUNOFF 1 017       3 0.0693      94.066       0.151      1        1  DA8
  6 ADDHYD 4 018   4 3 2                                        1        1
  6 REACH  3 019   2   1 4092                                   1        1
  6 RUNOFF 1 020       2 0.3284      87.933       0.277      1        1  DA7
  6 ADDHYD 4 021   1 2 7                                        1        1
  6 ADDHYD 4 022   6 7 1                                        1        1
  6 REACH  3  23   1   2 586                                    1        1
  6 RUNOFF 1 024       3 0.0200      72.029       0.277      1        1  DA1
  6 ADDHYD 4 025   2 3 4                                        1        1
    ENDATA
```

```
  7 INCREM 6                    0.05
  7 COMPUT 7 001   025           0.0        2.64         1.05 2  1   1
    ENDCMP 1
  7 COMPUT 7 001   025           0.0        3.19         1.05 2  1   2
    ENDCMP 1
  7 COMPUT 7 001   025           0.0        4.91         1.05 2  1   10
    ENDCMP 1
  7 COMPUT 7 001   025           0.0        7.23         1.05 2  1   50
    ENDCMP 1
  7 COMPUT 7 001   025           0.0        8.47         1.05 2  1   98
    ENDCMP 1
  7 COMPUT 7 001   025           0.0        9.88         1.05 2  1   99
    ENDCMP 1
    ENDJOB 2

 ******************************END OF 80-80
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 EXECUTIVE CONTROL INCREM    MAIN TIME INCREMENT =   .050 HOURS


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  2.64       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. = 1            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                        222.9                       (RUNOFF)
       20.13                          7.5                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.17 WATERSHED INCHES;     306 CFS-HRS;      25.3 ACRE-
                  FEET.


 OPERATION RESVOR   STRUCTURE  1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.64                        131.5                        390.28

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.17 WATERSHED INCHES;     306 CFS-HRS;      25.3 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
```

```
   ELEVATION(FEET)
      12.25                          29.6                        (RUNOFF)
      20.10                           1.0 *                      (RUNOFF)
                                          * FIRST POINT OF FLAT PEAK

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .83 WATERSHED INCHES;      36 CFS-HRS;       3.0 ACRE-
                  FEET.


 OPERATION RESVOR   STRUCTURE  5

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.39                           4.7                        400.67

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .82 WATERSHED INCHES;      36 CFS-HRS;       2.9 ACRE-
                  FEET.
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 OPERATION REACH    XSECTION  26

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      14.10                           4.4 *                      369.12
                                          * FIRST POINT OF FLAT PEAK

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .81 WATERSHED INCHES;      35 CFS-HRS;       2.9 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION   4

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.53                          81.6                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 1.12 WATERSHED INCHES;     341 CFS-HRS;      28.2 ACRE-
                 FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.41                          60.3                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .80 WATERSHED INCHES;      96 CFS-HRS;       8.0 ACRE-
                  FEET.
```

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	73.8	(NULL)
13.38	96.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 437 CFS-HRS; 36.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.90	86.8	371.72

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 437 CFS-HRS; 36.1 ACRE-FEET.

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OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
15.08	68.7	370.20

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.02 WATERSHED INCHES; 435 CFS-HRS; 35.9 ACRE-FEET.

OPERATION RESVOR STRUCTURE 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
15.84	64.3	369.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.02 WATERSHED INCHES; 433 CFS-HRS; 35.8 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
16.10	63.8	368.63

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.02 WATERSHED INCHES; 432 CFS-HRS; 35.7 ACRE-

FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	70.2	(RUNOFF)
23.13	2.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.78 WATERSHED INCHES; 101 CFS-HRS; 8.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	70.7	(NULL)
16.04	68.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.96 WATERSHED INCHES; 533 CFS-HRS; 44.1 ACRE-FEET.

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OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	53.6	349.91
16.34	68.3	350.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.96 WATERSHED INCHES; 532 CFS-HRS; 44.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	86.0	(RUNOFF)
20.13	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.82 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK

ELEVATION(FEET)
12.41 129.5 (NULL)
16.28 74.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.93 WATERSHED INCHES; 657 CFS-HRS; 54.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.50 128.9 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 223 CFS-HRS; 18.5 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.64 121.2 378.90

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 223 CFS-HRS; 18.5 ACRE-FEET.

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OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.33 53.2 (RUNOFF)
20.13 1.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.28 WATERSHED INCHES; 73 CFS-HRS; 6.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.57 154.5 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.99 WATERSHED INCHES; 296 CFS-HRS; 24.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	99.0	(RUNOFF)
17.34	2.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.00 WATERSHED INCHES; 89 CFS-HRS; 7.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	166.7	(NULL)
12.53	176.8	(NULL)
20.00	9.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.10 WATERSHED INCHES; 381 CFS-HRS; 31.5 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.10	131.5	357.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.09 WATERSHED INCHES; 377 CFS-HRS; 31.1 ACRE-FEET.

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OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	288.1	(RUNOFF)
18.66	7.5	(RUNOFF)
21.98	6.0	(RUNOFF)
24.03	5.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.50 WATERSHED INCHES; 317 CFS-HRS; 26.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)

```
      12.22                        317.4                        (NULL)
      12.88                        179.8                        (NULL)
      20.04                         17.1                        (NULL)
      20.58                         16.4                        (NULL)
      23.71                         13.0                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.24 WATERSHED INCHES;     693 CFS-HRS;      57.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  22

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.26                        417.2                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.03 WATERSHED INCHES;    1301 CFS-HRS;     107.5 ACRE-
                FEET.


 OPERATION REACH    XSECTION  23

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.36                        395.1                         346.49

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.03 WATERSHED INCHES;    1298 CFS-HRS;     107.2 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  24

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.24                          6.1                        (RUNOFF)
1
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   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 .60 WATERSHED INCHES;       8 CFS-HRS;        .6 ACRE-
                 FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.36                        400.0                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.02 WATERSHED INCHES;    1305 CFS-HRS;     107.9 ACRE-
                FEET.
```

```
 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   1


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  3.19       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. = 2            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                          306.8                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.61 WATERSHED INCHES;     421 CFS-HRS;      34.8 ACRE-
                   FEET.


 OPERATION RESVOR   STRUCTURE  1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.59                          198.6                          390.94

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.61 WATERSHED INCHES;     421 CFS-HRS;      34.8 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.24                           44.4                        (RUNOFF)
       24.03                            1.1                        (RUNOFF)
1
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.21 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
                   FEET.


 OPERATION RESVOR   STRUCTURE  5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       13.29                            7.0                          401.02

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.18 WATERSHED INCHES;      51 CFS-HRS;       4.3 ACRE-
                   FEET.
```

OPERATION REACH XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.90	6.8	369.16

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.18 WATERSHED INCHES; 51 CFS-HRS; 4.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.45	119.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.54 WATERSHED INCHES; 471 CFS-HRS; 38.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.40	91.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.17 WATERSHED INCHES; 141 CFS-HRS; 11.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	113.8	(NULL)
13.28	141.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.44 WATERSHED INCHES; 612 CFS-HRS; 50.5 ACRE-FEET.

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OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.64	133.9	372.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.44 WATERSHED INCHES; 611 CFS-HRS; 50.5 ACRE-

FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
14.46	110.0	370.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.42 WATERSHED INCHES; 606 CFS-HRS; 50.1 ACRE-FEET.

OPERATION RESVOR STRUCTURE 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
14.85	106.0	370.48

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.41 WATERSHED INCHES; 602 CFS-HRS; 49.7 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
15.25	102.2	369.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.41 WATERSHED INCHES; 600 CFS-HRS; 49.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	106.9	(RUNOFF)
20.14	4.0	(RUNOFF)
23.13	3.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.14 WATERSHED INCHES; 149 CFS-HRS; 12.3 ACRE-FEET.

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OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	108.5	(NULL)

```
      15.19                        110.3                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.35 WATERSHED INCHES;     748 CFS-HRS;      61.8 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.54                        85.6                        350.39
      15.48                       108.7                        350.69

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.34 WATERSHED INCHES;     747 CFS-HRS;      61.7 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  11

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.34                       128.7                        (RUNOFF)
      20.13                         4.8                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.19 WATERSHED INCHES;     182 CFS-HRS;      15.0 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  12

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.40                       200.9                        (NULL)
      15.43                       117.7                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.31 WATERSHED INCHES;     928 CFS-HRS;      76.7 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  13

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.48                       188.8                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.31 WATERSHED INCHES;     319 CFS-HRS;      26.4 ACRE-
                FEET.
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OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.74	153.2	380.38

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.31 WATERSHED INCHES; 319 CFS-HRS; 26.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	72.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.73 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.65	189.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.39 WATERSHED INCHES; 418 CFS-HRS; 34.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	123.7	(RUNOFF)
15.84	3.5	(RUNOFF)
19.43	2.1	(RUNOFF)
19.74	2.0	(RUNOFF)
20.05	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.51 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	212.0	(NULL)
12.56	213.2	(NULL)
20.00	12.6	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.50 WATERSHED INCHES; 518 CFS-HRS; 42.8 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.10	169.9	358.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.48 WATERSHED INCHES; 512 CFS-HRS; 42.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	380.2	(RUNOFF)
18.66	9.4	(RUNOFF)
20.66	8.3	(RUNOFF)
21.98	7.6	(RUNOFF)
24.03	6.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.98 WATERSHED INCHES; 420 CFS-HRS; 34.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	436.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.66 WATERSHED INCHES; 926 CFS-HRS; 76.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	600.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.40 WATERSHED INCHES; 1775 CFS-HRS; 146.7 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	577.5	347.09

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.40 WATERSHED INCHES; 1771 CFS-HRS; 146.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.23 10.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 12 CFS-HRS; 1.0 ACRE-
FEET.

OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.36 585.4 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.39 WATERSHED INCHES; 1783 CFS-HRS; 147.3 ACRE-
FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 25
STARTING TIME = .00 RAIN DEPTH = 4.91 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .050 HOURS
ALTERNATE NO. = 1 STORM NO. =10 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.32 595.7 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 812 CFS-HRS; 67.1 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK
ELEVATION(FEET)
12.52 432.0 392.84
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 811 CFS-HRS; 67.0 ACRE-
FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	96.3	(RUNOFF)
21.97	2.2	(RUNOFF)
23.12	2.0	(RUNOFF)
24.03	1.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.55 WATERSHED INCHES; 111 CFS-HRS; 9.1 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.91	20.6	402.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.48 WATERSHED INCHES; 108 CFS-HRS; 8.9 ACRE-
FEET.

OPERATION REACH XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.31	19.7	369.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.47 WATERSHED INCHES; 107 CFS-HRS; 8.9 ACRE-
FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.35	257.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.99 WATERSHED INCHES; 912 CFS-HRS; 75.4 ACRE-
FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	202.4	(RUNOFF)

1

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.49 WATERSHED INCHES; 300 CFS-HRS; 24.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	257.5	(NULL)
13.20	305.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.85 WATERSHED INCHES; 1213 CFS-HRS; 100.2 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.47	293.3	374.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.84 WATERSHED INCHES; 1208 CFS-HRS; 99.8 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
14.02	260.1	372.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.79 WATERSHED INCHES; 1188 CFS-HRS; 98.2 ACRE-
FEET.

OPERATION RESVOR STRUCTURE 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
14.26	255.2	372.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.76 WATERSHED INCHES; 1174 CFS-HRS; 97.0 ACRE-
FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)

```
      14.53                          250.3                          370.04

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.75 WATERSHED INCHES;    1169 CFS-HRS;      96.6 ACRE-
                FEET.
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 OPERATION RUNOFF   XSECTION   8

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                         238.2                       (RUNOFF)
      20.13                           7.4                       (RUNOFF)
      23.13                           5.9                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.45 WATERSHED INCHES;     320 CFS-HRS;      26.4 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                         248.7                       (NULL)
      14.49                         270.6                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.68 WATERSHED INCHES;    1489 CFS-HRS;     123.0 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.67                         148.4                        351.26
      15.03                         251.5                        353.25

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.66 WATERSHED INCHES;    1476 CFS-HRS;     122.0 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  11

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                         283.4                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.53 WATERSHED INCHES;     386 CFS-HRS;      31.9 ACRE-
                FEET.
```

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	390.6	(NULL)
14.97	271.7	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.63 WATERSHED INCHES; 1862 CFS-HRS; 153.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	397.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 658 CFS-HRS; 54.3 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.70	331.9	381.44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 658 CFS-HRS; 54.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	135.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.26 WATERSHED INCHES; 187 CFS-HRS; 15.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	403.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 844 CFS-HRS; 69.7 ACRE-

FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	199.4	(RUNOFF)
15.84	5.5	(RUNOFF)
17.34	4.3	(RUNOFF)
20.05	3.2	(RUNOFF)
20.61	3.0	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.12 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	397.3	(NULL)
12.56	441.9	(NULL)
19.98	21.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.87 WATERSHED INCHES; 991 CFS-HRS; 81.9 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.98	361.2	358.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.84 WATERSHED INCHES; 981 CFS-HRS; 81.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	670.8	(RUNOFF)
18.66	15.4	(RUNOFF)
20.11	14.2	(RUNOFF)
20.66	13.5	(RUNOFF)
21.98	12.3	(RUNOFF)
23.11	11.3	(RUNOFF)
24.03	10.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.57 WATERSHED INCHES; 757 CFS-HRS; 62.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	824.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.08 WATERSHED INCHES; 1716 CFS-HRS; 141.8 ACRE-FEET.

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OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	1165.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 3414 CFS-HRS; 282.1 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	1139.2	348.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.69 WATERSHED INCHES; 3407 CFS-HRS; 281.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	24.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.13 WATERSHED INCHES; 27 CFS-HRS; 2.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.34	1158.7	(NULL)

```
   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.68 WATERSHED INCHES;    3434 CFS-HRS;     283.8 ACRE-
                FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   3


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  7.23       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =50            RAIN TABLE NO. = 5
1
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 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                         995.0                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.25 WATERSHED INCHES;    1374 CFS-HRS;     113.5 ACRE-
                FEET.


 OPERATION RESVOR   STRUCTURE  1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.47                         820.1                        394.93

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.20 WATERSHED INCHES;    1360 CFS-HRS;     112.4 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.23                         172.1                       (RUNOFF)
       20.12                           4.1                       (RUNOFF)
       23.77                           3.0                       (RUNOFF)
       24.03                           3.0                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.57 WATERSHED INCHES;     199 CFS-HRS;      16.4 ACRE-
                FEET.


 OPERATION RESVOR   STRUCTURE  5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
```

```
    ELEVATION(FEET)
       12.77                          44.2                          403.58

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.38 WATERSHED INCHES;     190 CFS-HRS;      15.7 ACRE-
                   FEET.


 OPERATION REACH    XSECTION  26

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       13.07                          42.8                          369.49

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.37 WATERSHED INCHES;     190 CFS-HRS;      15.7 ACRE-
                   FEET.
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 OPERATION ADDHYD   XSECTION   4

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       13.28                         456.2                        (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   5.00 WATERSHED INCHES;    1526 CFS-HRS;     126.1 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION   5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.37                         365.2                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.50 WATERSHED INCHES;     542 CFS-HRS;      44.8 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION   6

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.46                         493.8                        (NULL)
       13.11                         546.5                        (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.86 WATERSHED INCHES;    2068 CFS-HRS;     170.9 ACRE-
                   FEET.


 OPERATION RESVOR   STRUCTURE  2
```

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
13.34 529.3 376.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.82 WATERSHED INCHES; 2051 CFS-HRS; 169.5 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
13.60 513.7 374.03

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.71 WATERSHED INCHES; 2004 CFS-HRS; 165.6 ACRE-FEET.

OPERATION RESVOR STRUCTURE 4
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PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
13.73 509.6 373.61

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 1975 CFS-HRS; 163.2 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
13.96 500.1 370.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.62 WATERSHED INCHES; 1966 CFS-HRS; 162.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.31 432.9 (RUNOFF)
20.13 12.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.45 WATERSHED INCHES; 580 CFS-HRS; 47.9 ACRE-FEET.

```
 OPERATION ADDHYD   XSECTION   9

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                         463.6                       (NULL)
       13.91                         542.0                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.58 WATERSHED INCHES;    2546 CFS-HRS;     210.4 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  10

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.59                         316.5                        353.53
       14.32                         512.7                        354.09

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.54 WATERSHED INCHES;    2526 CFS-HRS;     208.7 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  11
1
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    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.32                         509.4                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.54 WATERSHED INCHES;     694 CFS-HRS;      57.3 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  12

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.37                         757.8                       (NULL)
       14.28                         555.6                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.54 WATERSHED INCHES;    3219 CFS-HRS;     266.0 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  13

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.46                         698.2                       (RUNOFF)
```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.76 WATERSHED INCHES; 1160 CFS-HRS; 95.9 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.65	615.0	382.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.76 WATERSHED INCHES; 1160 CFS-HRS; 95.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	222.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.41 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.58	740.7	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.84 WATERSHED INCHES; 1455 CFS-HRS; 120.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	300.6	(RUNOFF)
15.84	8.2	(RUNOFF)
17.34	6.3	(RUNOFF)
18.61	5.1	(RUNOFF)
18.84	5.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.29 WATERSHED INCHES; 281 CFS-HRS; 23.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.54                        803.4                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.85 WATERSHED INCHES;    1675 CFS-HRS;     138.4 ACRE-
                FEET.


 OPERATION REACH    XSECTION  19

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.92                        690.9                        359.63

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.81 WATERSHED INCHES;    1663 CFS-HRS;     137.5 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  20

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                       1066.0                       (RUNOFF)
      18.66                         23.4                       (RUNOFF)
      20.11                         21.4                       (RUNOFF)
      20.66                         20.5                       (RUNOFF)
      21.98                         18.6                       (RUNOFF)
      23.11                         17.0                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.72 WATERSHED INCHES;    1213 CFS-HRS;     100.2 ACRE-
                FEET.
1
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 OPERATION ADDHYD   XSECTION  21

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                       1338.7                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.11 WATERSHED INCHES;    2846 CFS-HRS;     235.2 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  22

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.27                       2013.1                       (NULL)
```

```
    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.61 WATERSHED INCHES;    5839 CFS-HRS;     482.6 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  23

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.34                        1984.7                        349.76

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.61 WATERSHED INCHES;    5830 CFS-HRS;     481.8 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  24

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.21                         47.3                       (RUNOFF)
       20.66                          1.1                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.03 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  25

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.33                        2021.4                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.60 WATERSHED INCHES;    5880 CFS-HRS;     485.9 ACRE-
                  FEET.
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 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   4


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  8.47       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =98            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                        1200.1                       (RUNOFF)
```

```
    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  6.39 WATERSHED INCHES;    1672 CFS-HRS;     138.2 ACRE-
                  FEET.


 OPERATION RESVOR   STRUCTURE  1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.41                        1112.9                        395.35

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  6.32 WATERSHED INCHES;    1654 CFS-HRS;     136.7 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.23                         212.8                       (RUNOFF)
       18.67                           5.3                       (RUNOFF)
       21.98                           4.2                       (RUNOFF)
       24.03                           3.6                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.70 WATERSHED INCHES;     248 CFS-HRS;      20.5 ACRE-
                  FEET.


 OPERATION RESVOR   STRUCTURE  5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.76                          54.4                        404.38

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.43 WATERSHED INCHES;     236 CFS-HRS;      19.5 ACRE-
                  FEET.
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 OPERATION REACH    XSECTION  26

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       13.06                          53.3                        369.55

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  5.41 WATERSHED INCHES;     235 CFS-HRS;      19.4 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION   4
```

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.23                        558.8                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.10 WATERSHED INCHES;    1860 CFS-HRS;     153.7 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.37                        457.4                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.63 WATERSHED INCHES;     679 CFS-HRS;      56.1 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   6

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.44                        627.6                       (NULL)
      12.94                        686.4                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.96 WATERSHED INCHES;    2535 CFS-HRS;     209.5 ACRE-
                FEET.


 OPERATION RESVOR   STRUCTURE  2

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.24                        662.2                        378.15

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.90 WATERSHED INCHES;    2512 CFS-HRS;     207.6 ACRE-
                FEET.


 OPERATION RESVOR   STRUCTURE  3
1
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   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.46                        649.5                        374.55

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.77 WATERSHED INCHES;    2454 CFS-HRS;     202.8 ACRE-
                FEET.
```

OPERATION RESVOR STRUCTURE 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.57	645.5	374.26

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.68 WATERSHED INCHES; 2418 CFS-HRS; 199.8 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.80	633.9	371.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.66 WATERSHED INCHES; 2407 CFS-HRS; 198.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	539.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.57 WATERSHED INCHES; 727 CFS-HRS; 60.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	584.8	(NULL)
13.72	691.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.63 WATERSHED INCHES; 3131 CFS-HRS; 258.8 ACRE-FEET.

OPERATION REACH XSECTION 10
1
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.60	416.8	353.81
14.11	658.2	354.44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.59 WATERSHED INCHES; 3107 CFS-HRS; 256.7 ACRE-

FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	630.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.67 WATERSHED INCHES; 866 CFS-HRS; 71.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	962.8	(NULL)
14.06	714.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.60 WATERSHED INCHES; 3970 CFS-HRS; 328.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	862.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.91 WATERSHED INCHES; 1440 CFS-HRS; 119.0 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.63	771.1	382.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.91 WATERSHED INCHES; 1439 CFS-HRS; 118.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 15
1
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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	270.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.56 WATERSHED INCHES; 375 CFS-HRS; 31.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	926.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.94 WATERSHED INCHES; 1787 CFS-HRS; 147.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	353.6	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.4	(RUNOFF)
20.84	5.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.47 WATERSHED INCHES; 334 CFS-HRS; 27.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	1002.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.95 WATERSHED INCHES; 2057 CFS-HRS; 170.0 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.85	872.5	359.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.92 WATERSHED INCHES; 2044 CFS-HRS; 168.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                        1270.7                       (RUNOFF)
      18.66                          27.6                       (RUNOFF)
      20.11                          25.3                       (RUNOFF)
      20.66                          24.2                       (RUNOFF)
      21.98                          22.0                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.87 WATERSHED INCHES;    1456 CFS-HRS;     120.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  21

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                        1683.8                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.23 WATERSHED INCHES;    3470 CFS-HRS;     286.8 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  22

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.27                        2547.1                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.68 WATERSHED INCHES;    7195 CFS-HRS;     594.6 ACRE-
                FEET.


 OPERATION REACH    XSECTION  23

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.34                        2521.0                        350.43

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.68 WATERSHED INCHES;    7185 CFS-HRS;     593.8 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  24

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                          59.9                       (RUNOFF)
      24.03                           1.0                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.11 WATERSHED INCHES;      66 CFS-HRS;       5.4 ACRE-
                FEET.
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OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.33	2567.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.67 WATERSHED INCHES; 7248 CFS-HRS; 598.9 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 5

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 25
STARTING TIME = .00 RAIN DEPTH = 9.88 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .050 HOURS
ALTERNATE NO. = 1 STORM NO. =99 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	1440.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.69 WATERSHED INCHES; 2012 CFS-HRS; 166.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1408.6	395.62

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.61 WATERSHED INCHES; 1989 CFS-HRS; 164.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	260.1	(RUNOFF)
18.67	6.3	(RUNOFF)
21.96	5.0	(RUNOFF)
24.03	4.3	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.02 WATERSHED INCHES; 305 CFS-HRS; 25.2 ACRE-FEET.

OPERATION RESVOR STRUCTURE 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.77	64.5	405.29

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.63 WATERSHED INCHES; 288 CFS-HRS; 23.8 ACRE-FEET.

OPERATION REACH XSECTION 26

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.05	63.5	369.62

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.60 WATERSHED INCHES; 287 CFS-HRS; 23.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.18	676.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.35 WATERSHED INCHES; 2242 CFS-HRS; 185.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	558.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.94 WATERSHED INCHES; 836 CFS-HRS; 69.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.42	759.0	(NULL)
12.96	837.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.21 WATERSHED INCHES; 3069 CFS-HRS; 253.6 ACRE-FEET.

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*** WARNING - DISCHARGE EXCEEDS HIGHEST RATING POINT FOR STRUCTURE 2,
VALUE EXTRAPOLATED.
***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	801.6	379.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.15 WATERSHED INCHES; 3040 CFS-HRS; 251.3 ACRE-FEET.

OPERATION RESVOR STRUCTURE 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.44	787.5	375.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.98 WATERSHED INCHES; 2970 CFS-HRS; 245.4 ACRE-FEET.

OPERATION RESVOR STRUCTURE 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.55	783.4	374.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.88 WATERSHED INCHES; 2927 CFS-HRS; 241.9 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.76	772.2	371.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.85 WATERSHED INCHES; 2915 CFS-HRS; 240.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	662.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.88 WATERSHED INCHES; 897 CFS-HRS; 74.1 ACRE-

FEET.

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OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	737.0	(NULL)
13.67	843.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.84 WATERSHED INCHES; 3802 CFS-HRS; 314.2 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	547.4	354.17
14.03	812.5	354.79

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.79 WATERSHED INCHES; 3776 CFS-HRS; 312.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	775.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.98 WATERSHED INCHES; 1067 CFS-HRS; 88.1 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1207.1	(NULL)
13.95	882.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.82 WATERSHED INCHES; 4832 CFS-HRS; 399.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)

```
      12.45                        1050.5                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                7.22 WATERSHED INCHES;    1760 CFS-HRS;     145.4 ACRE-
                FEET.
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 OPERATION REACH    XSECTION  14

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.62                         951.3                        383.03

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                7.21 WATERSHED INCHES;    1756 CFS-HRS;     145.1 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  15

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.31                         321.2                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                7.85 WATERSHED INCHES;     449 CFS-HRS;      37.1 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  16

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.56                        1141.9                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                7.21 WATERSHED INCHES;    2167 CFS-HRS;     179.1 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  17

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.14                         413.8                        (RUNOFF)
      15.84                          11.3                        (RUNOFF)
      17.34                           8.7                        (RUNOFF)
      20.05                           6.4                        (RUNOFF)
      20.61                           6.1                        (RUNOFF)
      20.84                           6.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                8.80 WATERSHED INCHES;     393 CFS-HRS;      32.5 ACRE-
                FEET.
```

```
 OPERATION ADDHYD   XSECTION  18

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.53                        1231.8                       (NULL)
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   7.22 WATERSHED INCHES;    2494 CFS-HRS;     206.1 ACRE-
                   FEET.


 OPERATION REACH    XSECTION  19

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.83                        1081.0                        360.30

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   7.17 WATERSHED INCHES;    2479 CFS-HRS;     204.9 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION  20

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.21                        1503.9                       (RUNOFF)
       18.66                          32.4                       (RUNOFF)
       20.11                          29.7                       (RUNOFF)
       20.66                          28.3                       (RUNOFF)
       21.98                          25.8                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   8.19 WATERSHED INCHES;    1737 CFS-HRS;     143.5 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION  21

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.24                        2029.0                       (NULL)
       20.03                          78.6                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   7.50 WATERSHED INCHES;    4183 CFS-HRS;     345.7 ACRE-
                   FEET.


 OPERATION ADDHYD   XSECTION  22

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
```

```
   ELEVATION(FEET)
      12.27                        3119.5                          (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.91 WATERSHED INCHES;    8754 CFS-HRS;     723.4 ACRE-
                FEET.


 OPERATION REACH    XSECTION  23
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.34                        3091.4                          351.08

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.91 WATERSHED INCHES;    8742 CFS-HRS;     722.5 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  24

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                          74.1                        (RUNOFF)
      24.03                           1.2                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.38 WATERSHED INCHES;      82 CFS-HRS;       6.8 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.33                        3148.5                          (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.90 WATERSHED INCHES;    8820 CFS-HRS;     728.9 ACRE-
                FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   6
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 2.64 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 5, ARC 2							
MAIN TIME INCREMENT .050 HOURS							
ALTERNATE 1 STORM 1							
XSECTION 1	RUNOFF	.41	1.17	---	12.33	223	543.9
STRUCTURE 1	RESVOR	.41	1.17	390.28	12.64	131	319.5
XSECTION 3	RUNOFF	.07	.83	---	12.25	30	428.6
STRUCTURE 5	RESVOR	.07	.82	400.67	13.39	5	71.4
XSECTION 26	REACH	.07	.81	369.12	14.10F	4F	57.1
XSECTION 4	ADDHYD	.47	1.12	---	13.53	82	174.5
XSECTION 5	RUNOFF	.19	.80	---	12.41	60	315.8
XSECTION 6	ADDHYD	.66	1.03	---	13.38	96	145.5
STRUCTURE 2	RESVOR	.66	1.03	371.72	13.90	87	131.8
STRUCTURE 3	RESVOR	.66	1.02	370.20	15.08	69	104.5
STRUCTURE 4	RESVOR	.66	1.02	369.86	15.84	64	97.0
XSECTION 7	REACH	.66	1.02	368.63	16.10	64	97.0
XSECTION 8	RUNOFF	.20	.78	---	12.34	70	350.0
XSECTION 9	ADDHYD	.86	.96	---	12.34	71	82.6
XSECTION 10	REACH	.86	.96	350.13	16.34	68	79.1
XSECTION 11	RUNOFF	.24	.82	---	12.35	86	358.3
XSECTION 12	ADDHYD	1.10	.93	---	12.41	129	117.3
XSECTION 13	RUNOFF	.38	.92	---	12.50	129	339.5
XSECTION 14	REACH	.38	.92	378.90	12.64	121	318.4
XSECTION 15	RUNOFF	.09	1.28	---	12.33	53	588.9
XSECTION 16	ADDHYD	.47	.99	---	12.57	154	327.7
XSECTION 17	RUNOFF	.07	2.00	---	12.14	99	1414.3
XSECTION 18	ADDHYD	.54	1.10	---	12.53	177	327.8
XSECTION 19	REACH	.54	1.09	357.82	13.10	132	244.4
XSECTION 20	RUNOFF	.33	1.50	---	12.22	288	872.7
XSECTION 21	ADDHYD	.86	1.24	---	12.22	317	368.6
XSECTION 22	ADDHYD	1.96	1.03	---	12.26	417	212.8
XSECTION 23	REACH	1.96	1.03	346.49	12.36	395	201.5

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A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 24	RUNOFF	.02	.60	---	12.24	6	300.0
XSECTION 25	ADDHYD	1.98	1.02	---	12.36	400	202.0
RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 1 STORM 2							
XSECTION 1	RUNOFF	.41	1.61	---	12.33	307	748.8
STRUCTURE 1	RESVOR	.41	1.61	390.94	12.59	199	485.4
XSECTION 3	RUNOFF	.07	1.21	---	12.24	44	628.6
STRUCTURE 5	RESVOR	.07	1.18	401.02	13.29	7	100.0
XSECTION 26	REACH	.07	1.18	369.16	13.90	7	100.0
XSECTION 4	ADDHYD	.47	1.54	---	13.45	119	253.2
XSECTION 5	RUNOFF	.19	1.17	---	12.40	92	484.2
XSECTION 6	ADDHYD	.66	1.44	---	13.28	142	215.2
STRUCTURE 2	RESVOR	.66	1.44	372.48	13.64	134	203.0
STRUCTURE 3	RESVOR	.66	1.42	370.84	14.46	110	166.7
STRUCTURE 4	RESVOR	.66	1.41	370.48	14.85	106	160.6
XSECTION 7	REACH	.66	1.41	369.22	15.25	102	154.5
XSECTION 8	RUNOFF	.20	1.14	---	12.33	107	535.0
XSECTION 9	ADDHYD	.86	1.35	---	15.19	110	127.9
XSECTION 10	REACH	.86	1.34	350.69	15.48	109	126.7
XSECTION 11	RUNOFF	.24	1.19	---	12.34	129	537.5
XSECTION 12	ADDHYD	1.10	1.31	---	12.40	201	182.7
XSECTION 13	RUNOFF	.38	1.31	---	12.48	189	497.4
XSECTION 14	REACH	.38	1.31	380.38	12.74	153	402.6
XSECTION 15	RUNOFF	.09	1.73	---	12.32	73	811.1
XSECTION 16	ADDHYD	.47	1.39	---	12.65	190	404.3
XSECTION 17	RUNOFF	.07	2.51	---	12.14	124	1771.4
XSECTION 18	ADDHYD	.54	1.50	---	12.56	213	394.4
XSECTION 19	REACH	.54	1.48	358.06	13.10	170	314.8

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 20	RUNOFF	.33	1.98	---	12.21	380	1151.5
XSECTION 21	ADDHYD	.86	1.66	---	12.23	437	508.1
XSECTION 22	ADDHYD	1.96	1.40	---	12.26	600	306.1
XSECTION 23	REACH	1.96	1.40	347.09	12.36	578	294.9
XSECTION 24	RUNOFF	.02	.92	---	12.23	10	500.0
XSECTION 25	ADDHYD	1.98	1.39	---	12.36	585	295.5
RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 1 STORM 10							
XSECTION 1	RUNOFF	.41	3.10	---	12.32	596	1453.7
STRUCTURE 1	RESVOR	.41	3.10	392.84	12.52	432	1053.7
XSECTION 3	RUNOFF	.07	2.55	---	12.23	96	1371.4
STRUCTURE 5	RESVOR	.07	2.48	402.12	12.91	21	300.0
XSECTION 26	REACH	.07	2.47	369.31	13.31	20	285.7
XSECTION 4	ADDHYD	.47	2.99	---	13.35	257	546.8
XSECTION 5	RUNOFF	.19	2.49	---	12.38	202	1063.2
XSECTION 6	ADDHYD	.66	2.85	---	13.20	306	463.6
STRUCTURE 2	RESVOR	.66	2.84	374.52	13.47	293	443.9
STRUCTURE 3	RESVOR	.66	2.79	372.70	14.02	260	393.9
STRUCTURE 4	RESVOR	.66	2.76	372.15	14.26	255	386.4
XSECTION 7	REACH	.66	2.75	370.04	14.53	250	378.8
XSECTION 8	RUNOFF	.20	2.45	---	12.32	238	1190.0
XSECTION 9	ADDHYD	.86	2.68	---	14.49	271	315.1
XSECTION 10	REACH	.86	2.66	353.25	15.03	252	293.0
XSECTION 11	RUNOFF	.24	2.53	---	12.32	283	1179.2
XSECTION 12	ADDHYD	1.10	2.63	---	12.37	391	355.5
XSECTION 13	RUNOFF	.38	2.70	---	12.47	397	1044.7
XSECTION 14	REACH	.38	2.70	381.44	12.70	332	873.7
XSECTION 15	RUNOFF	.09	3.26	---	12.32	136	1511.1

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 10							
XSECTION 16	ADDHYD	.47	2.81	---	12.62	403	857.4
XSECTION 17	RUNOFF	.07	4.12	---	12.14	199	2842.9
XSECTION 18	ADDHYD	.54	2.87	---	12.56	442	818.5
XSECTION 19	REACH	.54	2.84	358.85	12.98	361	668.5
XSECTION 20	RUNOFF	.33	3.57	---	12.21	671	2033.3
XSECTION 21	ADDHYD	.86	3.08	---	12.23	824	958.1
XSECTION 22	ADDHYD	1.96	2.70	---	12.26	1165	594.4
XSECTION 23	REACH	1.96	2.69	348.39	12.34	1139	581.1
XSECTION 24	RUNOFF	.02	2.13	---	12.22	25	1250.0
XSECTION 25	ADDHYD	1.98	2.68	---	12.34	1159	585.4

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 50							
XSECTION 1	RUNOFF	.41	5.25	---	12.31	995	2426.8
STRUCTURE 1	RESVOR	.41	5.20	394.93	12.47	820	2000.0
XSECTION 3	RUNOFF	.07	4.57	---	12.23	172	2457.1
STRUCTURE 5	RESVOR	.07	4.38	403.58	12.77	44	628.6
XSECTION 26	REACH	.07	4.37	369.49	13.07	43	614.3
XSECTION 4	ADDHYD	.47	5.00	---	13.28	456	970.2
XSECTION 5	RUNOFF	.19	4.50	---	12.37	365	1921.1
XSECTION 6	ADDHYD	.66	4.86	---	13.11	546	827.3
STRUCTURE 2	RESVOR	.66	4.82	376.95	13.34	529	801.5
STRUCTURE 3	RESVOR	.66	4.71	374.03	13.60	514	778.8
STRUCTURE 4	RESVOR	.66	4.64	373.61	13.73	510	772.7
XSECTION 7	REACH	.66	4.62	370.97	13.96	500	757.6
XSECTION 8	RUNOFF	.20	4.45	---	12.31	433	2165.0
XSECTION 9	ADDHYD	.86	4.58	---	13.91	542	630.2
XSECTION 10	REACH	.86	4.54	354.09	14.32	513	596.5
XSECTION 11	RUNOFF	.24	4.54	---	12.32	509	2120.8

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 50							
XSECTION 12	ADDHYD	1.10	4.54	---	12.37	758	689.1
XSECTION 13	RUNOFF	.38	4.76	---	12.46	698	1836.8
XSECTION 14	REACH	.38	4.76	382.28	12.65	615	1618.4
XSECTION 15	RUNOFF	.09	5.41	---	12.31	223	2477.8
XSECTION 16	ADDHYD	.47	4.84	---	12.58	741	1576.6
XSECTION 17	RUNOFF	.07	6.29	---	12.14	301	4300.0
XSECTION 18	ADDHYD	.54	4.85	---	12.54	803	1487.0
XSECTION 19	REACH	.54	4.81	359.63	12.92	691	1279.6
XSECTION 20	RUNOFF	.33	5.72	---	12.21	1066	3230.3
XSECTION 21	ADDHYD	.86	5.11	---	12.23	1339	1557.0
XSECTION 22	ADDHYD	1.96	4.61	---	12.27	2013	1027.0
XSECTION 23	REACH	1.96	4.61	349.76	12.34	1985	1012.8
XSECTION 24	RUNOFF	.02	4.03	---	12.21	47	2350.0
XSECTION 25	ADDHYD	1.98	4.60	---	12.33	2021	1020.7

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 98							
XSECTION 1	RUNOFF	.41	6.39	---	12.31	1200	2926.8
STRUCTURE 1	RESVOR	.41	6.32	395.35	12.41	1113	2714.6
XSECTION 3	RUNOFF	.07	5.70	---	12.23	213	3042.9
STRUCTURE 5	RESVOR	.07	5.43	404.38	12.76	54	771.4
XSECTION 26	REACH	.07	5.41	369.55	13.06	53	757.1
XSECTION 4	ADDHYD	.47	6.10	---	13.23	559	1189.4
XSECTION 5	RUNOFF	.19	5.63	---	12.37	457	2405.3
XSECTION 6	ADDHYD	.66	5.96	---	12.94	686	1039.4
STRUCTURE 2	RESVOR	.66	5.90	378.15	13.24	662	1003.0
STRUCTURE 3	RESVOR	.66	5.77	374.55	13.46	649	983.3
STRUCTURE 4	RESVOR	.66	5.68	374.26	13.57	645	977.3
XSECTION 7	REACH	.66	5.66	371.34	13.80	634	960.6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED

HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 98							
XSECTION 8	RUNOFF	.20	5.57	---	12.31	540	2700.0
XSECTION 9	ADDHYD	.86	5.63	---	13.72	691	803.5
XSECTION 10	REACH	.86	5.59	354.44	14.11	658	765.1
XSECTION 11	RUNOFF	.24	5.67	---	12.32	630	2625.0
XSECTION 12	ADDHYD	1.10	5.60	---	12.37	963	875.5
XSECTION 13	RUNOFF	.38	5.91	---	12.45	862	2268.4
XSECTION 14	REACH	.38	5.91	382.65	12.63	771	2028.9
XSECTION 15	RUNOFF	.09	6.56	---	12.31	271	3011.1
XSECTION 16	ADDHYD	.47	5.94	---	12.57	927	1972.3
XSECTION 17	RUNOFF	.07	7.47	---	12.14	354	5057.1
XSECTION 18	ADDHYD	.54	5.95	---	12.54	1002	1855.6
XSECTION 19	REACH	.54	5.92	359.96	12.85	872	1614.8
XSECTION 20	RUNOFF	.33	6.87	---	12.21	1271	3851.5
XSECTION 21	ADDHYD	.86	6.23	---	12.23	1684	1958.1
XSECTION 22	ADDHYD	1.96	5.68	---	12.27	2547	1299.5
XSECTION 23	REACH	1.96	5.68	350.43	12.34	2521	1286.2
XSECTION 24	RUNOFF	.02	5.11	---	12.21	60	3000.0
XSECTION 25	ADDHYD	1.98	5.67	---	12.33	2567	1296.5

RAINFALL OF 9.88 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 99							
XSECTION 1	RUNOFF	.41	7.69	---	12.31	1441	3514.6
STRUCTURE 1	RESVOR	.41	7.61	395.62	12.37	1409	3436.6
XSECTION 3	RUNOFF	.07	7.02	---	12.23	260	3714.3
STRUCTURE 5	RESVOR	.07	6.63	405.29	12.77	64	914.3
XSECTION 26	REACH	.07	6.60	369.62	13.05	63	900.0
XSECTION 4	ADDHYD	.47	7.35	---	13.18	677	1440.4
XSECTION 5	RUNOFF	.19	6.94	---	12.37	559	2942.1
XSECTION 6	ADDHYD	.66	7.21	---	12.96	838	1269.7

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SUMMARY TABLE 1

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A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED
HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 99							
STRUCTURE 2	RESVOR	.66	7.15	379.32	13.24	802	1215.2
STRUCTURE 3	RESVOR	.66	6.98	375.08	13.44	788	1193.9
STRUCTURE 4	RESVOR	.66	6.88	374.87	13.55	783	1186.4
XSECTION 7	REACH	.66	6.85	371.69	13.76	772	1169.7
XSECTION 8	RUNOFF	.20	6.88	---	12.30	662	3310.0
XSECTION 9	ADDHYD	.86	6.84	---	13.67	844	981.4
XSECTION 10	REACH	.86	6.79	354.79	14.03	812	944.2
XSECTION 11	RUNOFF	.24	6.98	---	12.31	775	3229.2
XSECTION 12	ADDHYD	1.10	6.82	---	12.37	1207	1097.3
XSECTION 13	RUNOFF	.38	7.22	---	12.45	1050	2763.2
XSECTION 14	REACH	.38	7.21	383.03	12.62	951	2502.6
XSECTION 15	RUNOFF	.09	7.85	---	12.31	321	3566.7
XSECTION 16	ADDHYD	.47	7.21	---	12.56	1142	2429.8
XSECTION 17	RUNOFF	.07	8.80	---	12.14	414	5914.3
XSECTION 18	ADDHYD	.54	7.22	---	12.53	1232	2281.5
XSECTION 19	REACH	.54	7.17	360.30	12.83	1081	2001.9
XSECTION 20	RUNOFF	.33	8.19	---	12.21	1504	4557.6
XSECTION 21	ADDHYD	.86	7.50	---	12.24	2029	2359.3
XSECTION 22	ADDHYD	1.96	6.91	---	12.27	3120	1591.8
XSECTION 23	REACH	1.96	6.91	351.08	12.34	3091	1577.0
XSECTION 24	RUNOFF	.02	6.38	---	12.21	74	3700.0
XSECTION 25	ADDHYD	1.98	6.90	---	12.33	3149	1590.4

1
TR20 ---------- SCS -

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)

BASEFLOW IS .0 CFS

ALTERNATE 1 STORM 1

26	3113	131	12.6	77	13.5	1.00	1.00	.371	.589	.06
26	1954	5	13.4	4	14.1	.21	1.66	.022	.955	.10
7	2088	64	15.9	64	16.1	.82	1.26	.018	.992	.20
10	3852	71	12.4	68	16.4	.60	1.50	.011	.967	.19
14	2484	129	12.5	121	12.6	.81	1.47	.033	.940	.35
19	4092	176	12.6	132	13.1	1.06	1.12	.247	.746	.09
23	586	417	12.3	395	12.4	.95	1.14	.016	.947	.52

ALTERNATE 1 STORM 2

26	3113	199	12.6	113	13.4	1.00	1.00	.408	.568	.06
26	1954	7	13.3	7	13.9	.21	1.66	.018	.964	.12
7	2088	106	14.9	102	15.3	1.08	1.11	.044	.964	.15
10	3852	110	15.2	109	15.4	.64	1.47	.011	.985	.21
14	2484	189	12.5	153	12.8	.75	1.23	.133	.812	.17
19	4092	213	12.6	170	13.1	1.08	1.11	.215	.797	.09
23	586	599	12.3	577	12.4	.75	1.19	.013	.964	.57

ALTERNATE 1 STORM 10

26	3113	431	12.5	238	13.4	1.00	1.00	.459	.552	.06
26	1954	21	12.9	20	13.3	.21	1.65	.016	.957	.18
7	2088	255	14.3	250	14.6	.67	1.24	.030	.981	.21
10	3852	271	14.5	252	15.1	.42	1.27	.066	.930	.09
14	2484	397	12.4	332	12.7	.57	1.27	.118	.836	.19
19	4092	442	12.6	361	13.0	.88	1.16	.192	.817	.10
23	586	1164	12.3	1138	12.4	.49	1.27	.007	.978	.67?

ALTERNATE 1 STORM 50

26	3113	816	12.4	414	13.3	1.00	1.00	.519	.508	.06
26	1954	44	12.8	43	13.1	.22	1.64	.014	.968	.23

1
TR20 ---------- SCS
-
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1 STORM 50											
7	2088		509	13.8	500	13.9	.58	1.28	.027	.982	.24
10	3852		542	13.9	513	14.3	.26	1.37	.049	.946	.12
14	2484		698	12.4	615	12.6	.37	1.36	.078	.881	.24
19	4092		803	12.6	690	12.9	.47	1.30	.135	.859	.14
23	586		2008	12.3	1982	12.4	.38	1.32	.005	.987	.76?
ALTERNATE 1 STORM 98											
26	3113		1111	12.4	506	13.3	1.00	1.00	.581	.455	.06
26	1954		54	12.8	53	13.1	.22	1.64	.012	.979	.25
7	2088		645	13.6	634	13.8	.59	1.27	.027	.982	.25
10	3852		691	13.7	658	14.1	.24	1.39	.044	.952	.13
14	2484		862	12.4	770	12.6	.33	1.38	.067	.893	.25
19	4092		1002	12.6	872	12.9	.40	1.32	.121	.871	.15
23	586		2537	12.3	2517	12.4	.34	1.34	.005	.992	.80?
ALTERNATE 1 STORM 99											
26	3113		1401	12.4	614	13.2	1.00	1.00	.609	.438	.06
26	1954		64	12.8	63	13.1	.22	1.64	.010	.984	

```
  .26
   7   2088           783  13.6     772  13.8    .59   1.27   .026   .986
   .26
  10   3852           844  13.6     812  14.1    .22   1.40   .040   .963
  .14
  14   2484          1050  12.4     950  12.6    .30   1.40   .059   .904
  .27

  19   4092          1230  12.6    1080  12.9    .38   1.34   .111   .878
  .16
  23    586          3105  12.3    3087  12.4    .33   1.34   .004   .994
  .82?
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
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 2.04TEST
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                            SUMMARY TABLE 3
                            ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.....
   ID               (SQ MI)          1         2        10        50        98


 STRUCTURE   5          .07
 ---------------------------
    ALTERNATE    1                   5         7        21        44
    54

 STRUCTURE   4          .66
 ---------------------------
    ALTERNATE    1                  64       106       255       510
    645

 STRUCTURE   3          .66
 ---------------------------
    ALTERNATE    1                  69       110       260       514
    649

 STRUCTURE   2          .66
 ---------------------------
    ALTERNATE    1                  87       134       293       529
    662

 STRUCTURE   1          .41
 ---------------------------
    ALTERNATE    1                 131       199       432       820
    1113

 XSECTION    1          .41
 ---------------------------
    ALTERNATE    1                 223       307       596       995
    1200

 XSECTION    3          .07
```

```
 ---------------------------
    ALTERNATE    1                30        44        96       172
    213

 XSECTION    4          .47
 ---------------------------
    ALTERNATE    1                82       119       257       456
    559

 XSECTION    5          .19
 ---------------------------
    ALTERNATE    1                60        92       202       365
    457

 XSECTION    6          .66
 ---------------------------
    ALTERNATE    1                96       142       306       546
    686

 XSECTION    7          .66
 ---------------------------
    ALTERNATE    1                64       102       250       500
    634

 XSECTION    8          .20
 ---------------------------
    ALTERNATE    1                70       107       238       433
    540

 XSECTION    9          .86
 ---------------------------
    ALTERNATE    1                71       110       271       542
    691

 XSECTION   10          .86
 ---------------------------
1
 TR20 ------------------------------------------------------------------------ SCS
 -
                 Valley Mede Ultimate LU, Fair Cond, Subdivided
                 VERSION
 09/21/** All Plumtree storage, pond, bridges, diversion Plan 13 Flow 7
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                              SUMMARY TABLE 3
                              ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.....
   ID               (SQ MI)          1         2        10        50        98


 XSECTION   10          .86
 ---------------------------
    ALTERNATE    1                68       109       252       513
    658

 XSECTION   11          .24
 ---------------------------
```

ALTERNATE	1	86	129	283	509
630					

XSECTION 12 1.10

ALTERNATE	1	129	201	391	758
963					

XSECTION 13 .38

ALTERNATE	1	129	189	397	698
862					

XSECTION 14 .38

ALTERNATE	1	121	153	332	615
771					

XSECTION 15 .09

ALTERNATE	1	53	73	136	223
271					

XSECTION 16 .47

ALTERNATE	1	154	190	403	741
927					

XSECTION 17 .07

ALTERNATE	1	99	124	199	301
354					

XSECTION 18 .54

ALTERNATE	1	177	213	442	803
1002					

XSECTION 19 .54

ALTERNATE	1	132	170	361	691
872					

XSECTION 20 .33

ALTERNATE	1	288	380	671	1066
1271					

XSECTION 21 .86

ALTERNATE	1	317	437	824	1339
1684					

XSECTION 22 1.96

ALTERNATE	1	417	600	1165	2013
2547					

XSECTION 23 1.96

ALTERNATE	1	395	578	1139	1985
2521					

1
TR20 ---------- SCS

-
Valley Mede Ultimate LU, Fair Cond, Subdivided
VERSION
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2.04TEST
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	10	50	98
XSECTION 24		.02					
	ALTERNATE 1		6	10	25	47	60
XSECTION 25		1.98					
	ALTERNATE 1		400	585	1159	2021	2567
XSECTION 26		.07					
	ALTERNATE 1		4	7	20	43	53

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
STRUCTURE 5		.07	
	ALTERNATE 1		64
STRUCTURE 4		.66	
	ALTERNATE 1		783
STRUCTURE 3		.66	
	ALTERNATE 1		788
STRUCTURE 2		.66	
	ALTERNATE 1		802
STRUCTURE 1		.41	
	ALTERNATE 1		1409

```
 XSECTION    1          .41
 ---------------------------
    ALTERNATE    1                1441

 XSECTION    3          .07
 ---------------------------
    ALTERNATE    1                 260

 XSECTION    4          .47
 ---------------------------
    ALTERNATE    1                 677

 XSECTION    5          .19
 ---------------------------
    ALTERNATE    1                 559

 XSECTION    6          .66
 ---------------------------
    ALTERNATE    1                 838
1
 TR20 ---------------------------------------------------------------------- SCS
 -
                 Valley Mede Ultimate LU, Fair Cond, Subdivided
                 VERSION
 09/21/** All Plumtree storage, pond, bridges, diversion Plan 13 Flow 7
 2.04TEST
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                              SUMMARY TABLE 3
                              ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.........
   ID               (SQ MI)          99


 XSECTION    7          .66
 ---------------------------
    ALTERNATE    1                 772

 XSECTION    8          .20
 ---------------------------
    ALTERNATE    1                 662

 XSECTION    9          .86
 ---------------------------
    ALTERNATE    1                 844

 XSECTION   10          .86
 ---------------------------
    ALTERNATE    1                 812

 XSECTION   11          .24
 ---------------------------
    ALTERNATE    1                 775

 XSECTION   12         1.10
 ---------------------------
    ALTERNATE    1                1207
```

XSECTION 13 .38

ALTERNATE 1 1050

XSECTION 14 .38

ALTERNATE 1 951

XSECTION 15 .09

ALTERNATE 1 321

XSECTION 16 .47

ALTERNATE 1 1142

XSECTION 17 .07

ALTERNATE 1 414

XSECTION 18 .54

ALTERNATE 1 1232

XSECTION 19 .54

ALTERNATE 1 1081

1
TR20 ---------- SCS -
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VERSION
09/21/** All Plumtree storage, pond, bridges, diversion Plan 13 Flow 7
2.04TEST
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 99
XSECTION 20	.33	
ALTERNATE 1		1504
XSECTION 21	.86	
ALTERNATE 1		2029
XSECTION 22	1.96	
ALTERNATE 1		3120
XSECTION 23	1.96	
ALTERNATE 1		3091

```
 XSECTION   24          .02
 ---------------------------
    ALTERNATE    1                  74

 XSECTION   25         1.98
 ---------------------------
    ALTERNATE    1                3149

 XSECTION   26          .07
 ---------------------------
    ALTERNATE    1                  63
1
 TR20 ------------------------------------------------------------------------ SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/** All Plumtree storage, pond, bridges, diversion Plan 13 Flow 7
 2.04TEST



 END OF  1 JOBS IN THIS RUN
```

```
                    SCS  TR-20,  VERSION 2.04TEST
                                  FILES

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    OUTPUT = opth.OUT                                , DATED 09/21/
    **,18:20:21

             FILES GENERATED - DATED 09/21/**,18:20:21

                                NONE!


           TOTAL NUMBER OF WARNINGS =   1,  MESSAGES =   0

                     *** TR-20 RUN COMPLETED ***
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ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

Plumtree Plumtree

Legend

- WS 200-YR
- WS 100-YR
- WS 50-YR
- WS 10-YR
- WS 2-YR
- WS 1-YR
- Ground
- LOB
- ROB
- Right Levee

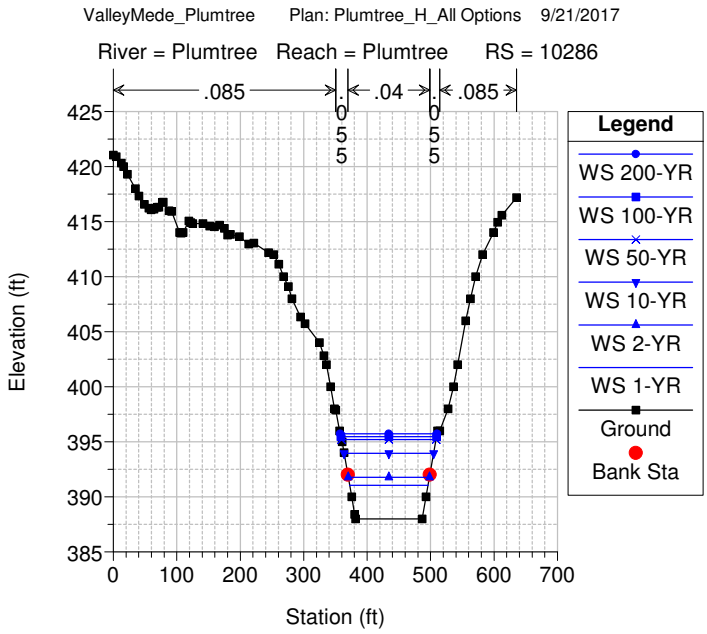
Elevation (ft)

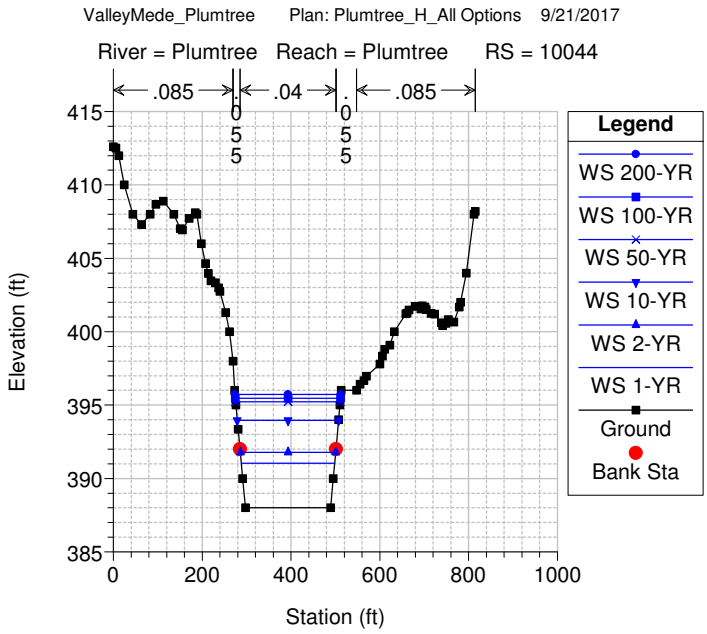
400
390
380
370
360
350
340

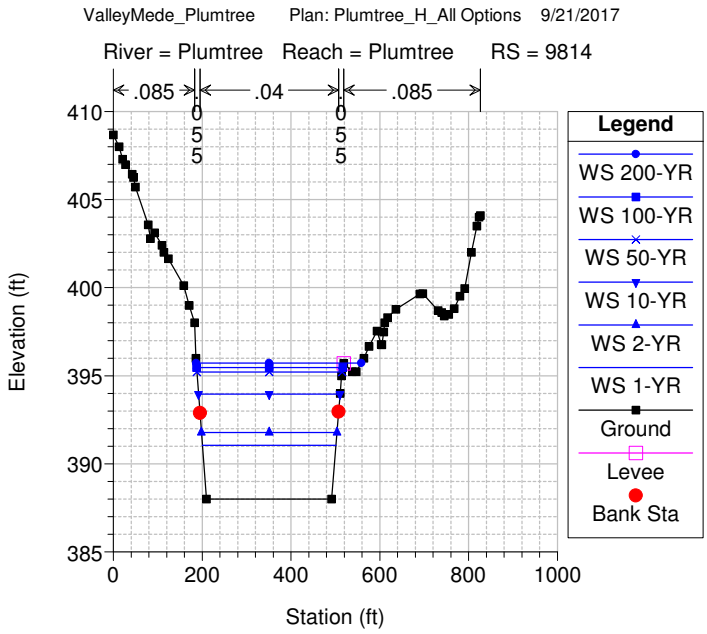
0
2000
4000
6000
8000
10000
12000

Main Channel Distance (ft)

380 526 762 911 1124 1291 1463 1641 1830 1994 2153 2331 2485 2589 2759 2900 Frederick Rd 2978 3077 3179 3296 3428 3550 3688 3816 3930 4033 4185 4289 4400 US 40 4636 4745 4845 5000 Longview Dr 5107 5209 5323 5419 5560 5650 Brookmede Rd 5824 5926 6028 6122 6250 Hearthstone Rd 6350 6454 6568 6663 6766 6893 7030 7100 Weir 2 7367 7548 7800 7954 8094 8229 8374 8579 8753 8987 9196 9301 9398 9499 9650 Michaels Way 9814 10044 10286


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 10286
.085
.04
.085
.055
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 10044
.085
.04
.085
.055
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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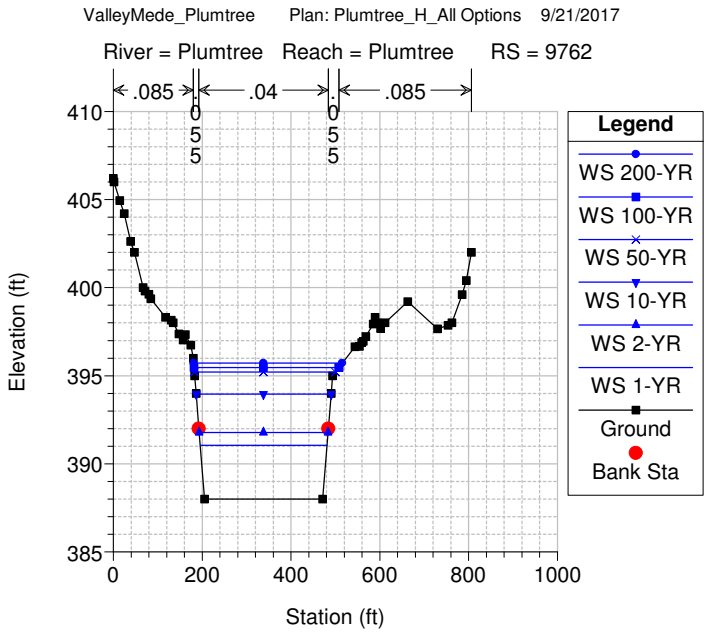
River = Plumtree Reach = Plumtree RS = 9814
.085
.04
.085
.055
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)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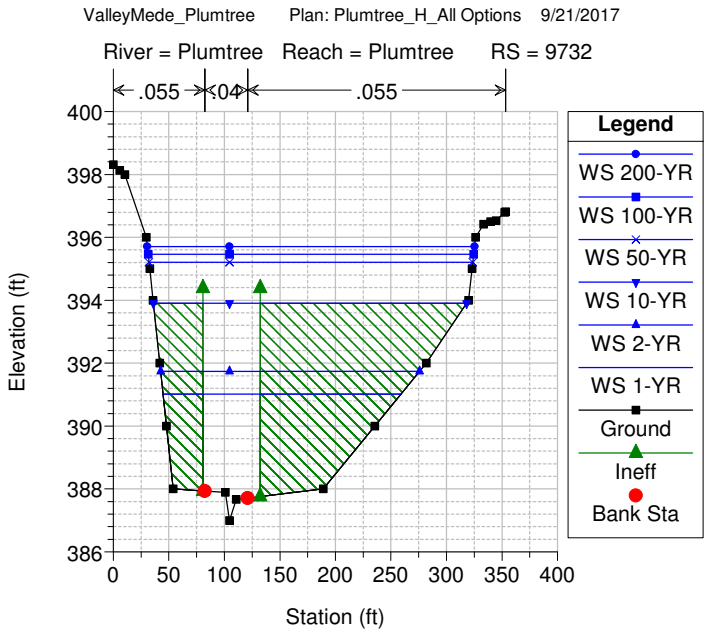
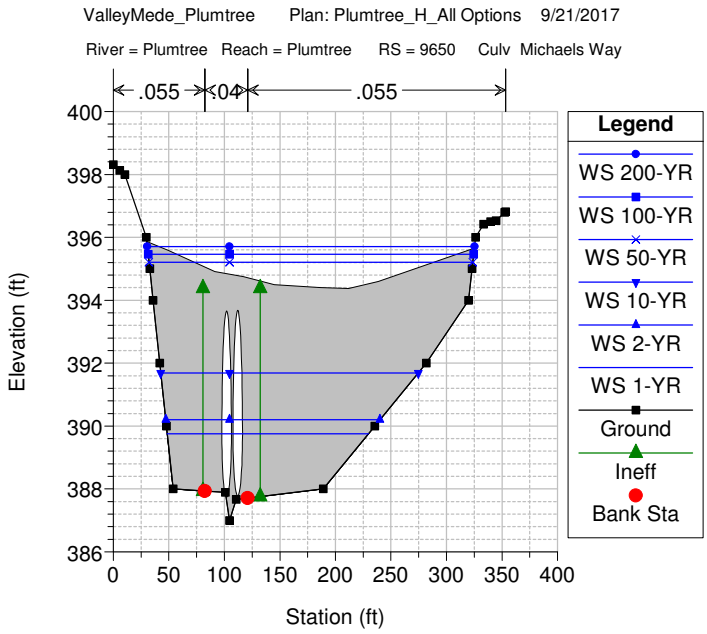
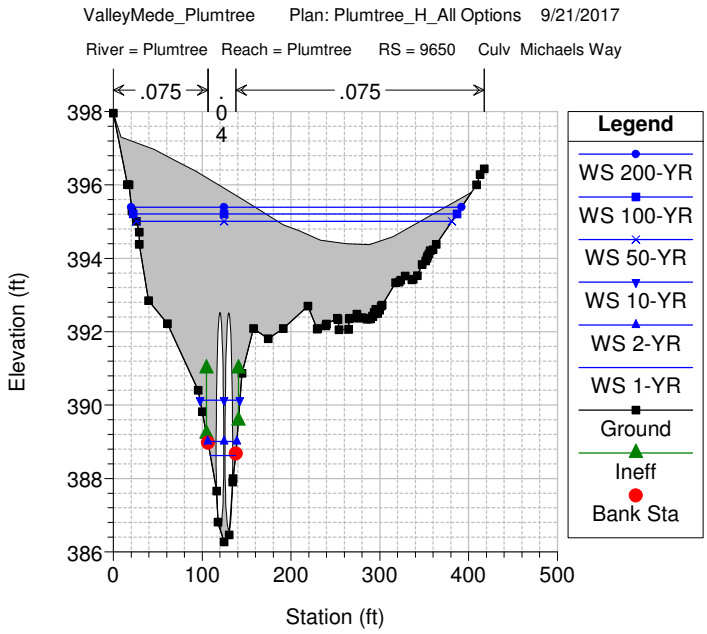
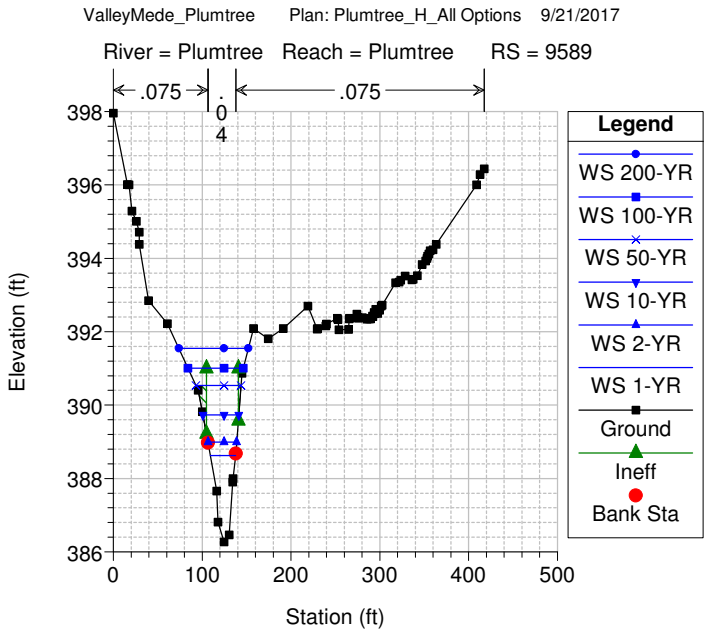
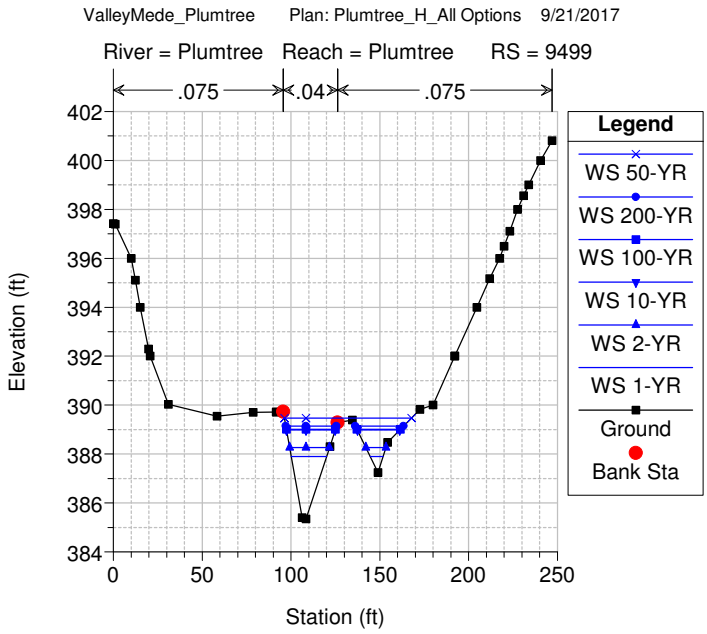
.085
.04
.085
.055
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

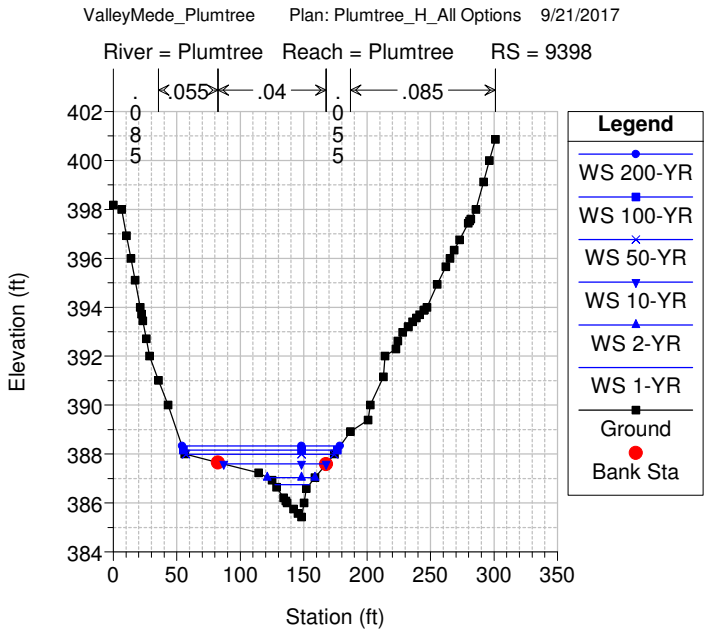

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 9732
.055
.04
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

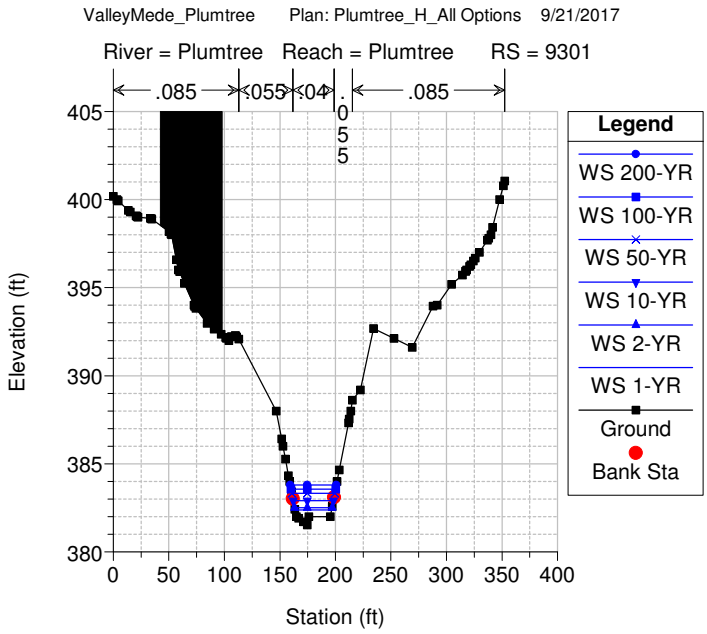

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.055
.04
.055
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

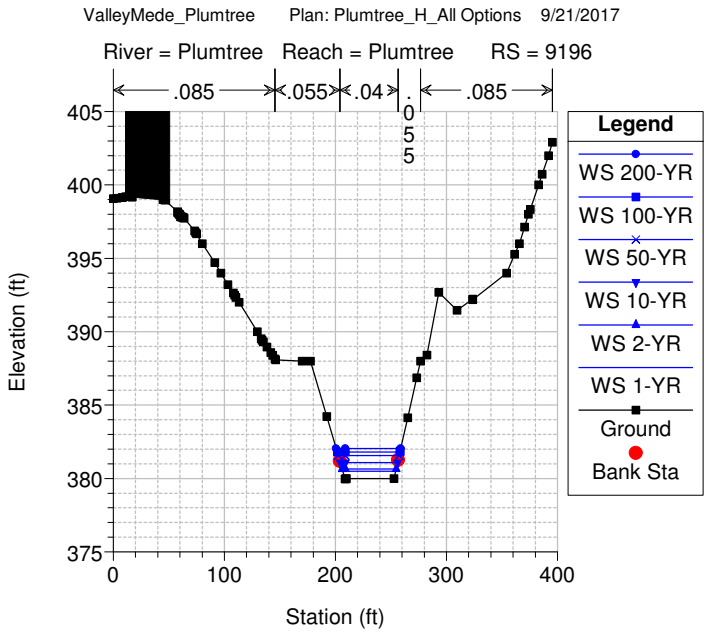

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

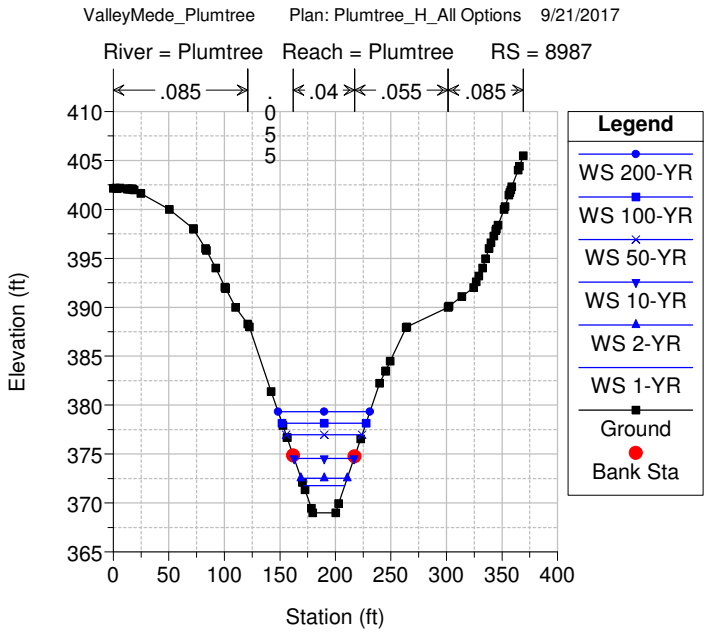

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 9589
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

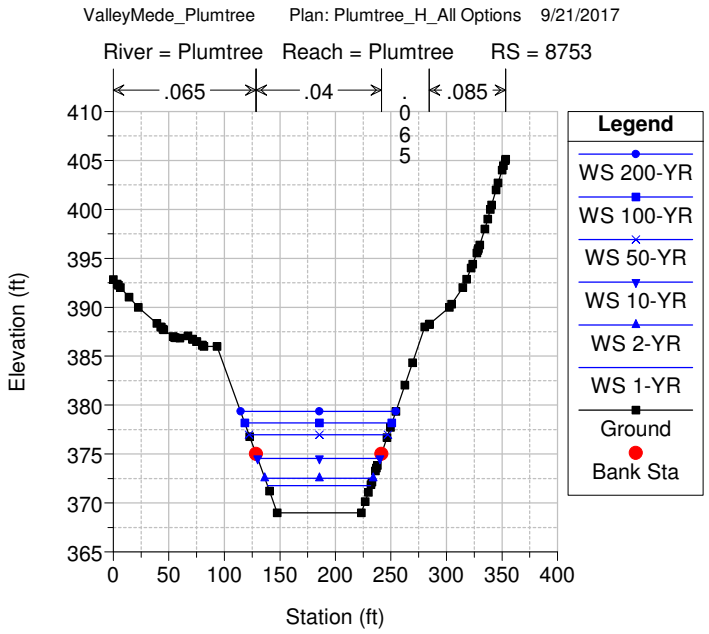

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 9499
.075
.04
.075
Legend
WS 50-YR
WS 200-YR
WS 100-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

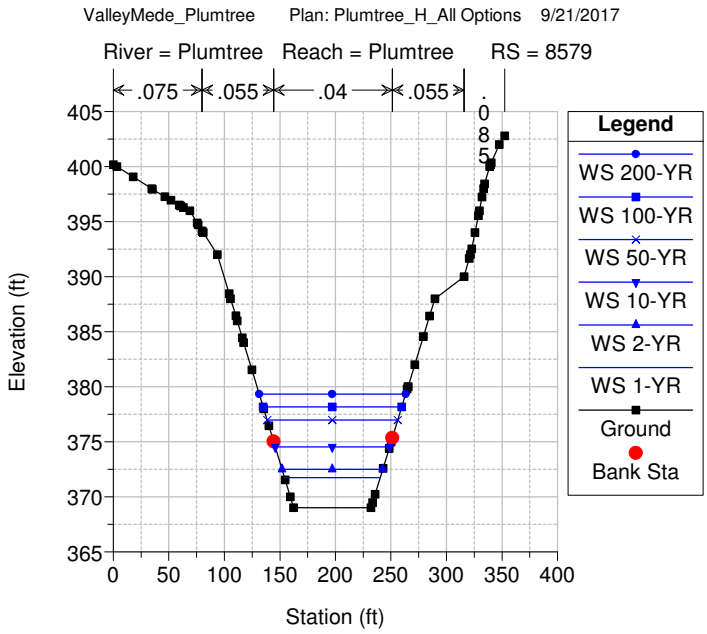

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 9398
.085
.055
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

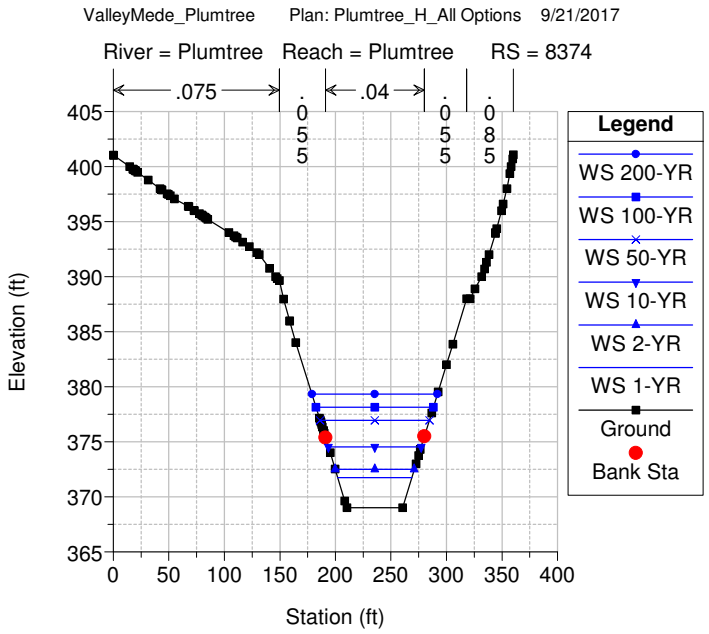

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 9301
.085
.055
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

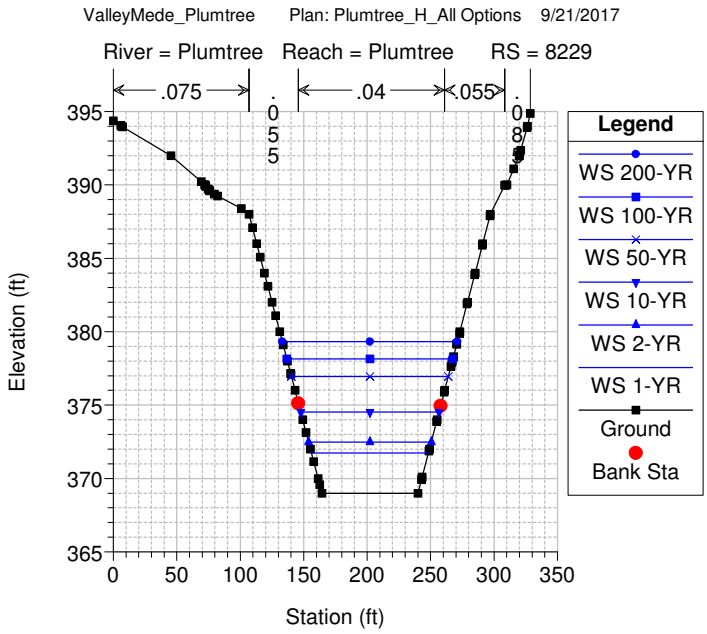

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 9196
.085
.055
.04
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

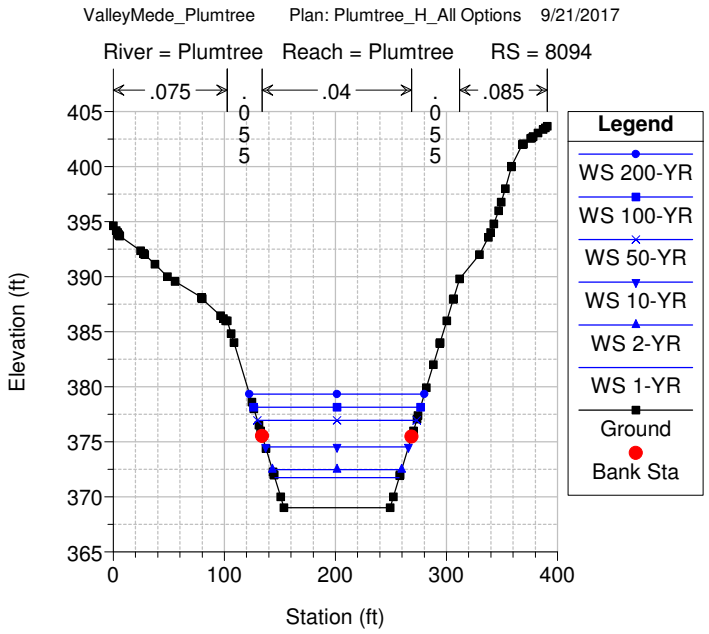

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 8987
.085 .055 .04 .055 .085
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

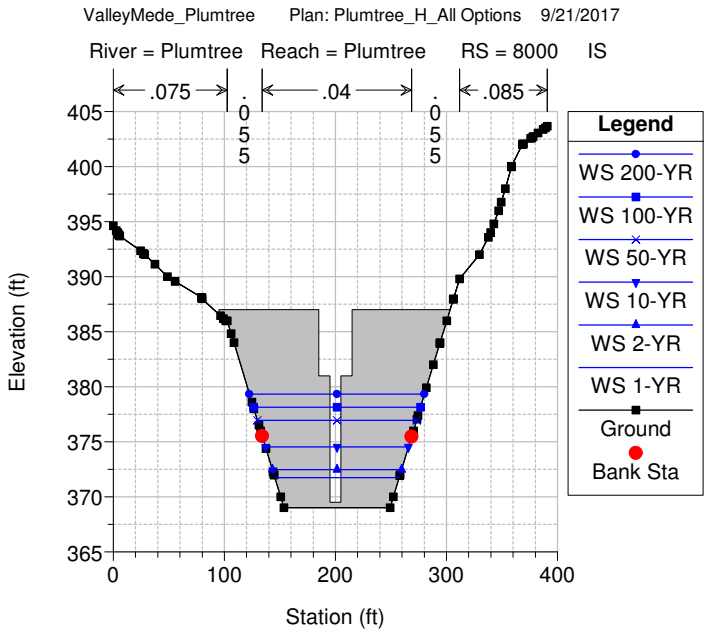

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 8753
.065 .04 .085
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

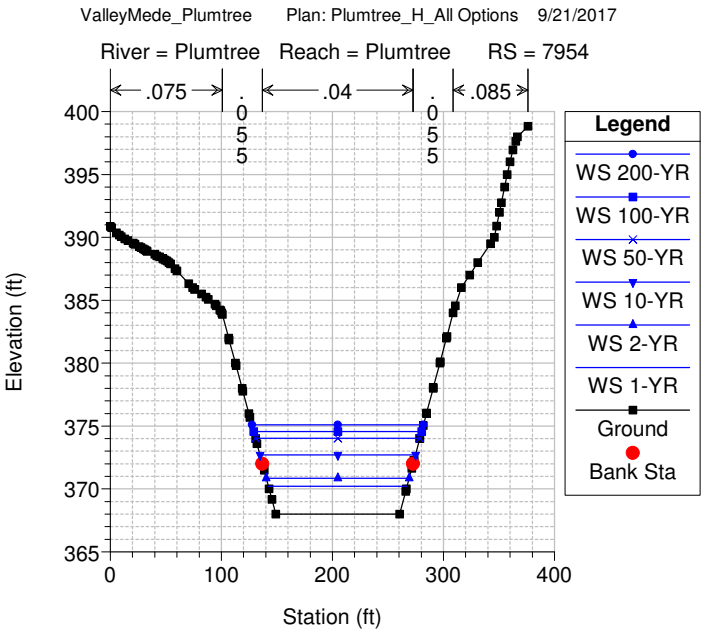

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 8579
.075 .055 .04 .055
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

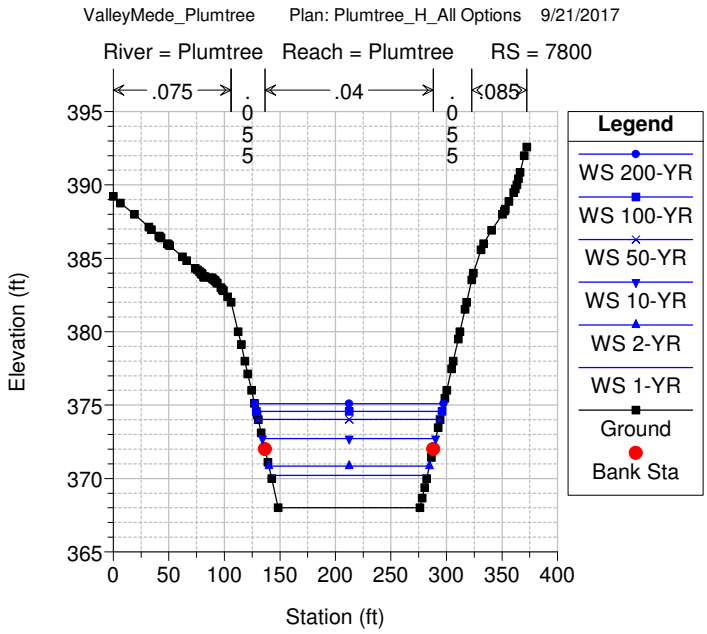

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 8374
.075 .04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

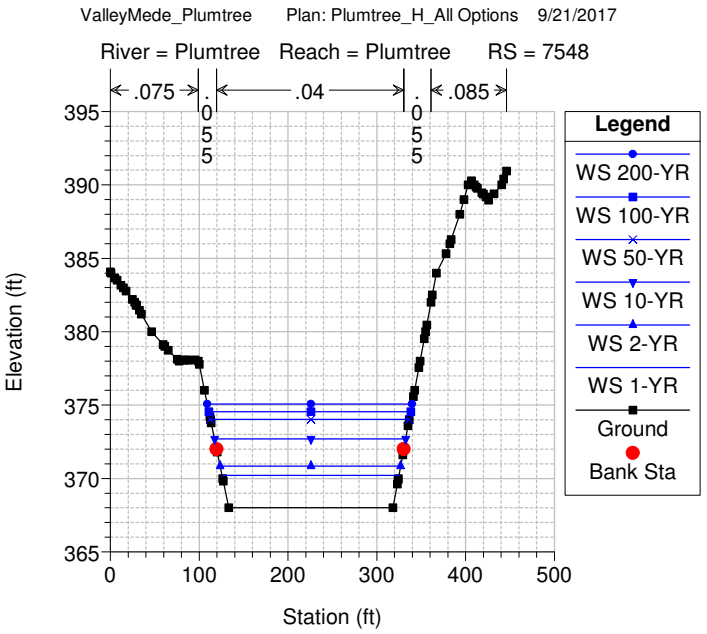

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 8229
.075 .04 .055
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

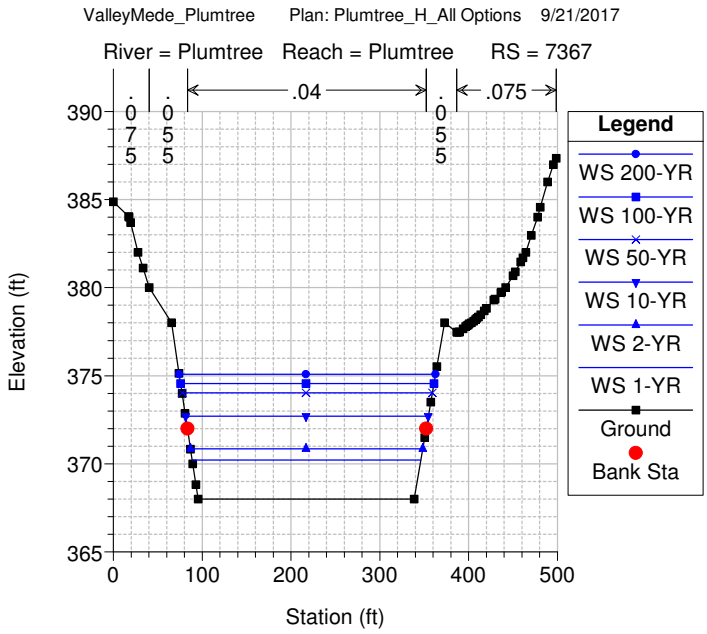

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 8094
.075 .04 .085
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

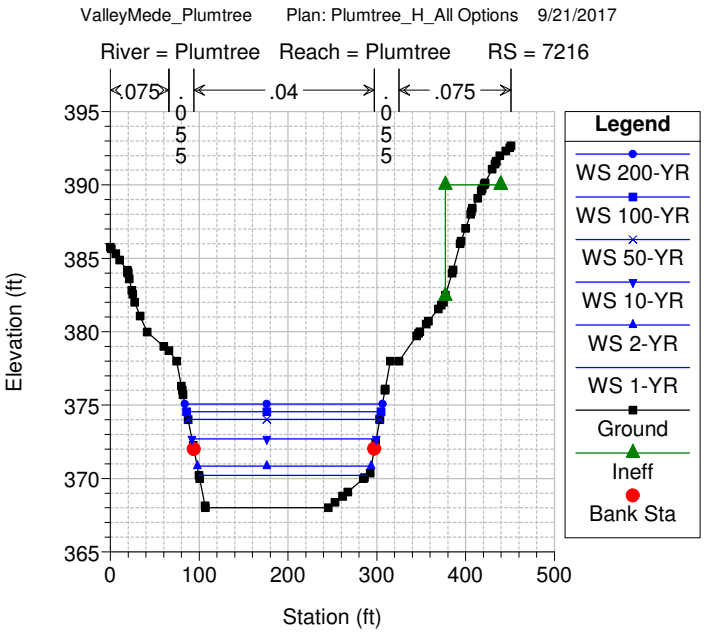

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 8000 IS
.075
.055
.04
.055
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

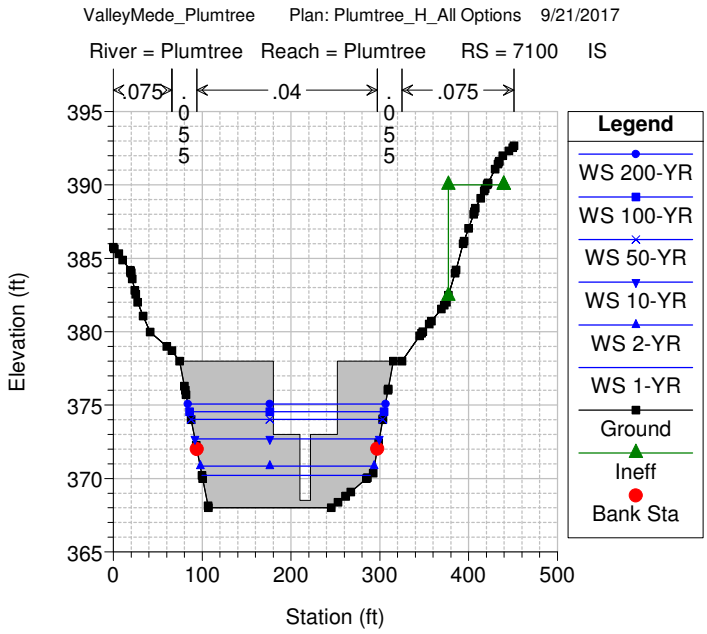

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 7954
.075
.055
.04
.055
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

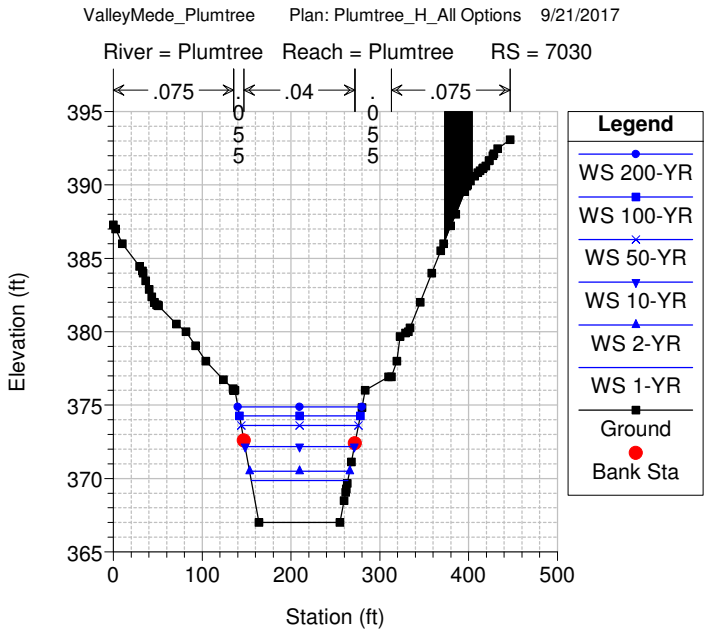

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 7800
.075
.055
.04
.055
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

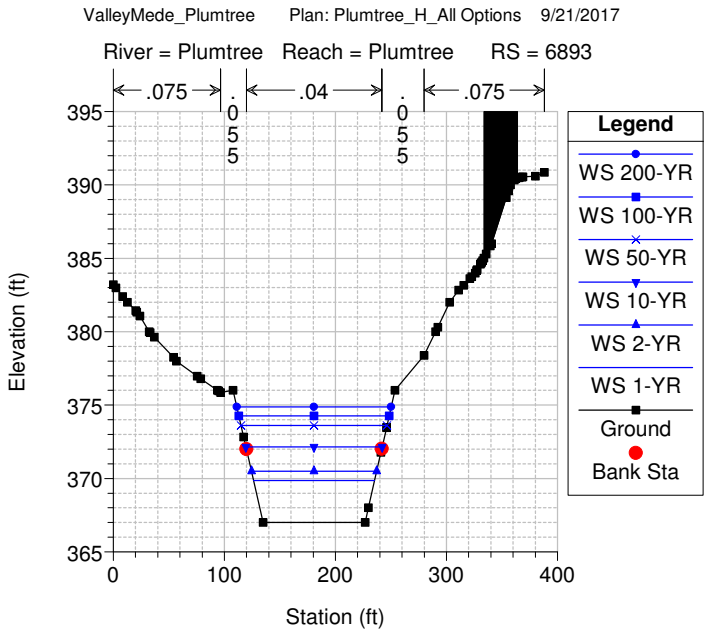

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 7548
.075
.055
.04
.055
.085
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

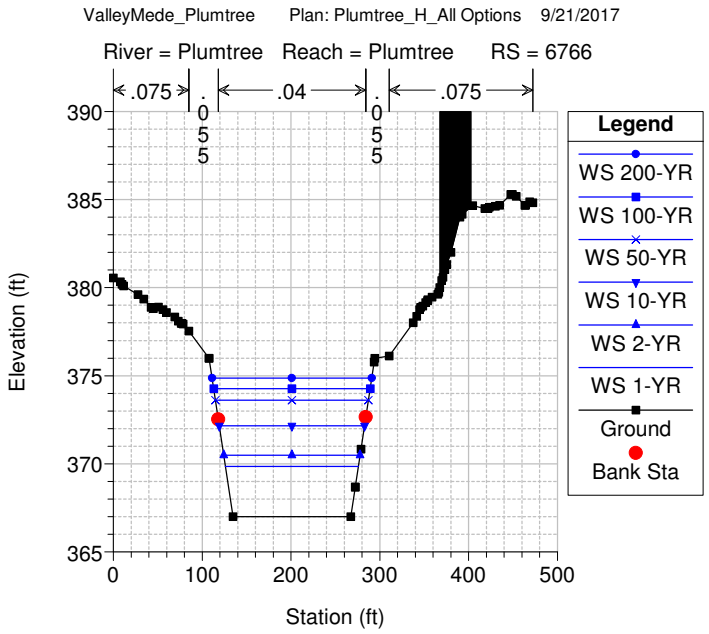

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 7367
.075
.055
.04
.055
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

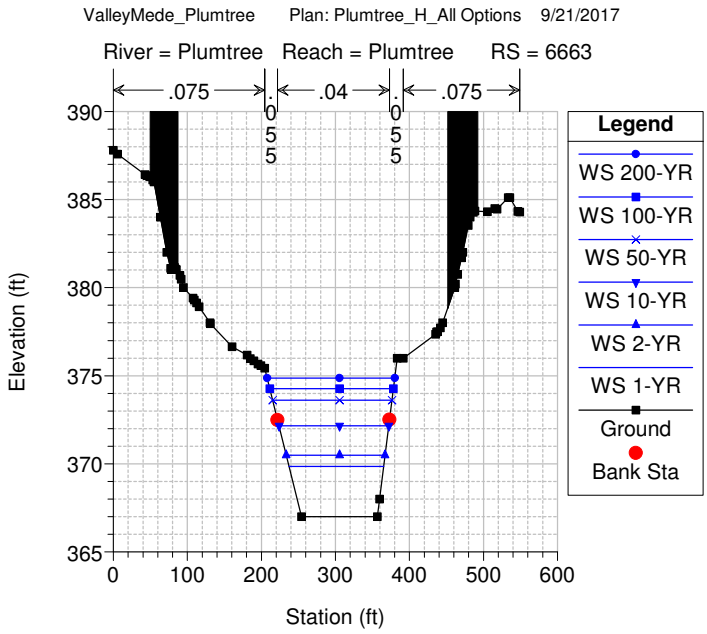

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 7216
.075
.055
.04
.055
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

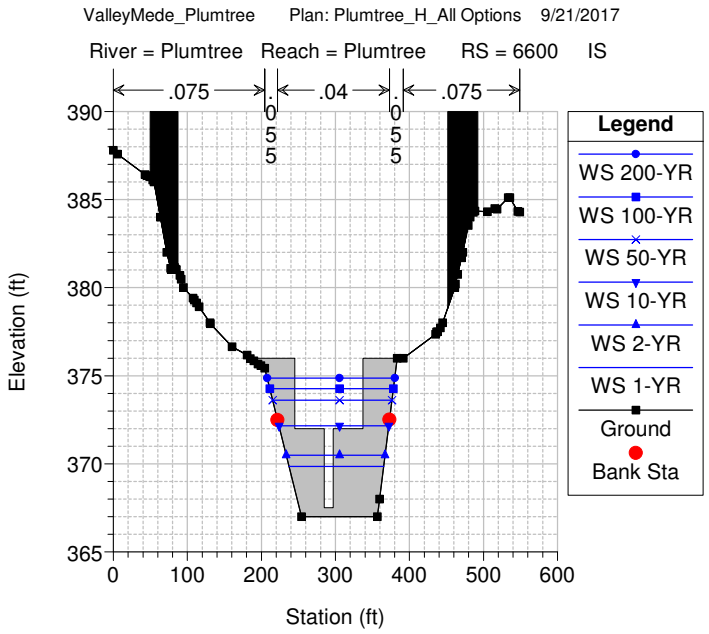

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 7100 IS
.075
.055
.04
.055
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

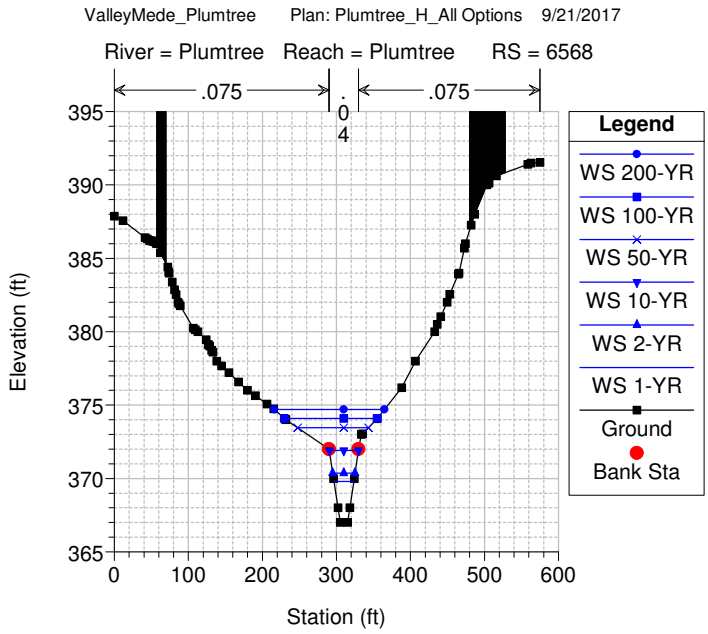

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 7030
.075
.055
.04
.055
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

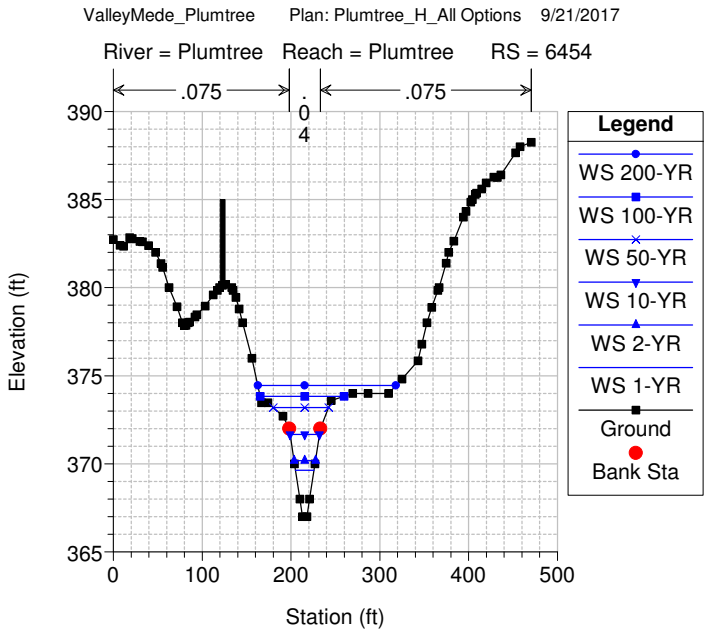

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6893
.075
.055
.04
.055
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

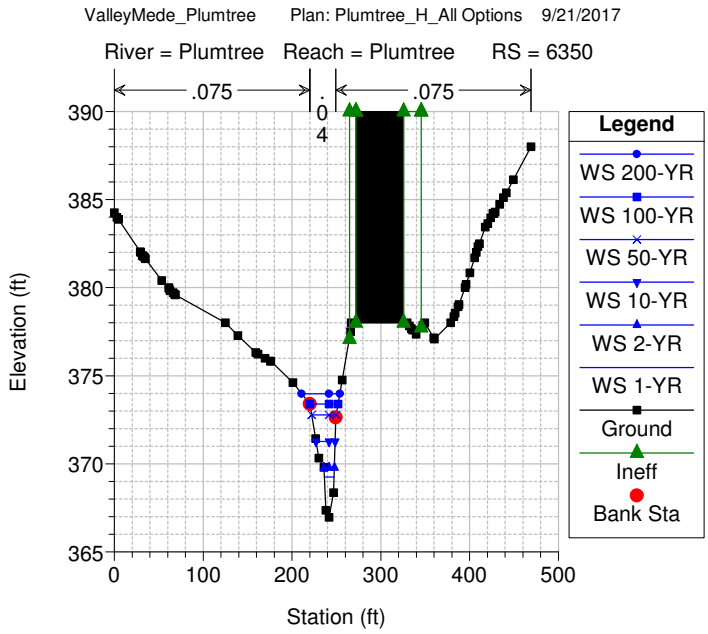

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6766
.075
.055
.04
.055
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

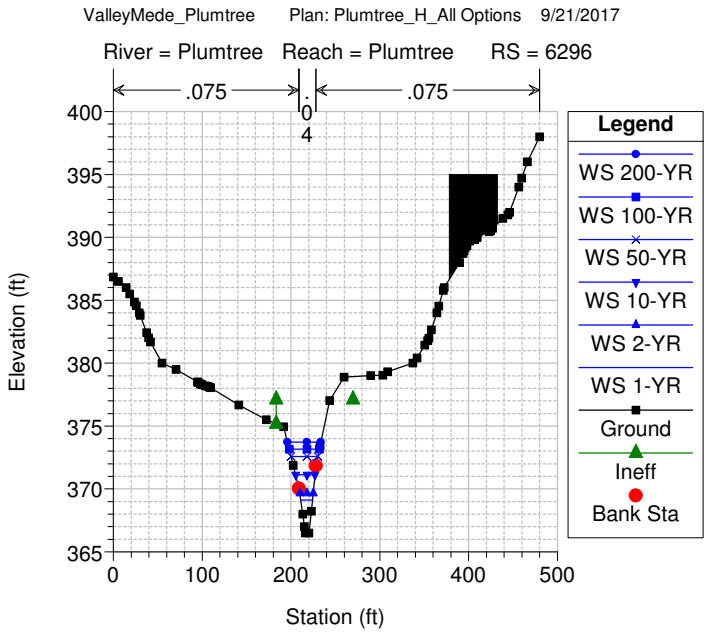

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6663
.075
.055
.04
.055
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

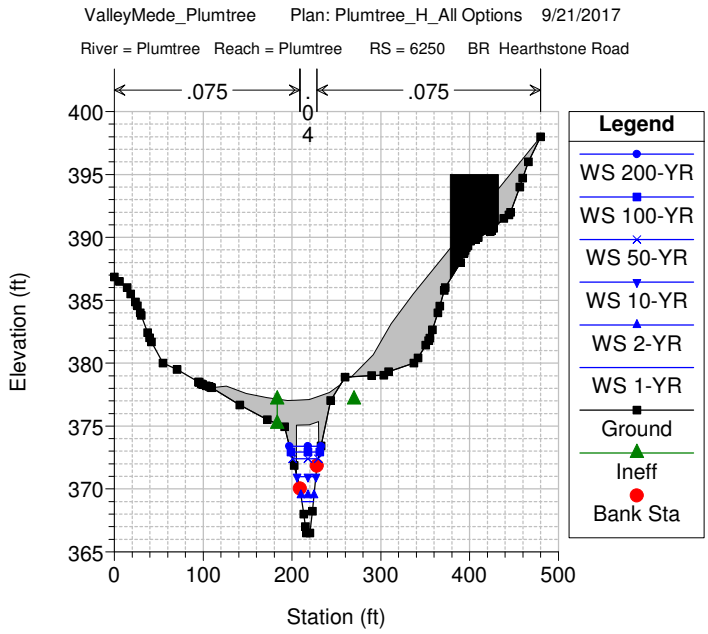

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6600 IS
.075
.055
.04
.055
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

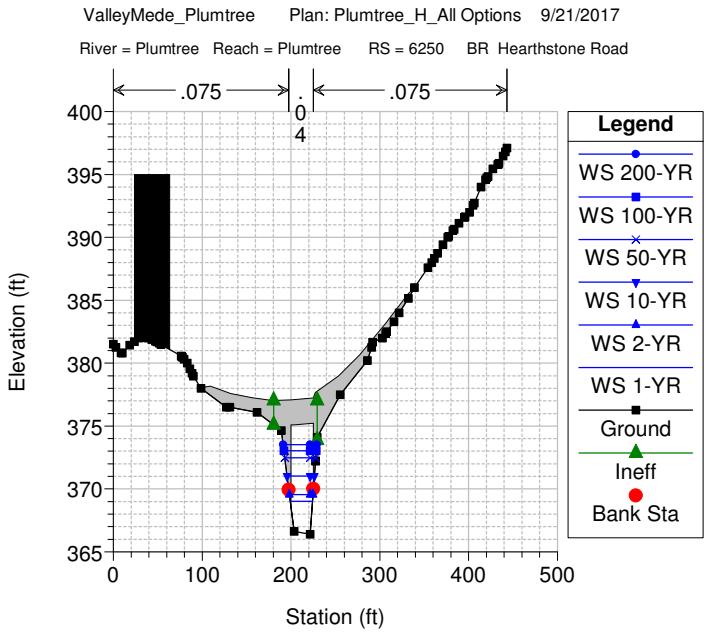

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6568
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

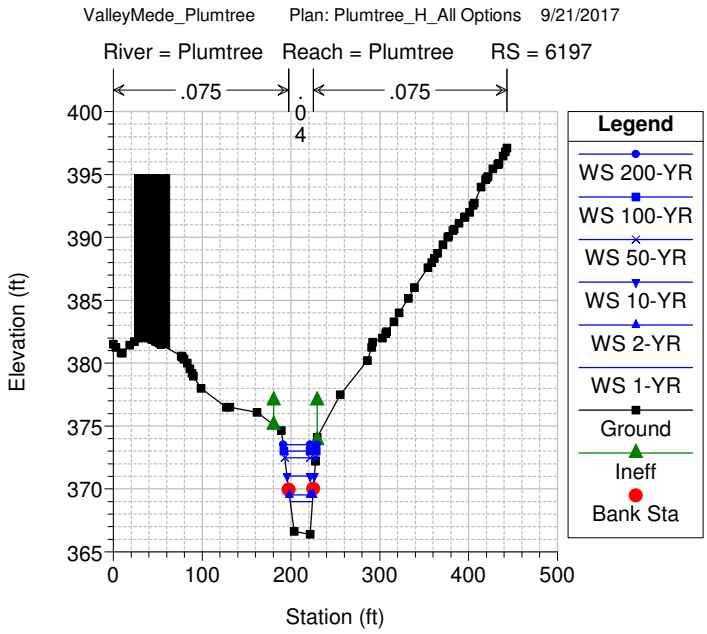

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6454
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

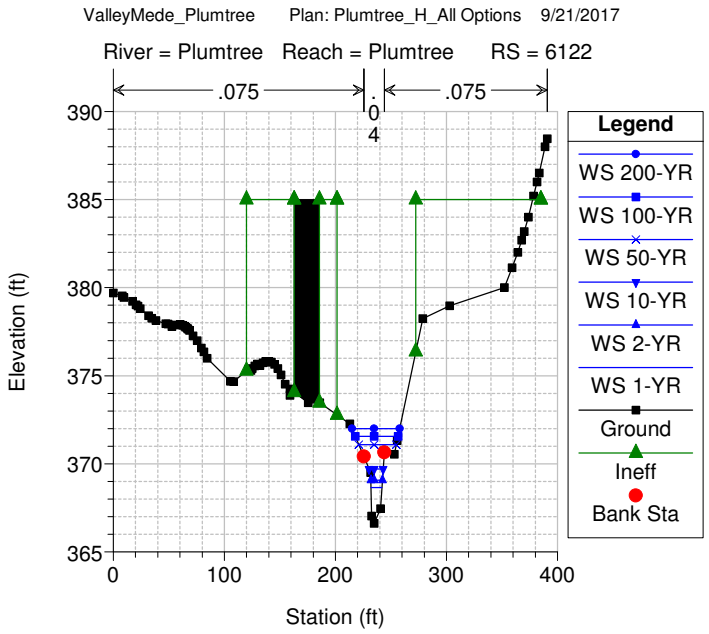

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6350
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

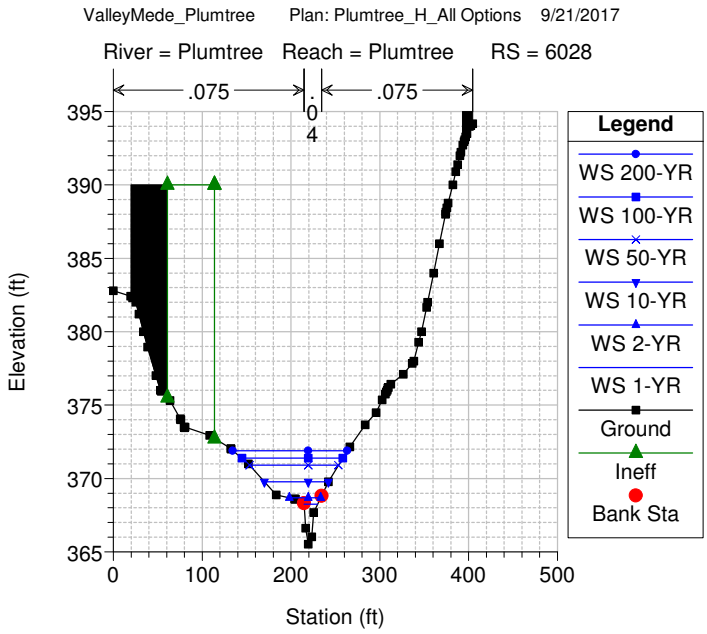

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6296
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

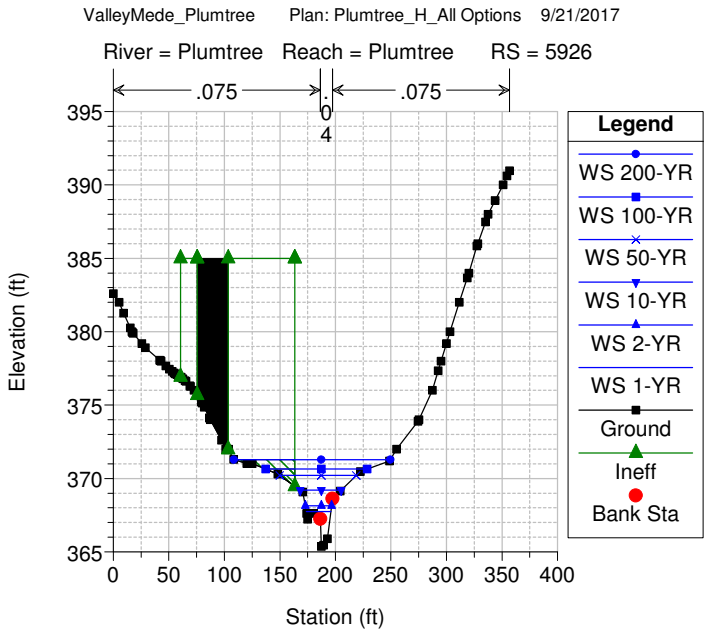

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6250 BR Hearthstone Road
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

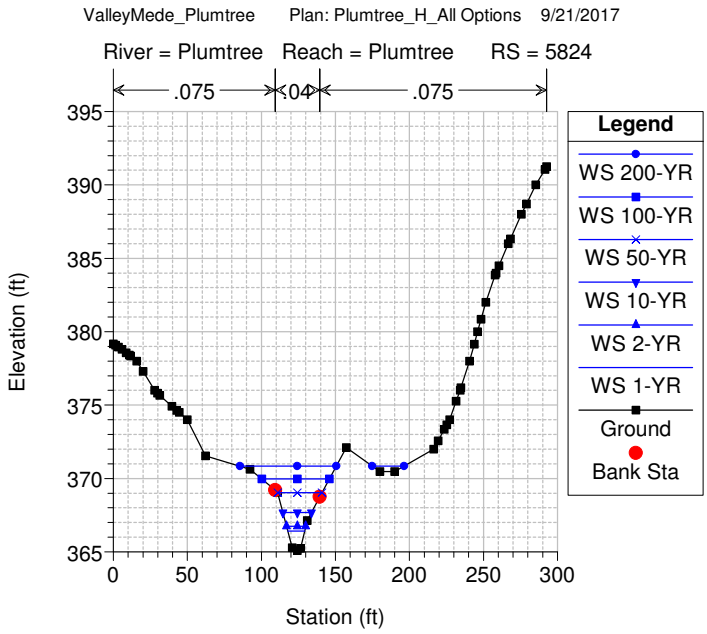

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6250 BR Hearthstone Road
.075
.
0
4
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

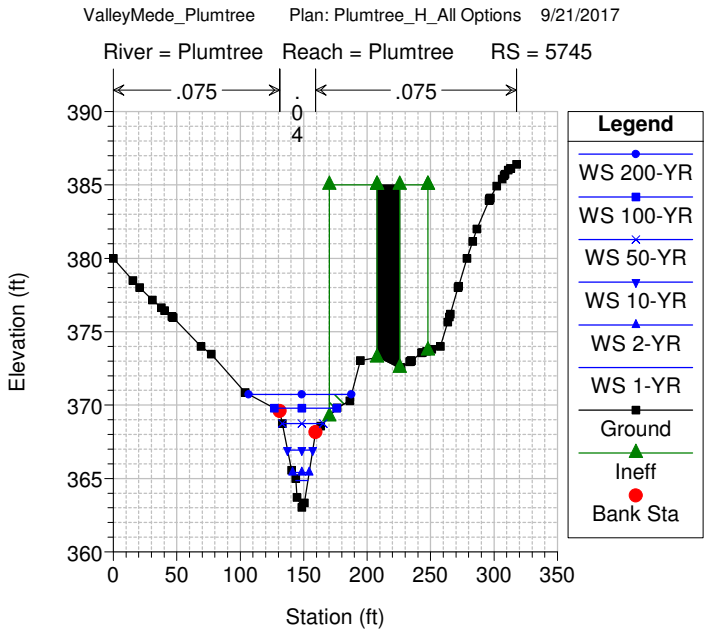

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6197
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

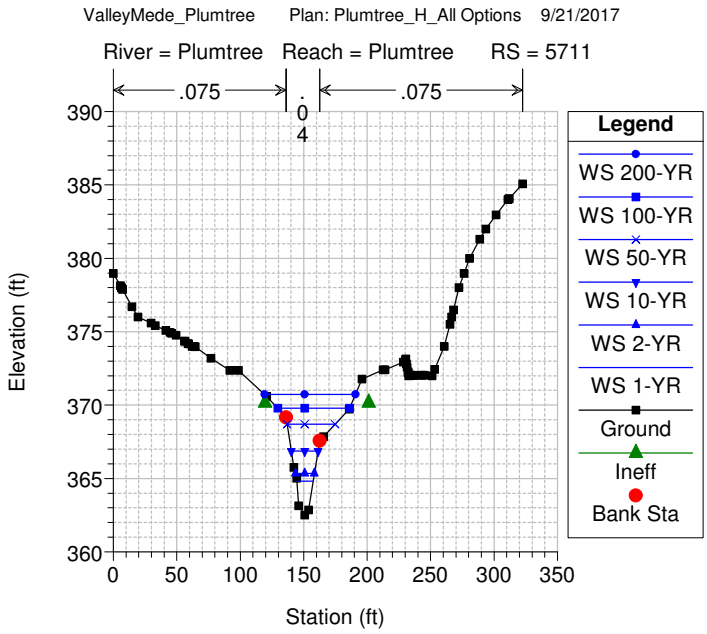

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6122
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

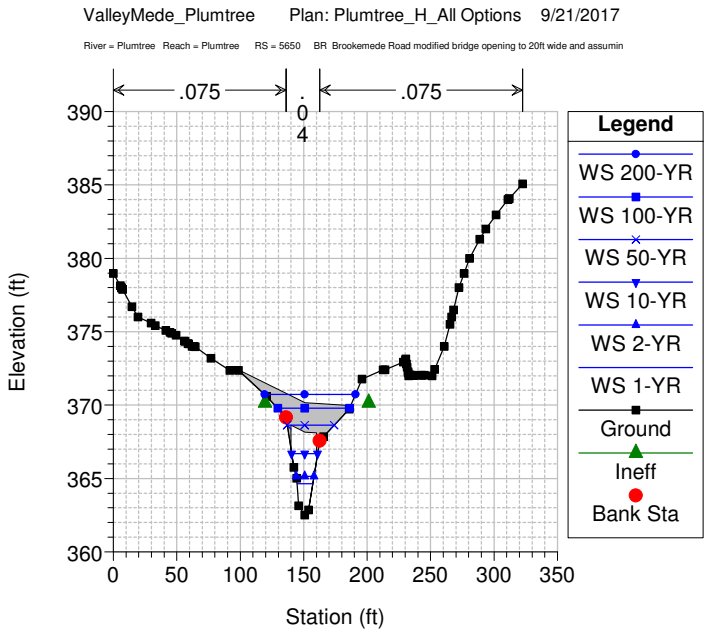

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 6028
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

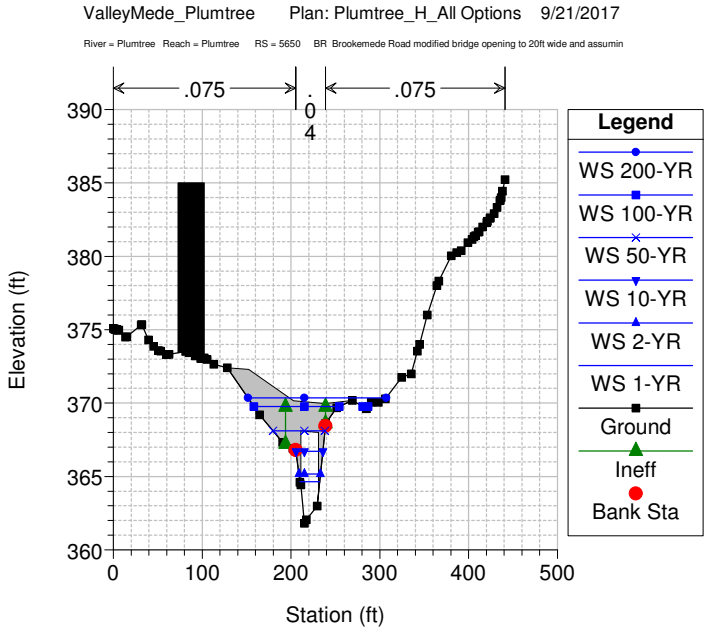

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5926
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

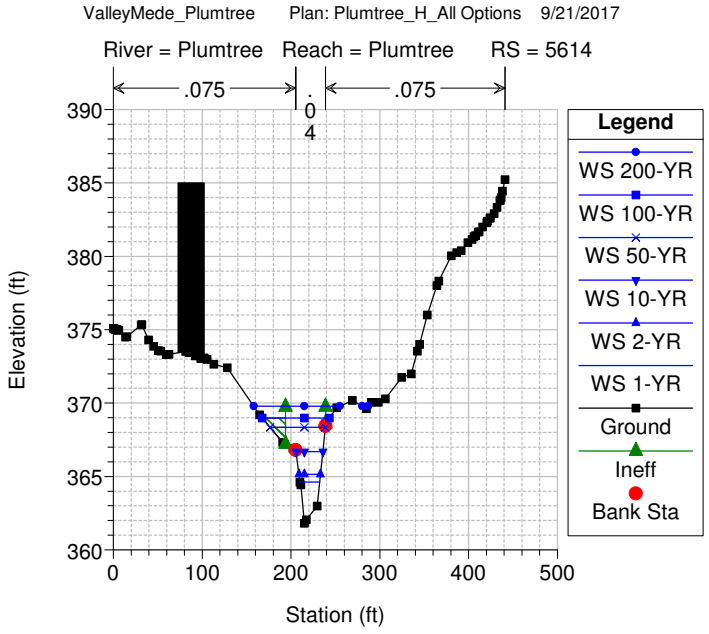

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5824
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

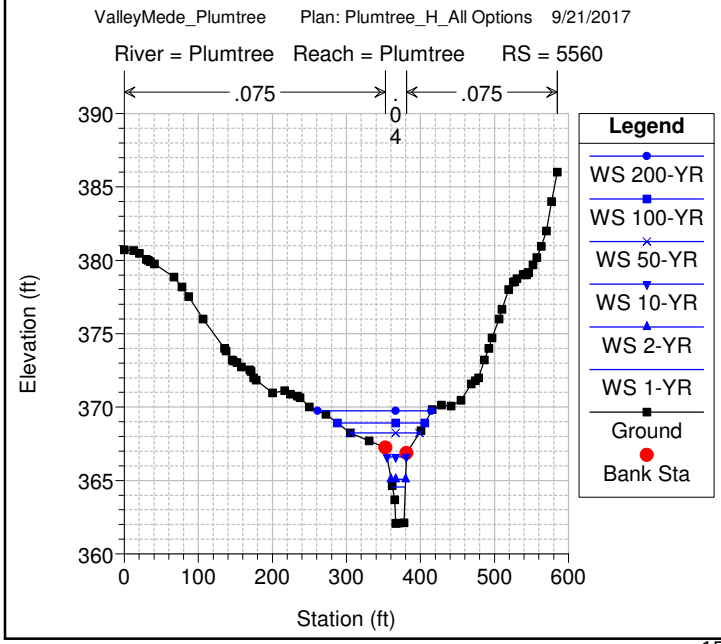

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5745
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

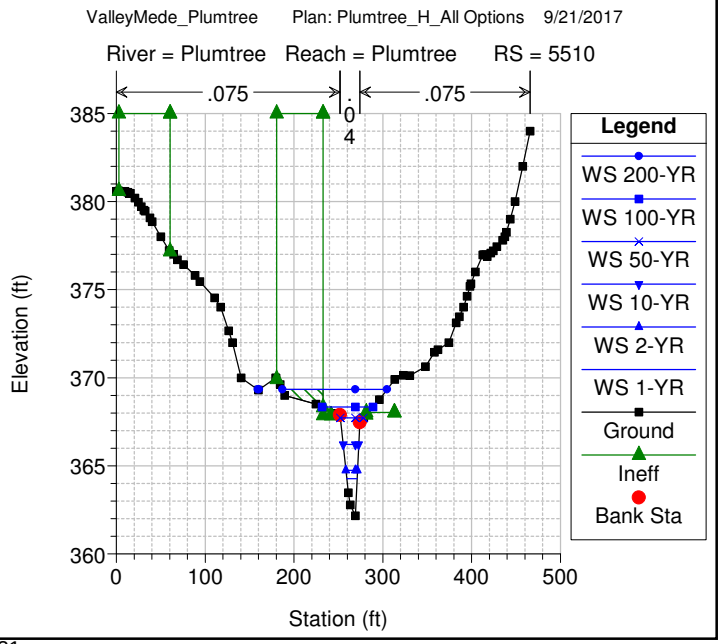

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5711
.075
.075
.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

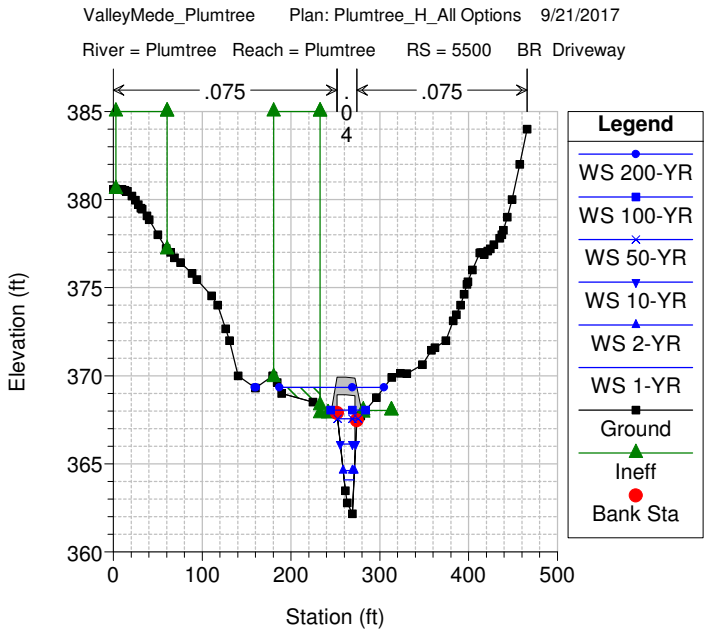

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5650 BR Brookemede Road modified bridge opening to 20ft wide and assumin
.075
.075
.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

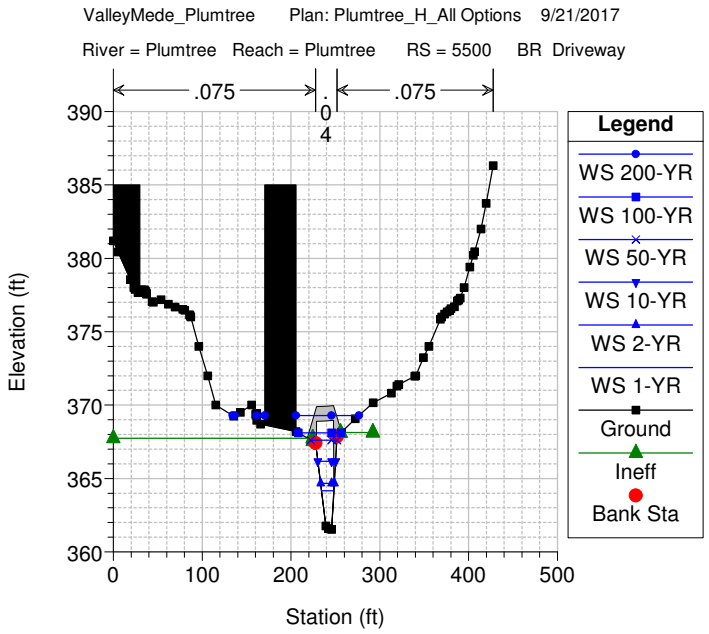

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5650 BR Brookemede Road modified bridge opening to 20ft wide and assumin
.075
.075
.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

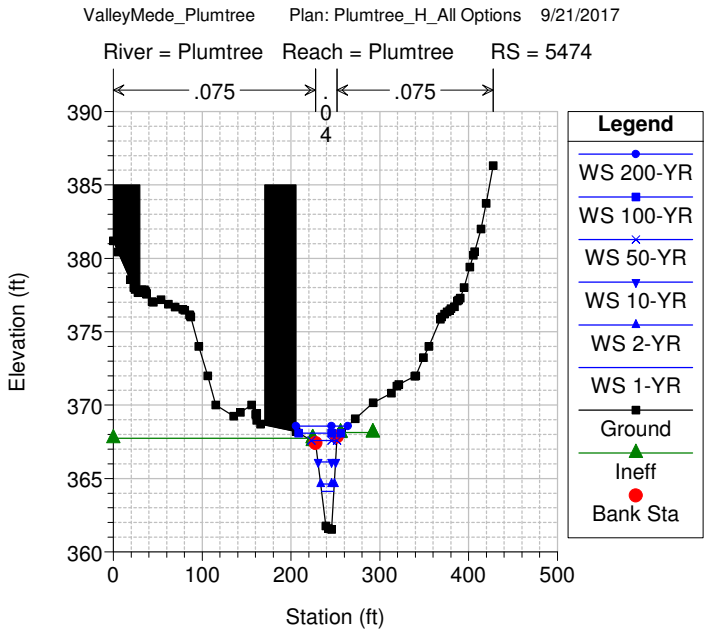

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5614
.075
.075
.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

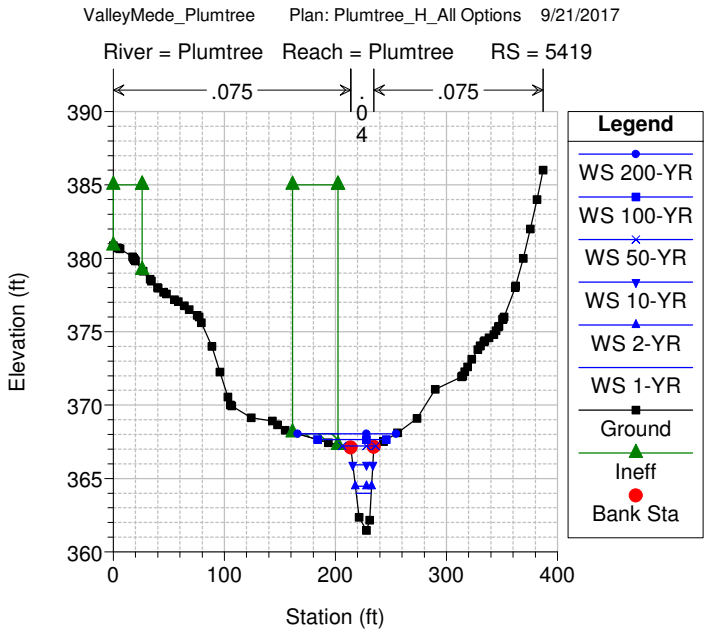

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5560
.075
.075
.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

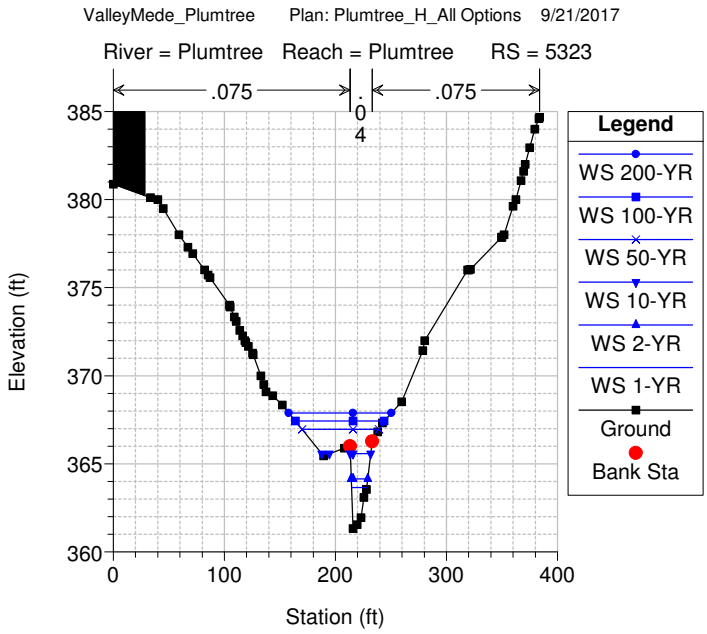

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5510
.075
.075
.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

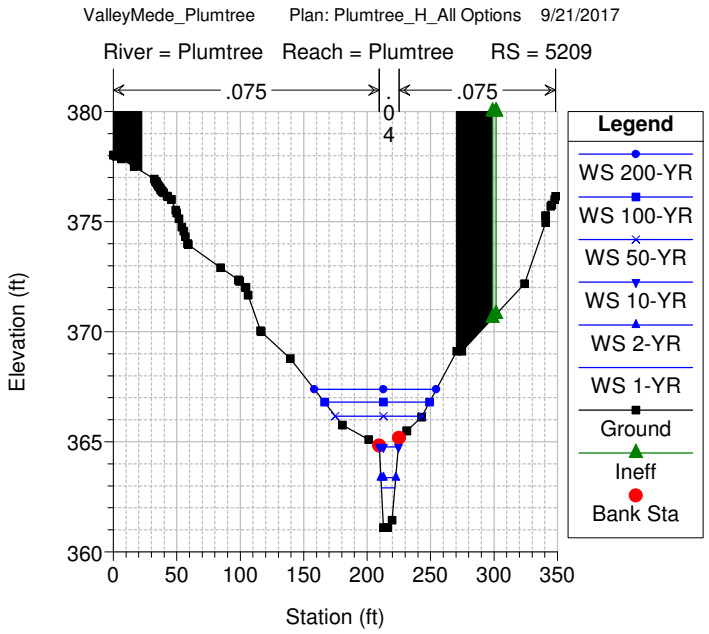

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5474
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

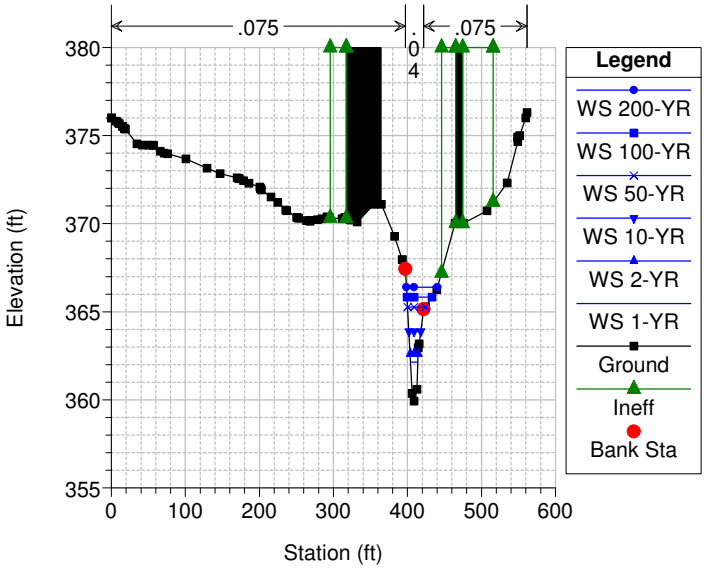

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5419
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5323
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 5209
.075
.075
.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

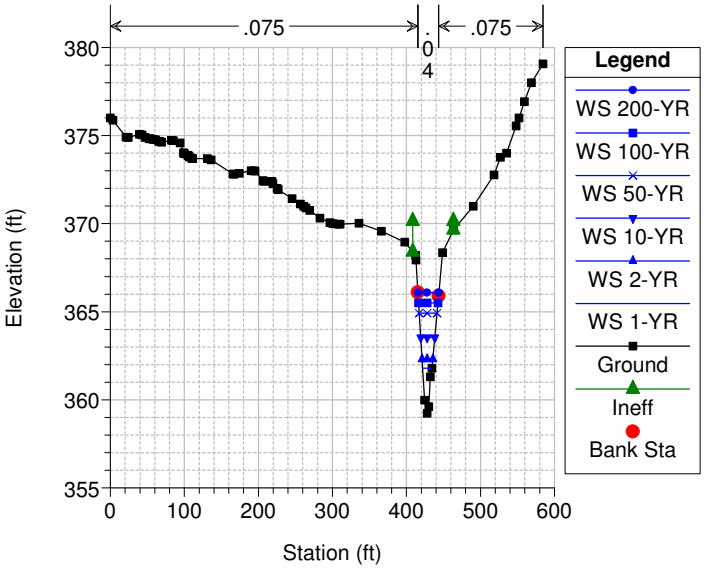
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 5107



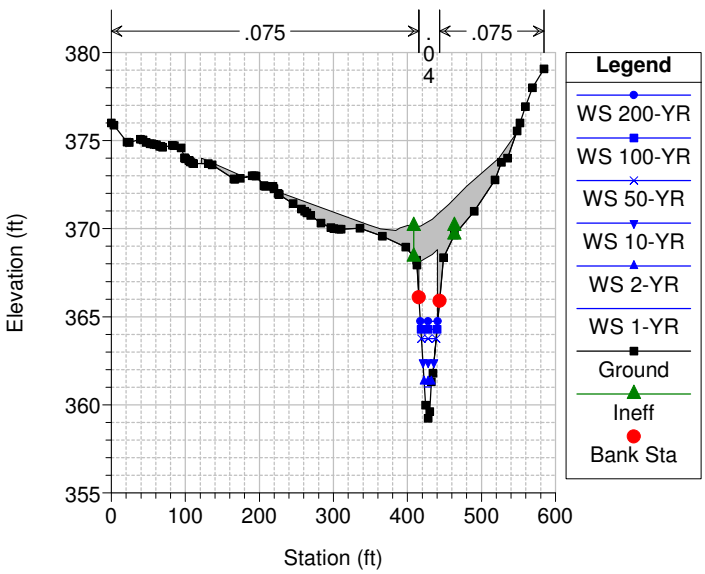
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 5040



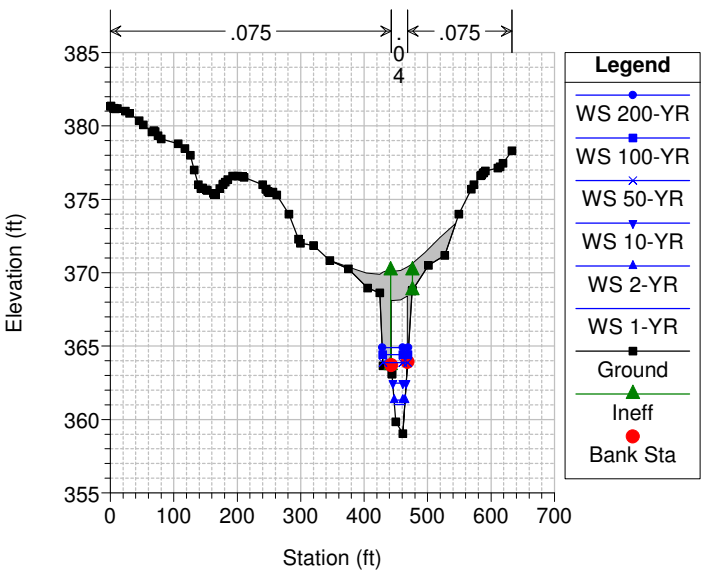
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 5000 BR Longview Drive - Modified to 25' wide opening and assuming a 2'



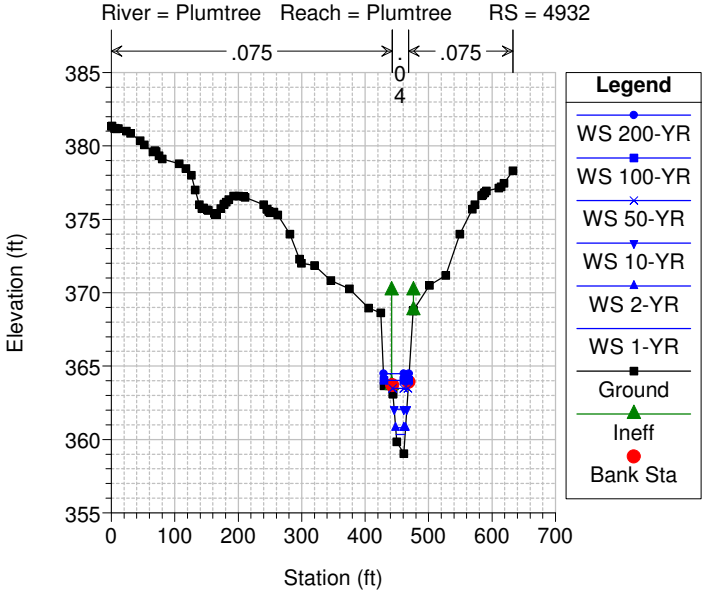
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 5000 BR Longview Drive - Modified to 25' wide opening and assuming a 2'



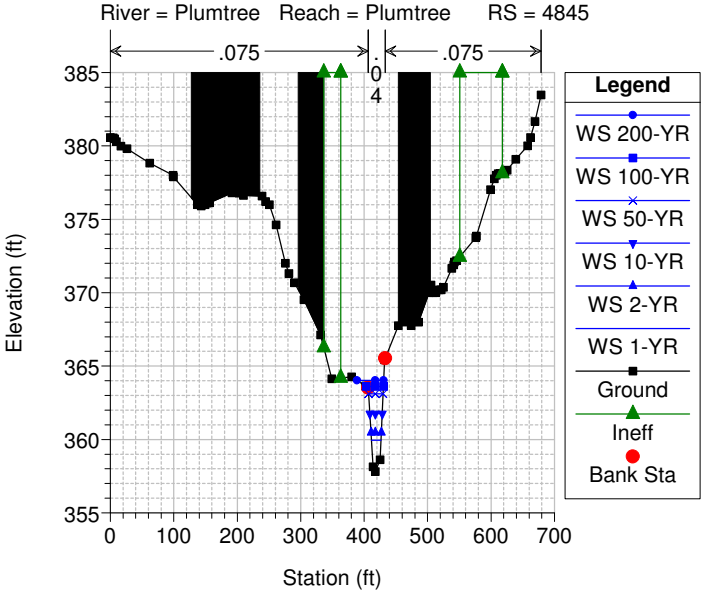
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

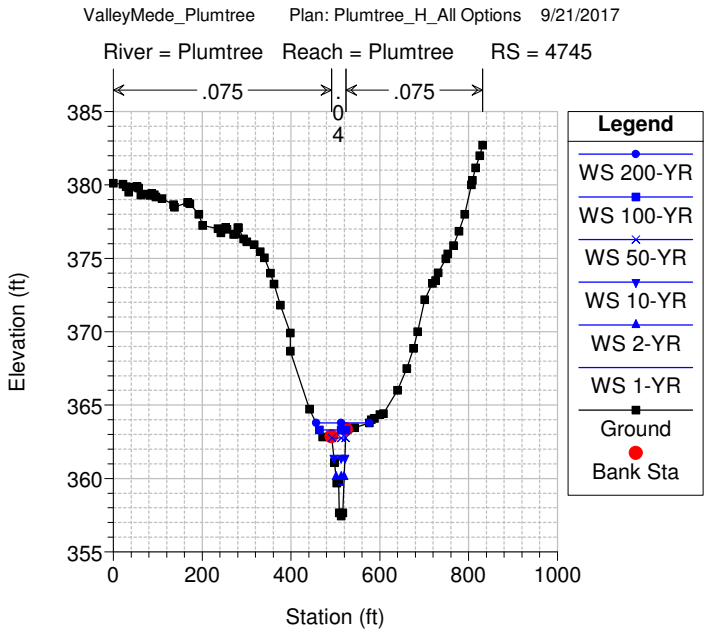
River = Plumtree Reach = Plumtree RS = 4932

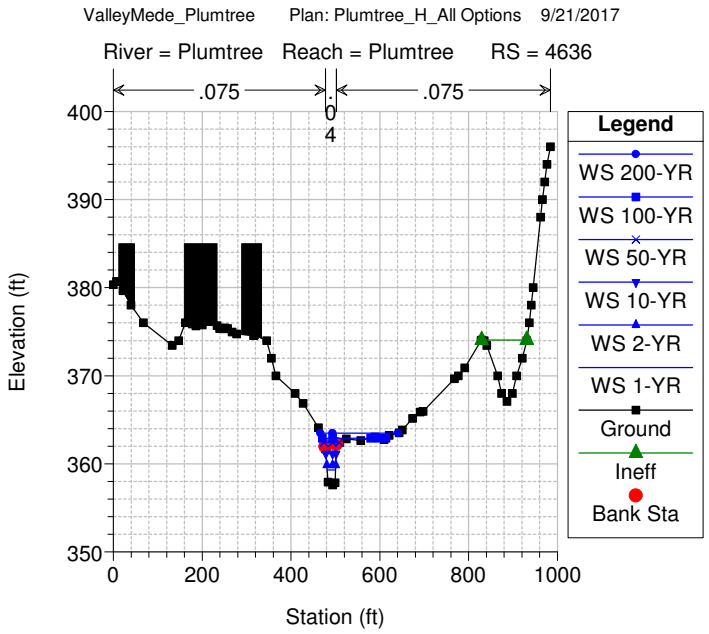


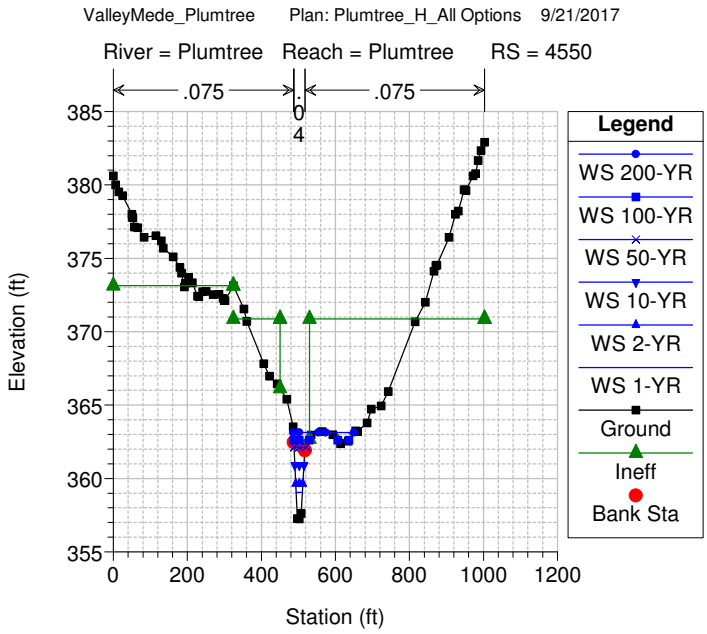
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

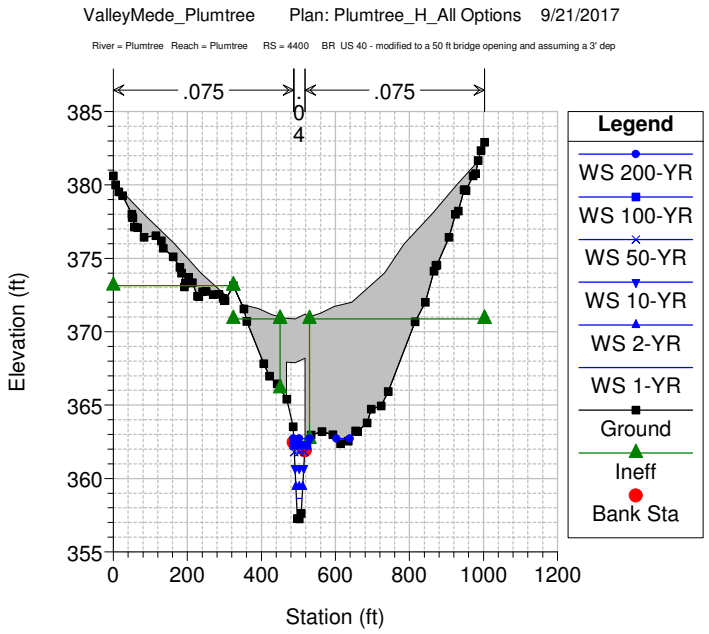
River = Plumtree Reach = Plumtree RS = 4845

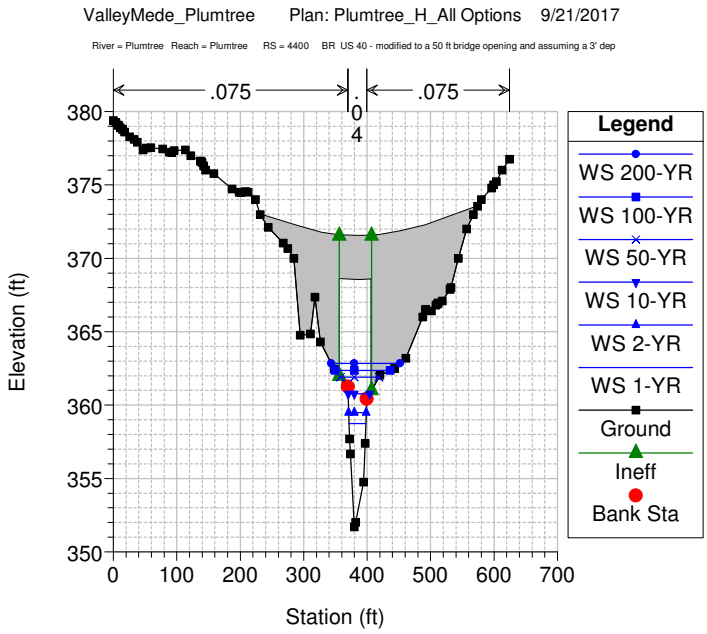


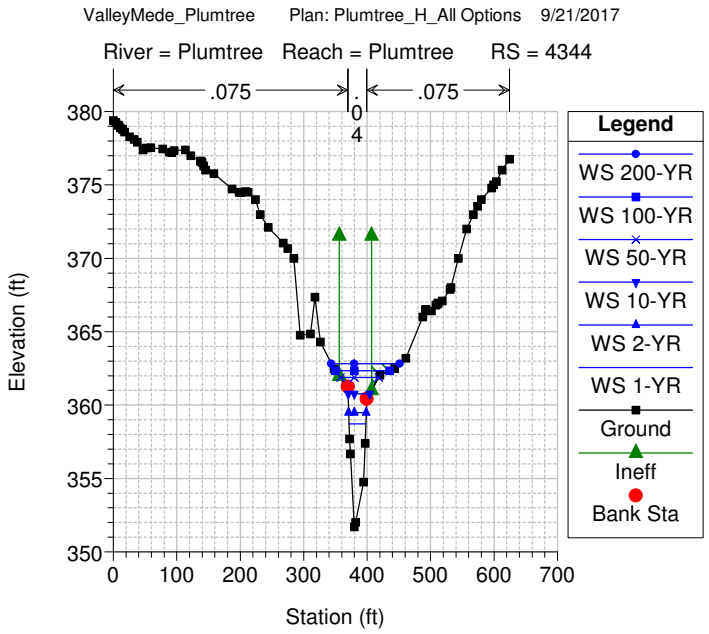

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 4745
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

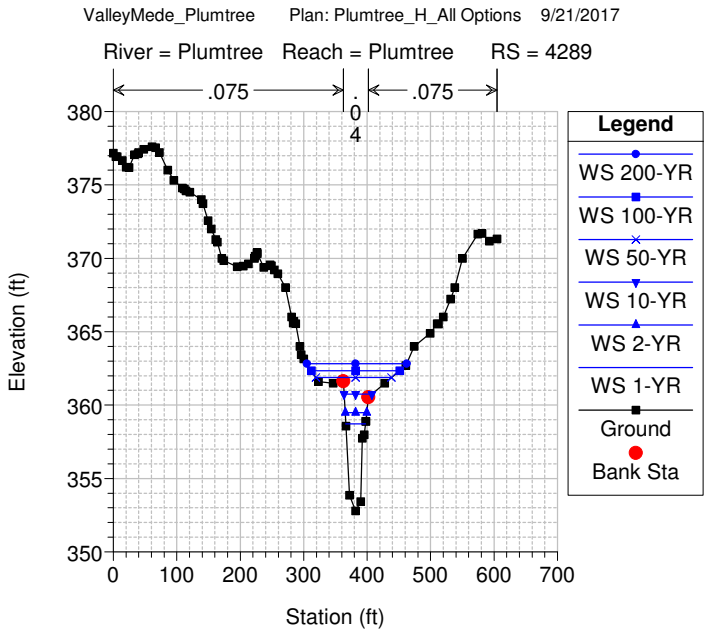

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 4636
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

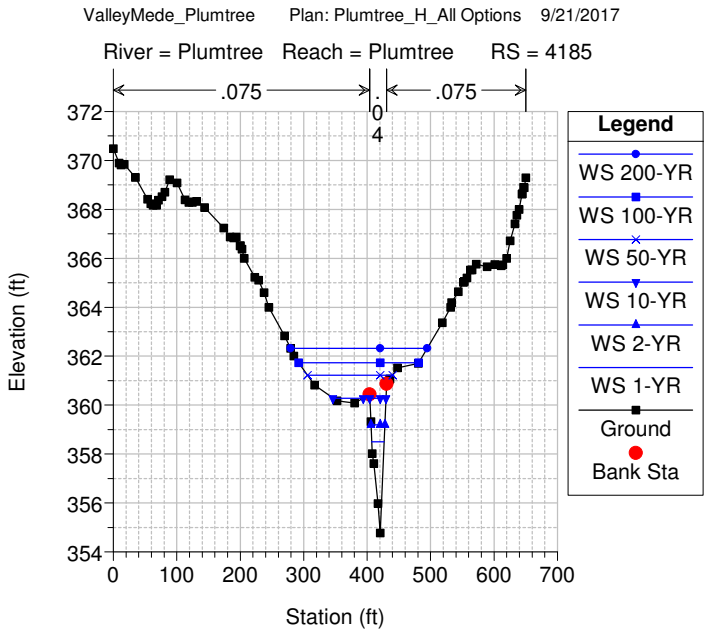

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 4550
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

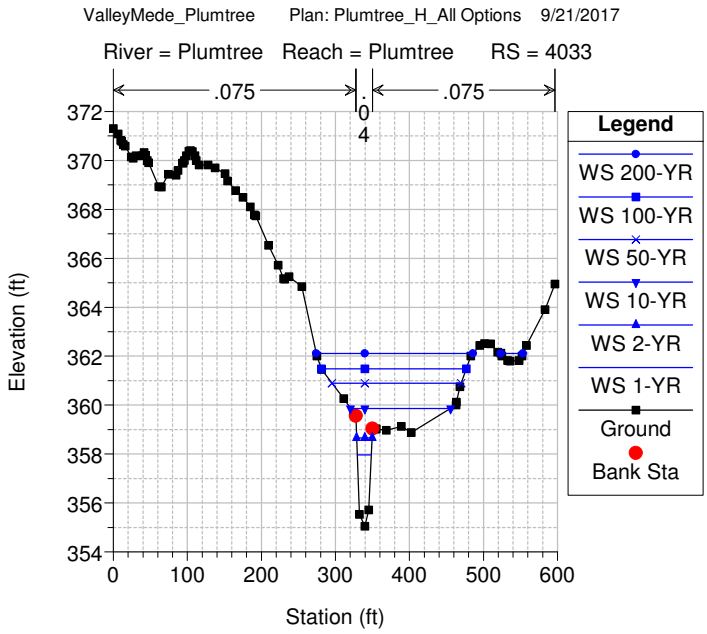

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 4400 BR US 40 - modified to a 50 ft bridge opening and assuming a 3' dep
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

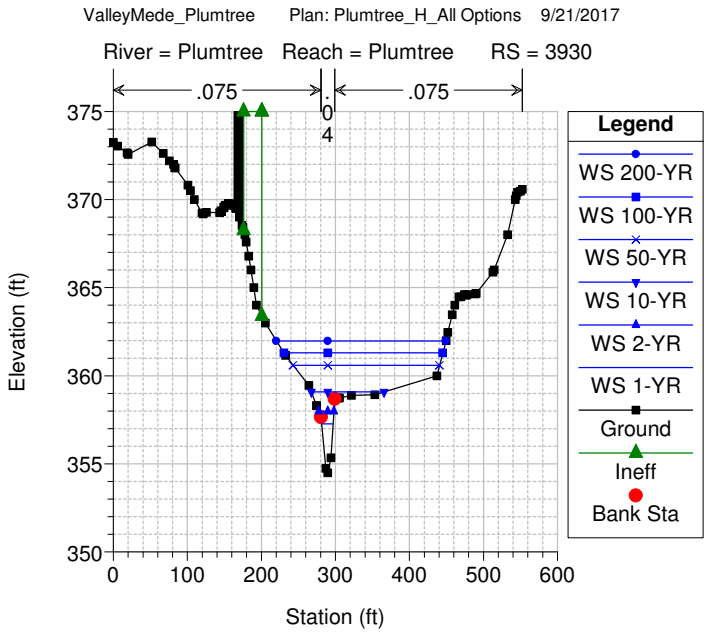

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 4400 BR US 40 - modified to a 50 ft bridge opening and assuming a 3' dep
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

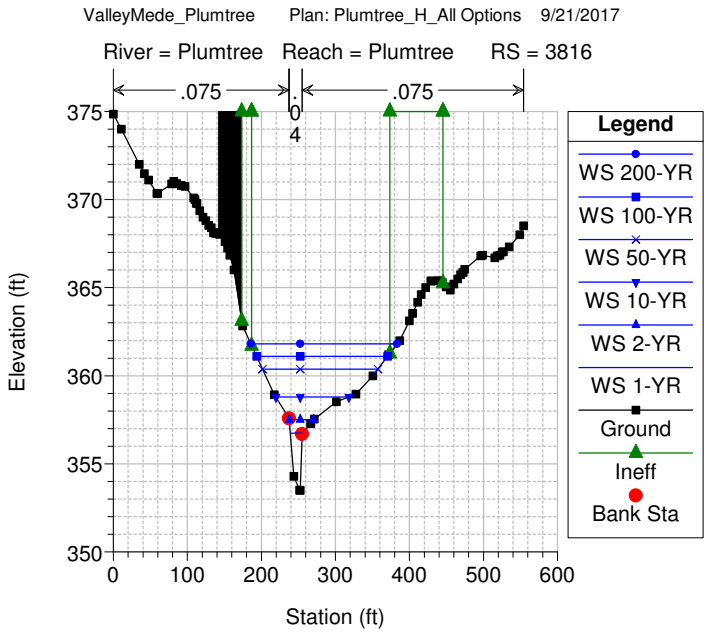

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 4344
.075
.075
0.04
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

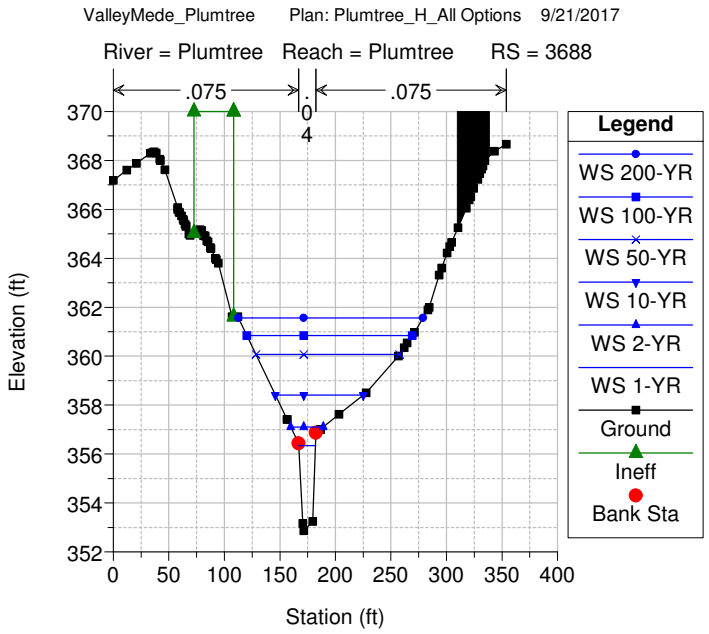

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 4289
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

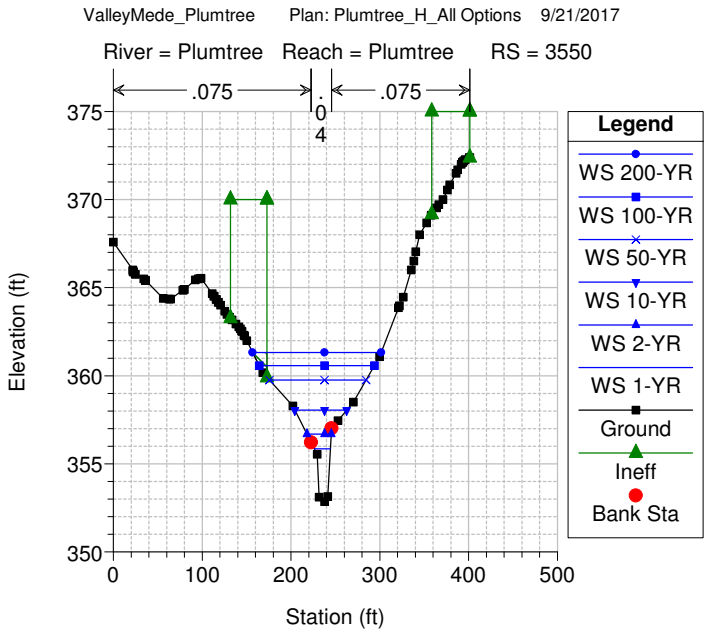

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 4185
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

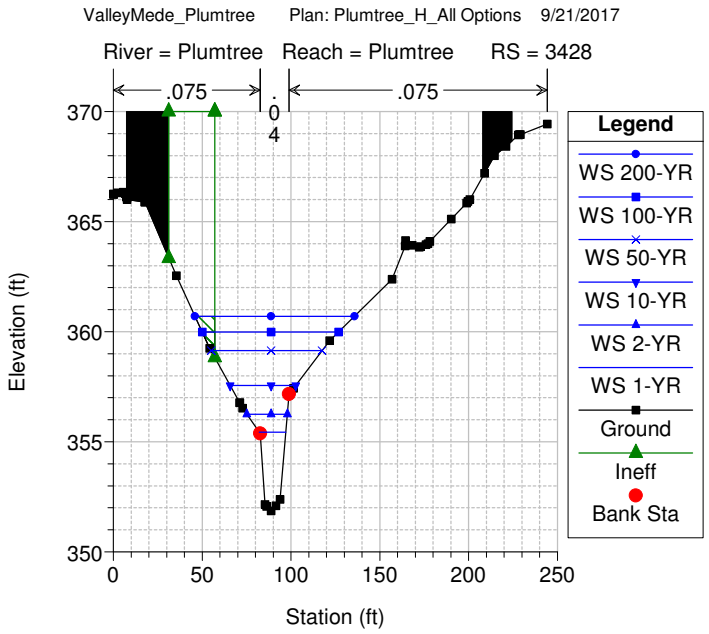

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 4033
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

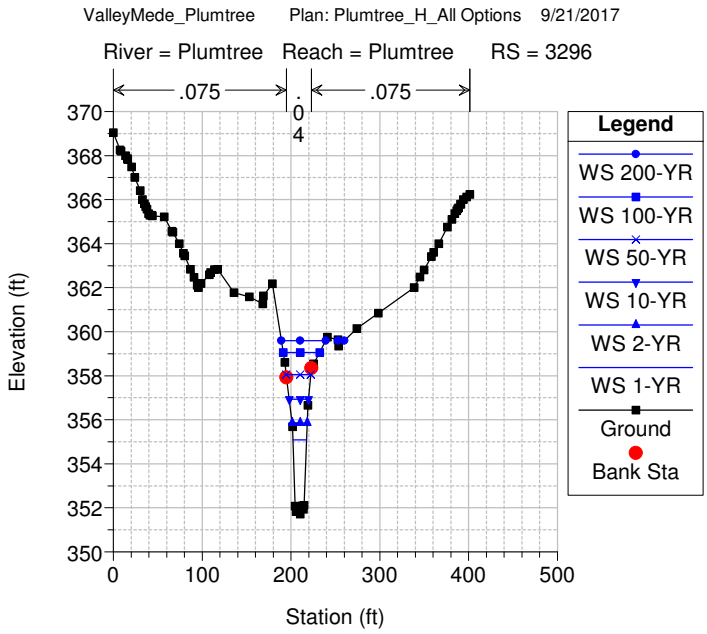

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 3930
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

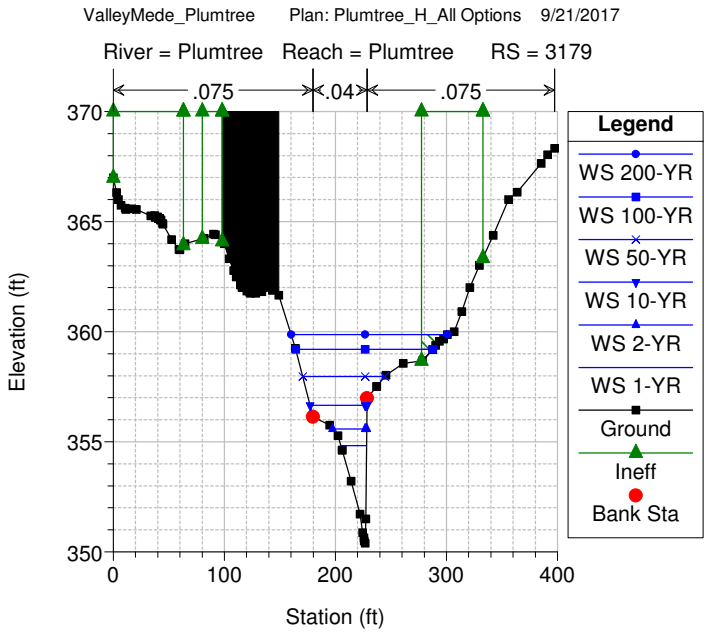

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 3816
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

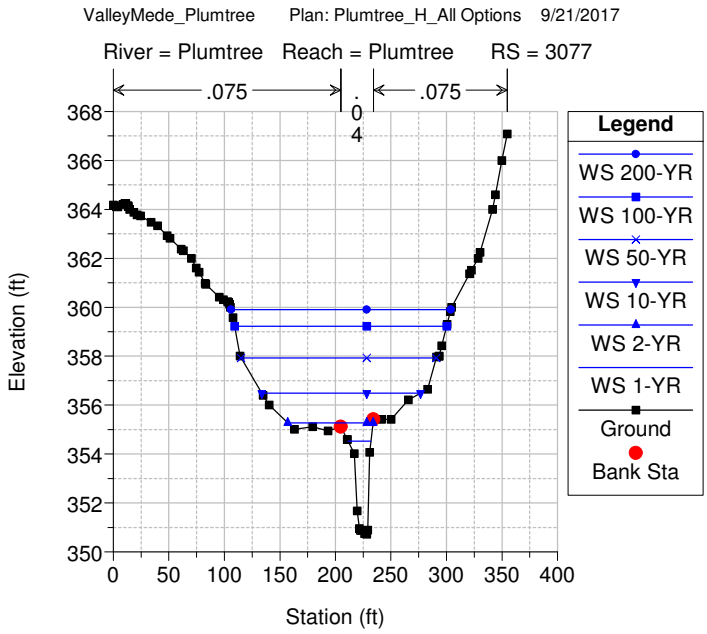

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 3688
.075
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

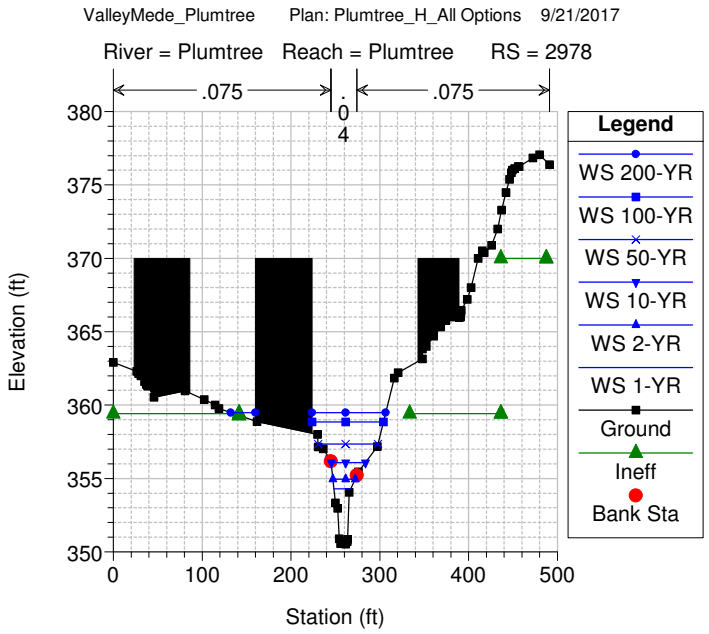

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 3550
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 3428
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 3296
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

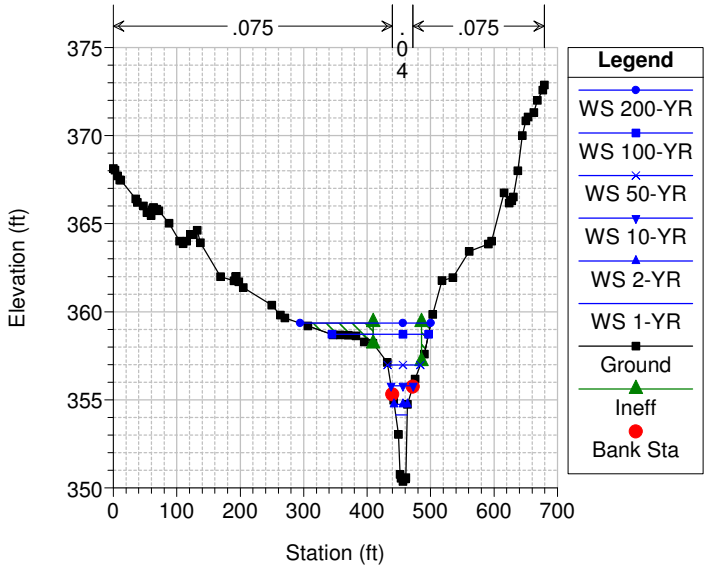

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 3179
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 3077
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 2978
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

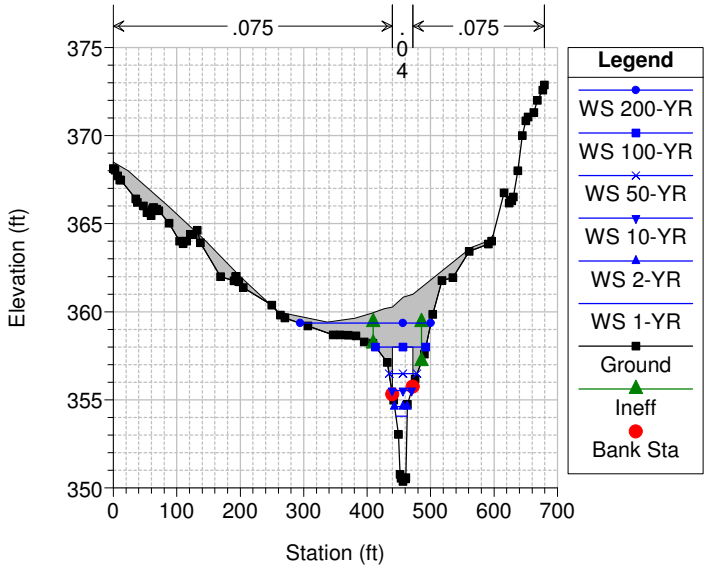
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 2917



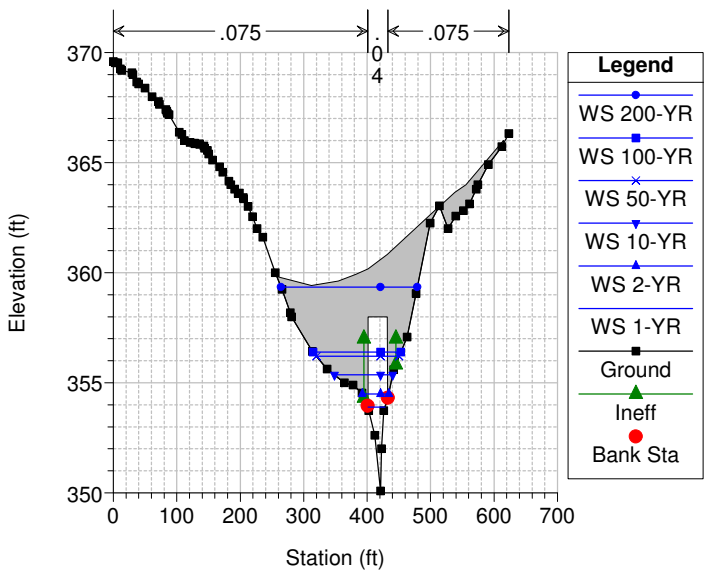
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 2900 BR Frederick Road



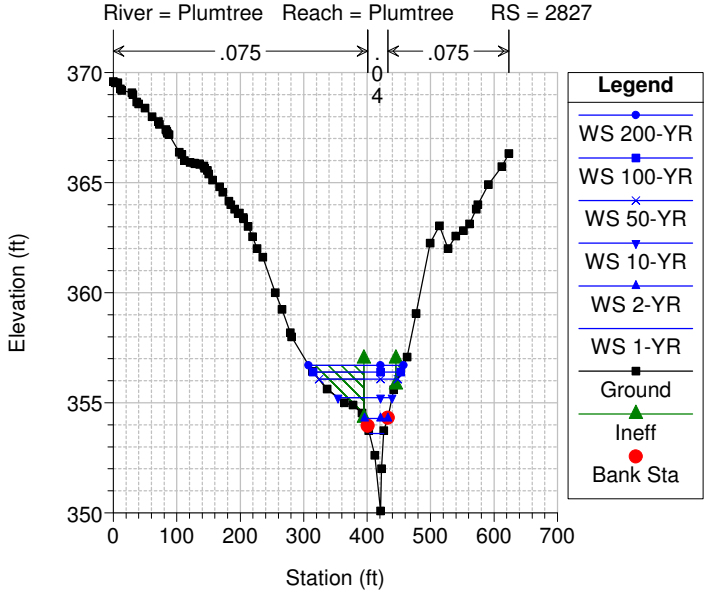
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 2900 BR Frederick Road



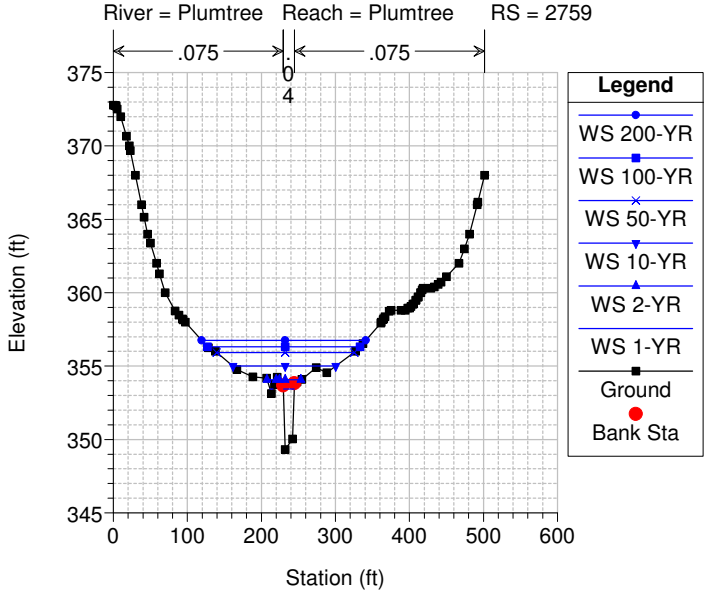
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 2827



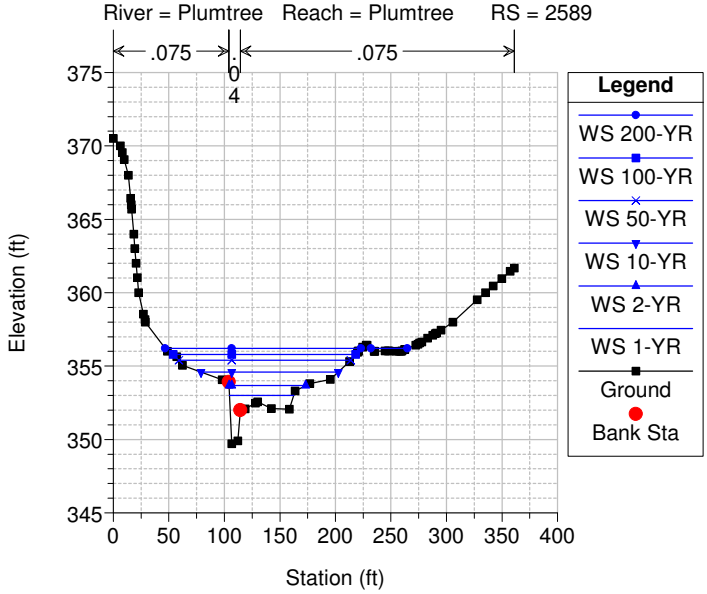
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

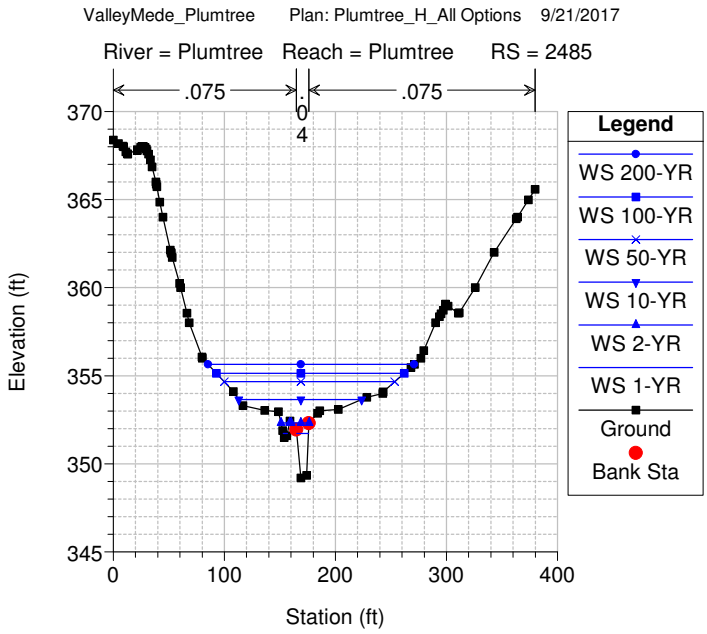
River = Plumtree Reach = Plumtree RS = 2759

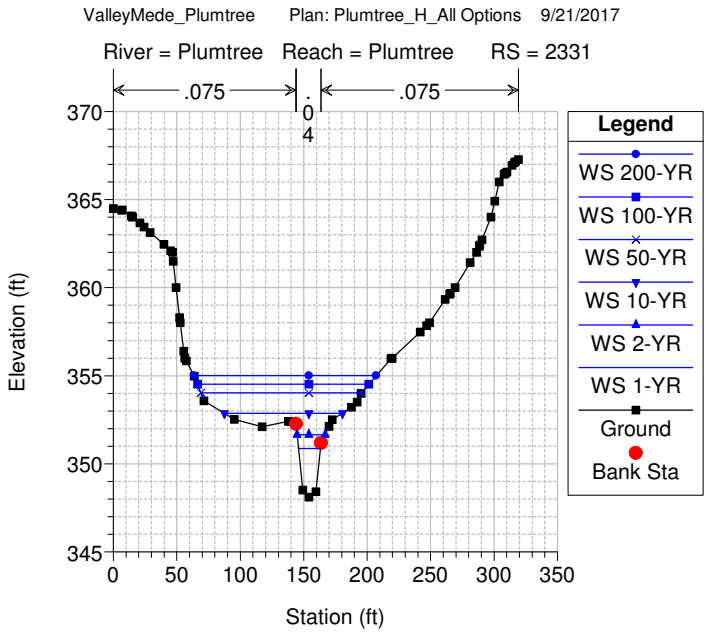


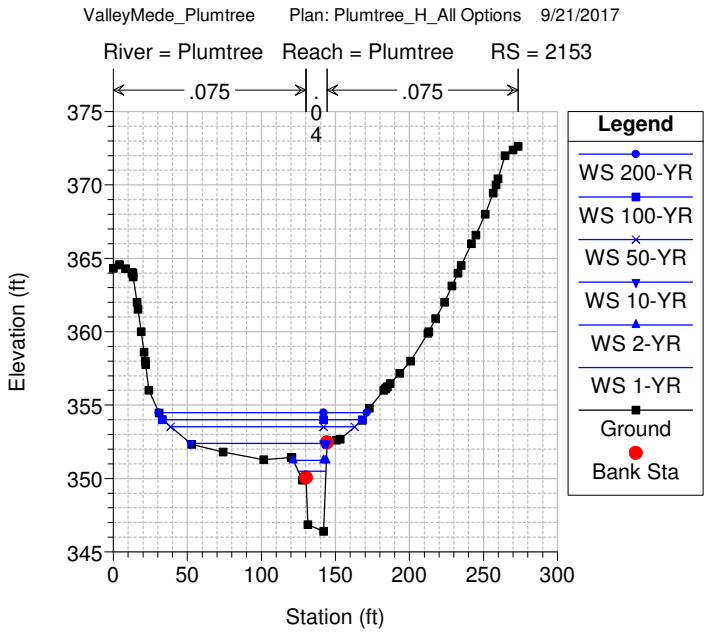
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

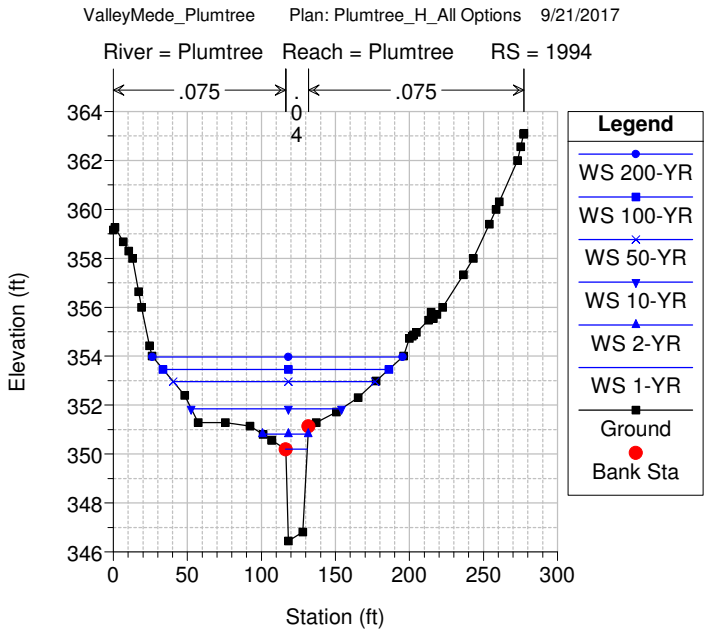
River = Plumtree Reach = Plumtree RS = 2589

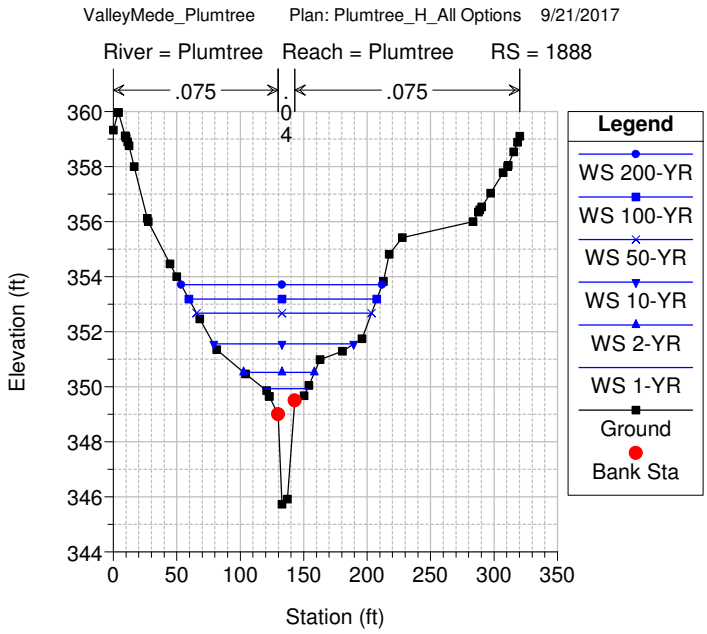


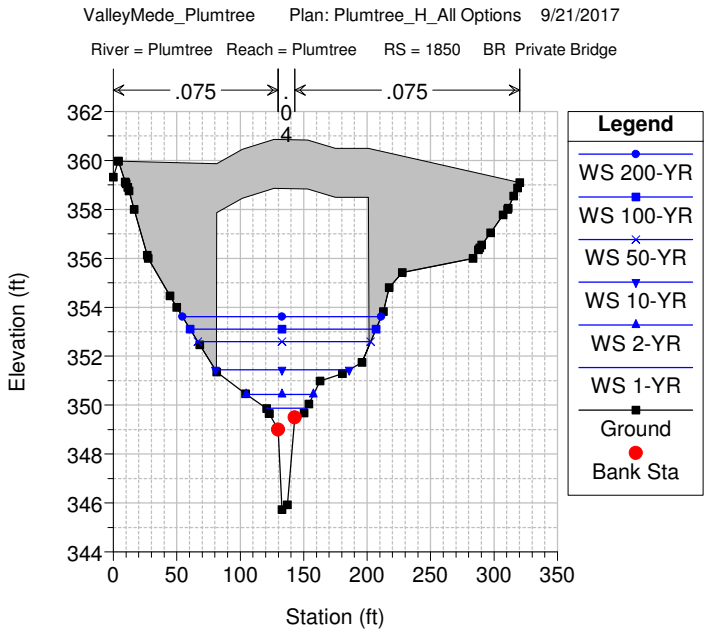

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 2485
.075
.075
0.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 2331
.075
.075
0.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 2153
.075
.075
0.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

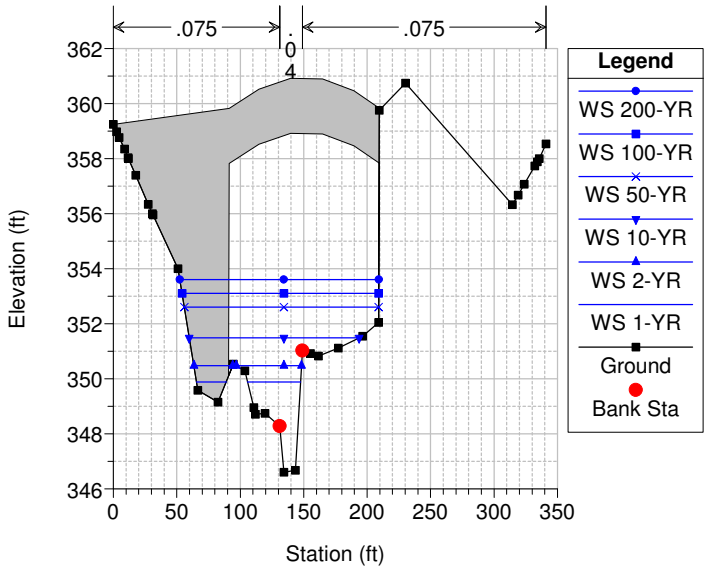

ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 1994
.075
.075
0.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 1888
.075
.075
0.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.075
0.04
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

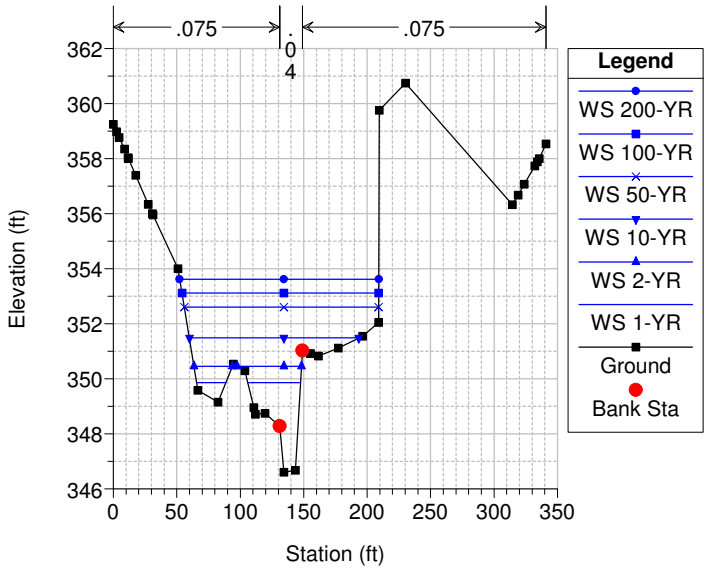
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge



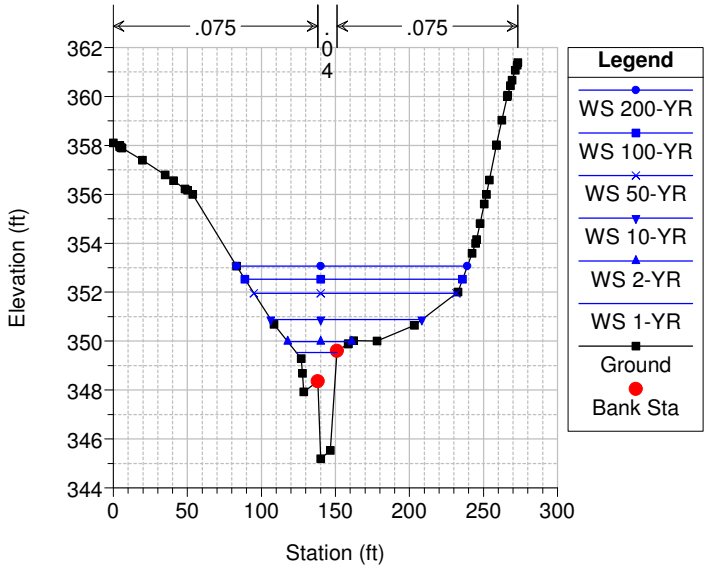
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 1830



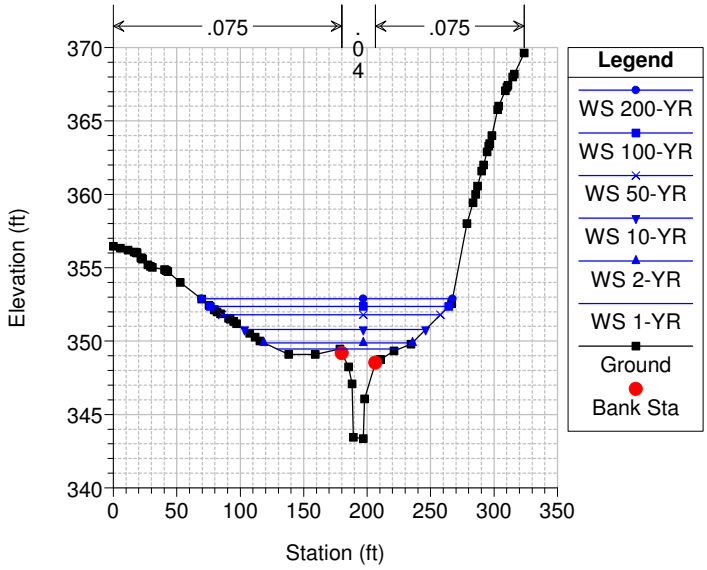
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 1641



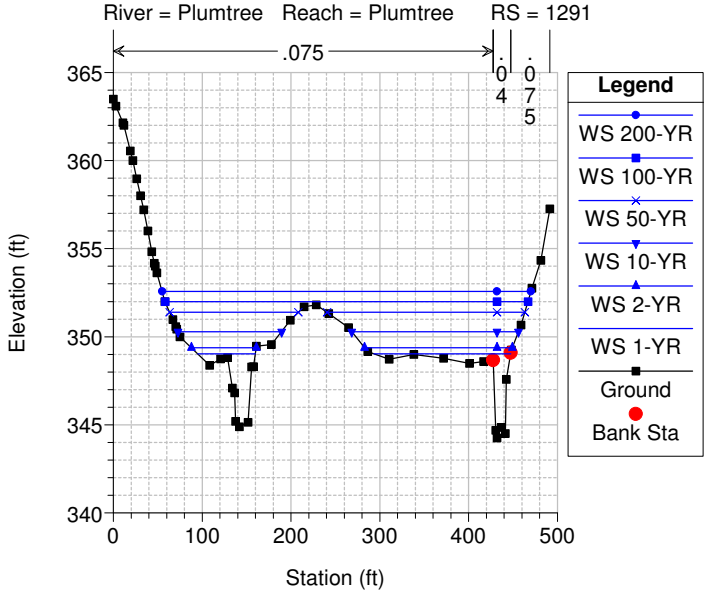
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 1463



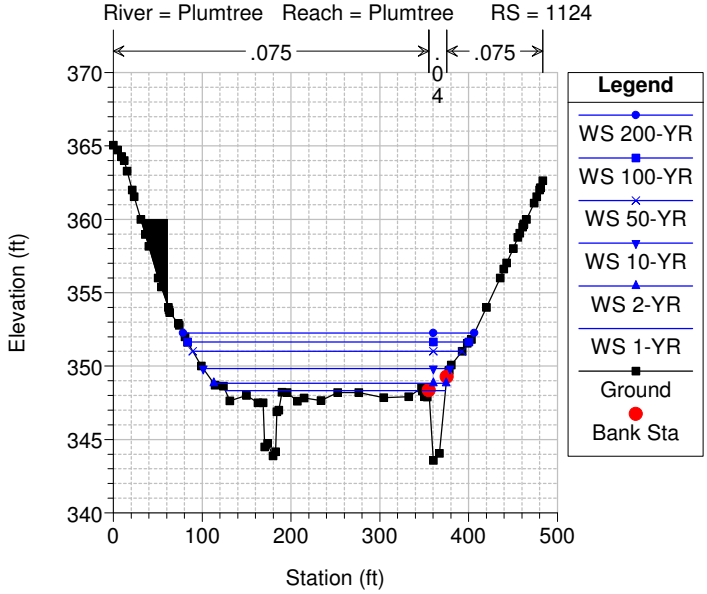
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

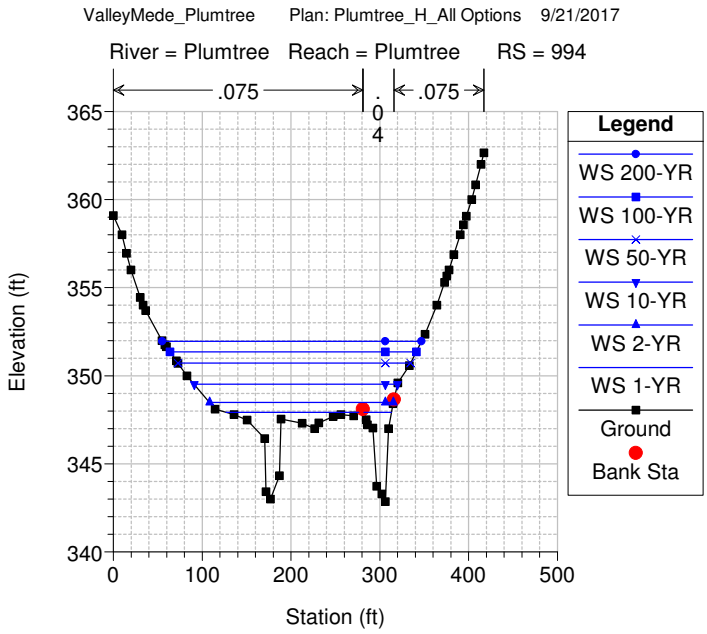
River = Plumtree Reach = Plumtree RS = 1291

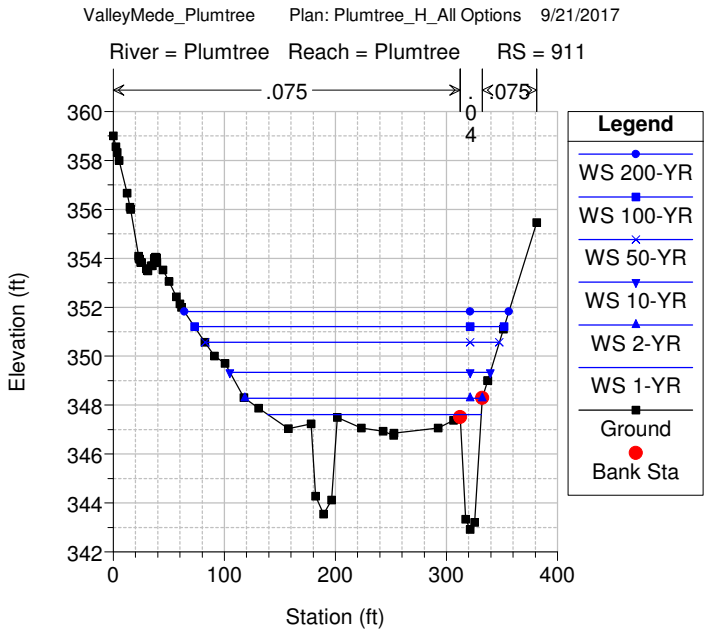


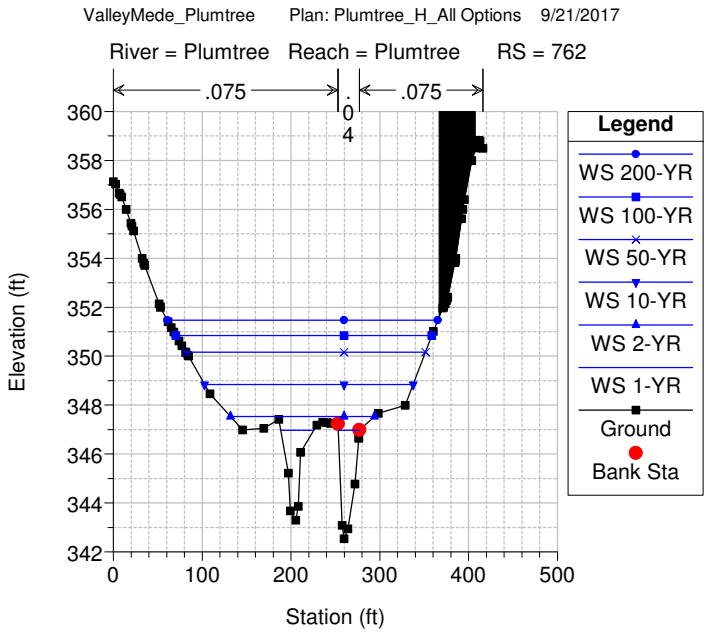
ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017

River = Plumtree Reach = Plumtree RS = 1124




ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 994
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 911
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 762
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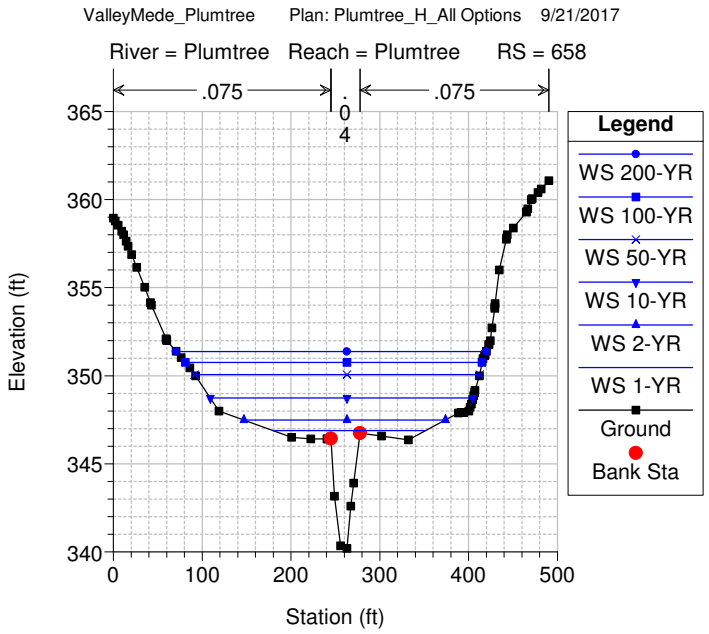
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 658
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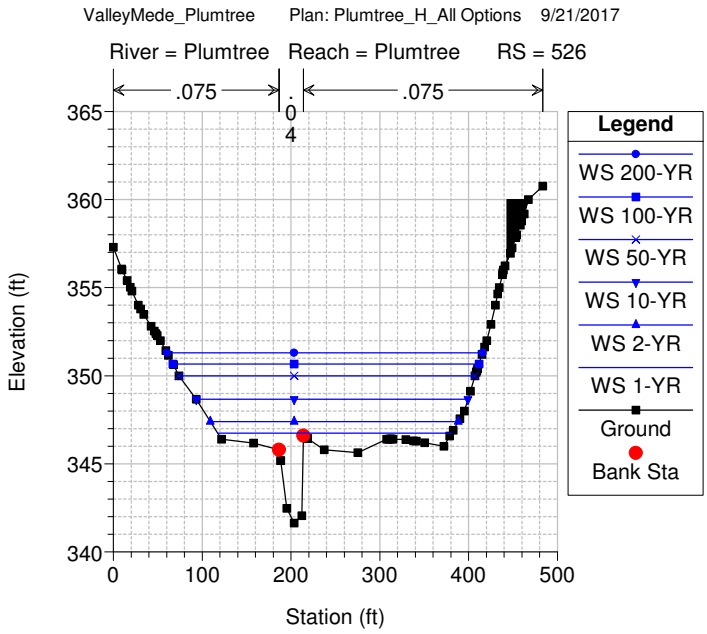
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 526
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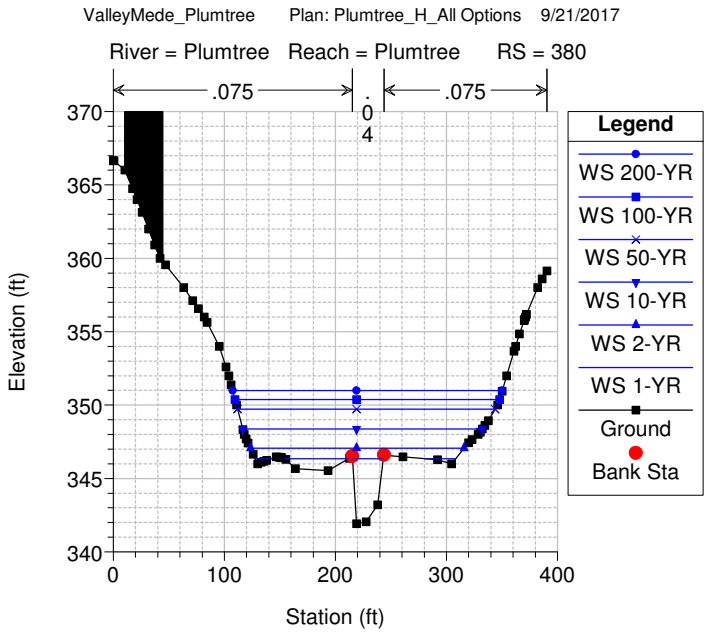
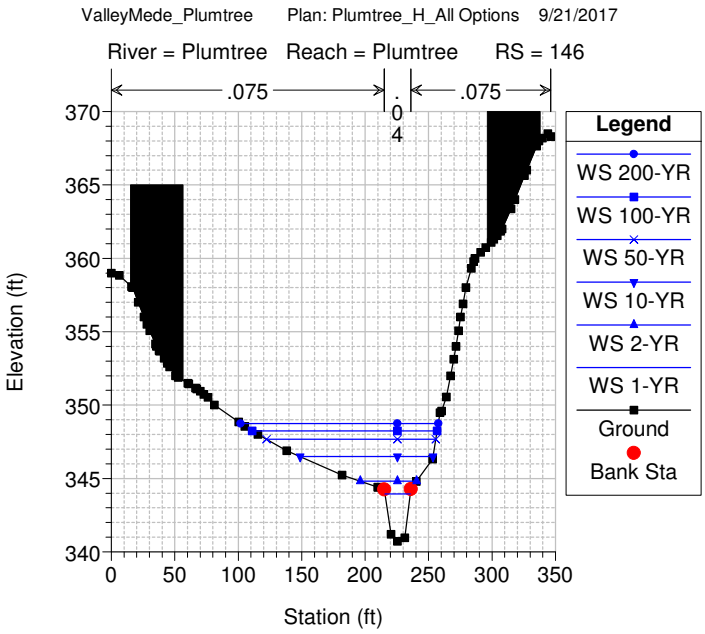
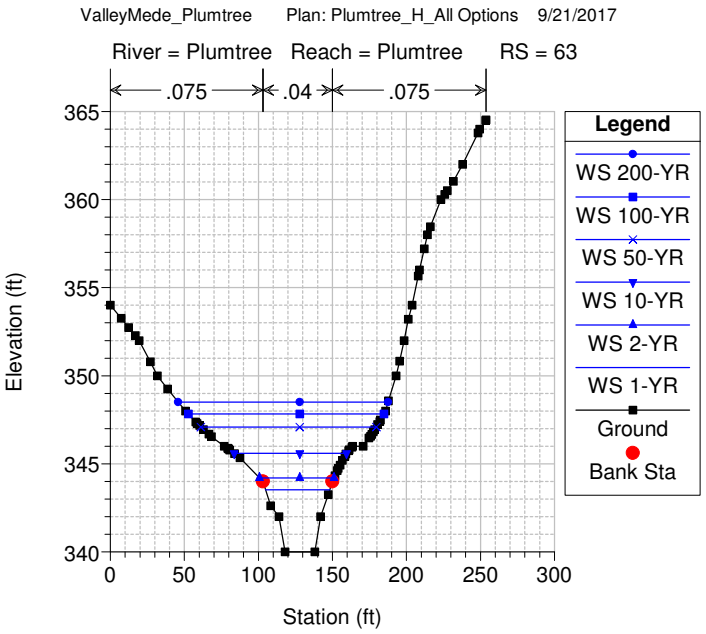
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 380
.075
.04
.075
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 146
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta


ValleyMede_Plumtree Plan: Plumtree_H_All Options 9/21/2017
River = Plumtree Reach = Plumtree RS = 63
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.04
.075
Elevation (ft)
Station (ft)
Legend
WS 200-YR
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
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PROJECT DATA
Project Title: ValleyMede_Plumtree
Project File : ValleyMede_Plumtree.prj
Run Date and Time: 9/21/2017 6:23:41 PM

Project in English units

PLAN DATA

Plan Title: Plumtree_H_All Options
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.p09

Geometry Title: Plumtree_H_All Options
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g16

Flow Title : Plumtree_H_All Options
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f07

Plan Description:
Proposed condition which includes grading for online storage in Plumtree Branch between Hearthstone Rd and Michael's Way and above Michaels Way. (Ponds 1-4) Grading to combine the existing ponds at Country Lane. (Pond 5) Replacing the Frederick Rd, US 40, Longview Dr, Brookmede Rd, and Hearthstone Rd culverts with bridges. Diversion pipe from RS 6454 to RS 4289.

Plan Summary Information:

Number of:	Cross Sections	= 85	Multiple Openings	=	0
	Culverts	= 1	Inline Structures	=	3
	Bridges	= 7	Lateral Structures	=	1

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Plumtree_H_All Options
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f07

Flow Data (cfs)

River	Reach	RS	1-YR	2-YR	10-YR	50-YR	100-YR	200-YR
Plumtree	Plumtree	10286	223	307	596	995	1200	1441
Plumtree	Plumtree	9499	87	134	293	529	662	802
Plumtree	Plumtree	7954	69	110	260	514	649	788
Plumtree	Plumtree	7030	64	106	255	510	645	783
Plumtree	Plumtree	6568	71	110	271	542	691	844
Plumtree	Plumtree	4185	129	201	391	758	963	1207
Plumtree	Plumtree	1291	400	585	1159	2021	2567	3149

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Plumtree	Plumtree	1-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	2-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	10-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	50-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	100-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	200-YR	Critical	Normal S = 0.0035

GEOMETRY DATA

Geometry Title: Plumtree_H_All Options
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g16

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10286

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	421.06	4.46	420.89	12.57	420.32	16.13	420	21.94	419.29
34.88	418	40.42	417.33	49.09	416.56	55.82	416.21	59.64	416.08
64.03	416.14	69.28	416.31	71.51	416.31	77.01	416.75	78.81	416.76
87.6	416	91.89	415.92	104.16	414	107.04	413.94	110.15	414
119.18	415.05	122.23	414.9	125.21	414.83	141.42	414.84	151.61	414.58
159.6	414.54	167.19	414.69	175.25	414.38	179.96	413.77	184.56	413.83
198.65	413.63	213.29	412.97	221.19	413.06	244.79	412.19	252.86	412
260.69	411.14	268.55	410	275.66	409.1	281.64	408	295.07	406.35
301.98	405.73	324.56	404	331.77	402.81	335.97	402	342.56	400
348.24	398	350.27	397.89	356.41	396	360.42	395	363.48	394
369.55	392	375.62	390	380.47	388.4	381.68	388	486.9	388
492.96	390	499.01	392	511.13	396	514.52	396	527.48	398
535.86	400	542.87	402	555.37	406	562.67	408	571.1	410
582.03	412	599.19	414	605.88	414.94	612.34	415.57	635.29	417.19

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.085	350.27	.055	369.55	.04	499.01	.055	514.52	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
369.55	499.01	240.46	241.25	237.2	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10044

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	412.61	5.59	412.52	12.02	412	24.56	410	43.68	408
63.32	407.31	82.83	408	95.82	408.67	112.17	408.9	135.95	408
150.67	407.02	155.38	406.93	170.58	407.72	184.39	408.12	187.95	408
198.17	406	207.41	404.64	213.72	403.97	220.01	403.47	230.16	403.33
237.26	402.98	240.08	402.75	253.05	401.3	261.48	400	269.64	398
272.75	396	275.83	395	280.91	393.35	285.04	392	291.19	390
297.33	388	489.28	388	495.29	390	501.3	392	507.31	394
510.32	395	513.32	396	547.82	396	555.48	396.43	564.03	396.66
570.08	396.96	600.19	397.8	605.55	398.35	610.97	398.79	622.38	399.08
632.53	400	658.42	401.23	661.34	401.26	665.82	401.48	679.52	401.73
692.52	401.54	695.05	401.76	701.43	401.68	704.45	401.5	715.06	401.24
723.65	401.19	738.24	400.62	741.08	400.41	748.78	400.57	754.02	400.82
766.27	400.65	779.16	401.67	781.77	402	794.47	404	812.23	408
815.19	408.2								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.085	269.64	.055	285.04	.04	501.3	.055	547.82	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
285.04	501.3	233.9	230.57	222.97	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9814

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	408.67	12.64	408	20.9	407.3	27.53	406.98	42.5	406.44
45.07	406.25	49.58	405.72	78.23	403.56	83.62	402.79	92.79	403.11
109.61	402.4	113.8	402	123.62	401.65	158.68	400.12	170.91	398.99
182.64	398	185.71	396	195.08	392.88	209.71	388	491.68	388
507.27	392.96	510.52	394	513.65	395	518.53	395.7	538.06	395.23
547.13	395.22	564.37	396	575.99	396.66	593.58	397.53	602.7	396.78
604.57	396.76	609.13	397.48	610.69	398	617.78	398.3	636.1	398.77
690.36	399.64	696.36	399.66	731.55	398.7	739.3	398.59	745.07	398.39
755.19	398.48	767.5	398.81	779.98	399.52	790.91	399.95	806.05	402
818.51	403.5	823.74	404	826.23	404.1				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.085	182.64	.055	195.08	.04	507.27	.055	518.53	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
195.08	507.27	52.2	51.56	50.88	.1	.3

Right Levee Station= 518.53 Elevation= 395.7

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9762

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406.21	1.37	406	14.09	404.95	24.55	404.21	38.68	402.62
47.25	402	67.31	400	71.18	399.81	79.7	399.62	84.43	399.37
117.61	398.32	130.2	398.16	134.88	398	147.37	397.38	157.13	397.03
162.41	397.34	174.01	396.74	180.15	396	183.28	395	186.4	394
192.66	392	205.16	388	471.31	388	484.05	392	490.41	394
493.6	395	507.72	395.47	543.73	396.64	554.26	396.66	559.24	396.89
562.97	396.96	568.76	397.23	584.75	397.94	589.53	398.31	594.28	398
601.77	397.68	611.77	398	662.6	399.2	729.79	397.67	753.67	397.86
761.91	398	785.2	399.61	794.52	400.41	805.84	402.01		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.085	180.15	.055	192.66	.04	484.05	.055	507.72	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
192.66	484.05	32.64	30.09	27.57	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9732

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398.31	5.8	398.13	10.47	398	29.73	396	32.75	395
35.75	394	41.77	392	47.8	390	53.85	388	82.5	387.93
100.87	387.89	104.5	387	110.8	387.67	121.15	387.71	188.96	388
235.44	390	281.92	392	319.96	394	323.08	395	326.21	396
333.46	396.42	339.72	396.5	344.54	396.53	352.47	396.8	353.45	396.82

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.055	82.5	.04	121.15	.055

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
82.5	121.15	145.71	143.47	141.55	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	80.8	394.38	F
132.2	353.45	394.38	F

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 9650

INPUT
Description: Michaels Way
Distance from Upstream XS = 51
Deck/Roadway Width = 50
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 10

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	396.38		26.1	395.934		49.6	395.582	
91.4	394.914		117.4	394.746		144.9	394.497	
186.3	394.402		211.94	394.376		238.63	394.594	
353.45	396							

Upstream Bridge Cross Section Data
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398.31	5.8	398.13	10.47	398	29.73	396	32.75	395
35.75	394	41.77	392	47.8	390	53.85	388	82.5	387.93
100.87	387.89	104.5	387	110.8	387.67	121.15	387.71	188.96	388
235.44	390	281.92	392	319.96	394	323.08	395	326.21	396
333.46	396.42	339.72	396.5	344.54	396.53	352.47	396.8	353.45	396.82

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.055	82.5	.04	121.15	.055

Bank Sta: Left	Right	Coeff Contr.	Expan.
82.5	121.15	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	80.8	394.38	F
132.2	353.45	394.38	F

Downstream Deck/Roadway Coordinates
num= 14

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	397.96		8.6	397.3		45.6	396.969	
68.8	396.671		92.4	396.38		123.2	395.934	
146.8	395.582		191.3	394.914		209.6	394.746	
232.9	394.497		262.2	394.402		288.2	394.376	
314.98	394.594		417.56	396				

Downstream Bridge Cross Section Data
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01

```
   29.32  394.71   29.33  394.38   39.55  392.85   60.92  392.22   95.59   390.4
  100.13  389.82  106.73  388.97  116.38  387.66  117.95  386.81  124.68  386.27
  130.57  386.46  134.27   387.9   134.7     388  137.88  388.68  144.79  390.87
  157.88  392.09  174.45  391.81  191.33  392.09  218.95   392.7   229.4  392.07
  229.72  392.09  239.13  392.16  239.87  392.21  251.99  392.37  252.81  392.33
  253.84  392.05  264.78  392.06  265.66  392.35  265.82  392.37  274.13  392.48
  275.38  392.39   275.8  392.37  280.37  392.38  285.74  392.34  288.04  392.35
  289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
  294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
  302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
  336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
  353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
  363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        106.73  137.88             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8     391       F
   140.7  417.56     391       F

Upstream Embankment side slope              =       3 horiz. to 1.0 vertical
Downstream Embankment side slope            =       3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.5     .024     .016        0                  .5                1
Upstream   Elevation =  387.74
           Centerline Station =  102
Downstream Elevation =  386.61
           Centerline Station =  120

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                13   114.6     .024     .016        0                  .5                1
Upstream   Elevation =  387.77
           Centerline Station =  112
Downstream Elevation =  386.6
           Centerline Station =  130

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        112.83    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          7.45
  Q Barrel (cfs)            112.83    Culv Vel DS (ft/s)          7.44
  E.G. US. (ft)             391.04    Culv Inv El Up (ft)       387.74
  W.S. US. (ft)             391.01    Culv Inv El Dn (ft)       386.61
  E.G. DS (ft)              389.12    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              388.63    Culv Exit Loss (ft)         0.37
  Delta EG (ft)               1.92    Culv Entr Loss (ft)         0.43
  Delta WS (ft)               2.39    Q Weir (cfs)
  E.G. IC (ft)              390.65    Weir Sta Lft (ft)
  E.G. OC (ft)              391.05    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        389.76    Weir Max Depth (ft)
  Culv WS Outlet (ft)       388.63    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.02    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         1.97    Min El Weir Flow (ft)     394.39
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CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	154.23	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.22
Q Barrel (cfs)	154.23	Culv Vel DS (ft/s)	8.26
E.G. US. (ft)	391.77	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	391.74	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.57	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	388.99	Culv Exit Loss (ft)	0.55
Delta EG (ft)	2.21	Culv Entr Loss (ft)	0.53
Delta WS (ft)	2.75	Q Weir (cfs)	
E.G. IC (ft)	391.34	Weir Sta Lft (ft)	
E.G. OC (ft)	391.77	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.19	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.05	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.45	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.44	Min El Weir Flow (ft)	394.39

Warning: At least one culvert in the culvert group has supercritical flow at the outlet. However, since more than one culvert
in the culvert group has flow, the program cannot determine if the downstream cross section should be subcritical or
supercritical flow. The program used the downstream subcritical answer, even though it may not be valid.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	298.59	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.85
Q Barrel (cfs)	298.59	Culv Vel DS (ft/s)	10.89
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	393.90	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	390.73	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	389.73	Culv Exit Loss (ft)	1.25
Delta EG (ft)	3.23	Culv Entr Loss (ft)	0.75
Delta WS (ft)	4.17	Q Weir (cfs)	
E.G. IC (ft)	393.54	Weir Sta Lft (ft)	
E.G. OC (ft)	393.95	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.69	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.13	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.98	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.52	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	379.63	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.55
Q Barrel (cfs)	379.63	Culv Vel DS (ft/s)	12.18
E.G. US. (ft)	395.22	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.21	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.03	Culv Frctn Ls (ft)	1.15
W.S. DS (ft)	390.54	Culv Exit Loss (ft)	0.97
Delta EG (ft)	3.19	Culv Entr Loss (ft)	0.86
Delta WS (ft)	4.68	Q Weir (cfs)	236.05
E.G. IC (ft)	395.13	Weir Sta Lft (ft)	72.98
E.G. OC (ft)	395.21	Weir Sta Rgt (ft)	288.80
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.62	Weir Max Depth (ft)	0.83
Culv WS Outlet (ft)	390.69	Weir Avg Depth (ft)	0.54
Culv Nml Depth (ft)	5.92	Weir Flow Area (sq ft)	115.82
Culv Crt Depth (ft)	4.08	Min El Weir Flow (ft)	394.39

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	394.05	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.61
Q Barrel (cfs)	394.05	Culv Vel DS (ft/s)	11.88
E.G. US. (ft)	395.47	Culv Inv El Up (ft)	387.74

W.S. US. (ft)	395.46	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.52	Culv Frctn Ls (ft)	2.83
W.S. DS (ft)	391.01	Culv Exit Loss (ft)	0.68
Delta EG (ft)	2.95	Culv Entr Loss (ft)	0.89
Delta WS (ft)	4.45	Q Weir (cfs)	413.15
E.G. IC (ft)	395.47	Weir Sta Lft (ft)	56.47
E.G. OC (ft)	395.45	Weir Sta Rgt (ft)	310.36
Culvert Control	Inlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.83	Weir Max Depth (ft)	1.10
Culv WS Outlet (ft)	391.01	Weir Avg Depth (ft)	0.70
Culv Nml Depth (ft)	5.92	Weir Flow Area (sq ft)	177.82
Culv Crt Depth (ft)	4.14	Min El Weir Flow (ft)	394.39

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #1

Q Culv Group (cfs)	406.53	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.53
Q Barrel (cfs)	406.53	Culv Vel DS (ft/s)	11.19
E.G. US. (ft)	395.72	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.71	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	393.08	Culv Frctn Ls (ft)	0.76
W.S. DS (ft)	391.55	Culv Exit Loss (ft)	0.42
Delta EG (ft)	2.64	Culv Entr Loss (ft)	0.86
Delta WS (ft)	4.16	Q Weir (cfs)	628.58
E.G. IC (ft)	395.71	Weir Sta Lft (ft)	40.49
E.G. OC (ft)	395.72	Weir Sta Rgt (ft)	325.33
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.13	Weir Max Depth (ft)	1.34
Culv WS Outlet (ft)	391.55	Weir Avg Depth (ft)	0.86
Culv Nml Depth (ft)	5.92	Weir Flow Area (sq ft)	244.56
Culv Crt Depth (ft)	4.15	Min El Weir Flow (ft)	394.39

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.17	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.46
Q Barrel (cfs)	110.17	Culv Vel DS (ft/s)	7.23
E.G. US. (ft)	391.04	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	391.01	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.12	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	388.63	Culv Exit Loss (ft)	0.32
Delta EG (ft)	1.92	Culv Entr Loss (ft)	0.43
Delta WS (ft)	2.39	Q Weir (cfs)	
E.G. IC (ft)	390.63	Weir Sta Lft (ft)	
E.G. OC (ft)	391.03	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.74	Weir Max Depth (ft)	
Culv WS Outlet (ft)	388.63	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.97	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.94	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	152.77	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.24
Q Barrel (cfs)	152.77	Culv Vel DS (ft/s)	8.31
E.G. US. (ft)	391.77	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	391.74	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.57	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	388.99	Culv Exit Loss (ft)	0.52
Delta EG (ft)	2.21	Culv Entr Loss (ft)	0.53
Delta WS (ft)	2.75	Q Weir (cfs)	
E.G. IC (ft)	391.34	Weir Sta Lft (ft)	
E.G. OC (ft)	391.78	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.20	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.01	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.41	Weir Flow Area (sq ft)	

Culv Crt Depth (ft)	2.43	Min El Weir Flow (ft)	394.39

Warning: At least one culvert in the culvert group has supercritical flow at the outlet. However, since more than one culvert
in the culvert group has flow, the program cannot determine if the downstream cross section should be subcritical or
supercritical flow. The program used the downstream subcritical answer, even though it may not be valid.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: During the supercritical analysis, the program could not converge on a supercritical answer in the downstream cross
section. The program used the solution with the least error.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	297.41	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.95
Q Barrel (cfs)	297.41	Culv Vel DS (ft/s)	10.88
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	393.90	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	390.73	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	389.73	Culv Exit Loss (ft)	1.23
Delta EG (ft)	3.23	Culv Entr Loss (ft)	0.77
Delta WS (ft)	4.17	Q Weir (cfs)	
E.G. IC (ft)	393.55	Weir Sta Lft (ft)	
E.G. OC (ft)	393.97	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.66	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.11	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.91	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.51	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	379.32	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.63
Q Barrel (cfs)	379.32	Culv Vel DS (ft/s)	12.17
E.G. US. (ft)	395.22	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.21	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.03	Culv Frctn Ls (ft)	1.12
W.S. DS (ft)	390.54	Culv Exit Loss (ft)	0.95
Delta EG (ft)	3.19	Culv Entr Loss (ft)	0.88
Delta WS (ft)	4.68	Q Weir (cfs)	236.05
E.G. IC (ft)	395.15	Weir Sta Lft (ft)	72.98
E.G. OC (ft)	395.22	Weir Sta Rgt (ft)	288.80
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.59	Weir Max Depth (ft)	0.83
Culv WS Outlet (ft)	390.67	Weir Avg Depth (ft)	0.54
Culv Nml Depth (ft)	5.25	Weir Flow Area (sq ft)	115.82
Culv Crt Depth (ft)	4.07	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	392.80	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.69
Q Barrel (cfs)	392.80	Culv Vel DS (ft/s)	11.82
E.G. US. (ft)	395.47	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.46	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.52	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	391.01	Culv Exit Loss (ft)	0.66
Delta EG (ft)	2.95	Culv Entr Loss (ft)	0.91
Delta WS (ft)	4.45	Q Weir (cfs)	413.15
E.G. IC (ft)	395.47	Weir Sta Lft (ft)	56.47
E.G. OC (ft)	395.45	Weir Sta Rgt (ft)	310.36
Culvert Control	Inlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.79	Weir Max Depth (ft)	1.10
Culv WS Outlet (ft)	391.01	Weir Avg Depth (ft)	0.70
Culv Nml Depth (ft)	5.92	Weir Flow Area (sq ft)	177.82
Culv Crt Depth (ft)	4.14	Min El Weir Flow (ft)	394.39

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #200-YR Culv Group: Culvert #2

Q Culv Group (cfs)	405.89	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.55
Q Barrel (cfs)	405.89	Culv Vel DS (ft/s)	11.16
E.G. US. (ft)	395.72	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.71	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	393.08	Culv Frctn Ls (ft)	0.72
W.S. DS (ft)	391.55	Culv Exit Loss (ft)	0.41
Delta EG (ft)	2.64	Culv Entr Loss (ft)	0.88
Delta WS (ft)	4.16	Q Weir (cfs)	628.58
E.G. IC (ft)	395.72	Weir Sta Lft (ft)	40.49
E.G. OC (ft)	395.71	Weir Sta Rgt (ft)	325.33
Culvert Control	Inlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.11	Weir Max Depth (ft)	1.34
Culv WS Outlet (ft)	391.55	Weir Avg Depth (ft)	0.86
Culv Nml Depth (ft)	5.92	Weir Flow Area (sq ft)	244.56
Culv Crt Depth (ft)	4.14	Min El Weir Flow (ft)	394.39

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01
29.32	394.71	29.33	394.38	39.55	392.85	60.92	392.22	95.59	390.4
100.13	389.82	106.73	388.97	116.38	387.66	117.95	386.81	124.68	386.27
130.57	386.46	134.27	387.9	134.7	388	137.88	388.68	144.79	390.87
157.88	392.09	174.45	391.81	191.33	392.09	218.95	392.7	229.4	392.07
229.72	392.09	239.13	392.16	239.87	392.21	251.99	392.37	252.81	392.33
253.84	392.05	264.78	392.06	265.66	392.35	265.82	392.37	274.13	392.48
275.38	392.39	275.8	392.37	280.37	392.38	285.74	392.34	288.04	392.35
289.04	392.37	289.76	392.35	291.67	392.43	292.2	392.41	293.73	392.52
294.34	392.49	295.48	392.61	297.43	392.5	299.89	392.58	301.52	392.7
302.57	392.72	317.67	393.33	321.58	393.35	323.43	393.4	328.45	393.52
336.04	393.41	337.54	393.43	342.18	393.53	347.45	393.83	351.46	393.93
353.19	394	353.68	394.06	355.32	394.12	356.64	394.21	359.84	394.23
363.57	394.38	408.86	396	412.96	396.28	417.56	396.44		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.73	.04	137.88	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
106.73 137.88 74.95 89.37 103.36 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	104.8	391	F
140.7	417.56	391	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9499

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.42	1.16	397.39	10.04	396	12.41	395.1	15.2	394
19.89	392.3	20.69	392	30.94	390.03	58.35	389.54	78.64	389.7
91.71	389.72	91.72	389.72	95.66	389.73	106.35	385.4	108.48	385.35
121.85	388.31	126.28	389.29	134.6	389.39	148.99	387.24	154.41	388.47
172.52	389.82	180.01	390	192.12	392	192.21	392.01	204.6	394

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  211.88  395.17  217.46     396  219.87  396.49  223.11  397.11  227.54     398
  230.91  398.56  233.71     399  240.41     400  246.88  400.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   95.66     .04  126.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         95.66  126.28            98.65   101.8  104.92             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9398

INPUT
Description:
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.18    6.45     398   10.27  396.93   13.95     396   17.15   395.1
   21.18     394   22.21  393.72   23.21  393.45   25.97  392.71   28.56     392
   35.43  391.01   43.03     390   56.35     388    82.5  387.65  114.44  387.23
  124.96  386.93  128.65  386.64  134.08  386.21  135.79  386.08   136.8     386
  141.88  385.75  145.59  385.57  148.38  385.43  150.17     386     152  386.59
  158.91  387.03  167.65  387.59  174.14     388  186.81  388.92  200.79  389.39
   202.6     390  212.88  391.15  214.18     392  222.75   392.3  224.12  392.62
  227.87  392.98  232.15  393.19  232.46  393.21  235.68  393.41  238.89  393.56
  241.36  393.69  244.69  393.87  245.13  393.89  247.11     394   255.3  394.93
  262.09  395.66  265.18     396  268.55  396.34  272.92  396.76  279.66  397.44
  280.66  397.53  281.55  397.61  285.79     398   291.8  399.12  296.37     400
   301.1  400.86

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085   35.43    .055    82.5     .04  167.65    .055  186.81    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  167.65            97.49   96.47   93.03             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9301

INPUT
Description:
Station Elevation Data    num=      83
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.19    3.07     400    4.08  399.94     4.2  399.94   13.57  399.39
    15.2  399.29   20.44  399.07   21.01  399.05   21.75  399.02   22.33     399
   33.53  398.93   34.16  398.91   34.62  398.89   50.07  398.18   51.97  398.04
   52.52     398   56.81  396.58   58.64     396   59.61  395.91   64.07  395.25
   72.56     394   73.12  393.94    74.3  393.83    84.4  392.97   90.89  392.65
   97.02  392.35  101.28  392.17  101.59  392.16  101.86  392.14  101.98  392.14
  104.04     392   106.2  392.22  109.76  392.28  110.09  392.26   110.2  392.25
  111.04  392.21   113.1  392.09  146.72     388  151.47  386.42  152.72     386
  154.95  385.26  157.77  384.32  158.73     384  160.52  383.41   161.7  383.02
  163.52  382.41  164.75     382  166.94   381.9  171.14   381.7  174.56  381.53
  176.06     382  195.49     382  197.25  382.58  198.76  383.08  201.58     384
  203.59  384.66  211.72  387.33  212.37  387.54  213.77     388  215.21  388.62
  222.39   389.2  234.24  392.69  252.67  392.11  269.21  391.61  287.95  393.96
  291.68     394  304.65  395.18  314.29  395.71  317.24  395.93  317.28  395.93
  318.14     396  320.84  396.21   321.8   396.3  324.25  396.51  326.08  396.68
  329.75  397.01  336.95   397.7  338.16  397.81  340.03     398  341.44  398.43
   347.8     400  351.27  400.78  352.31  401.05

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085   113.1    .055   161.7     .04  198.76    .055  215.21    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         161.7  198.76            115.5     105   84.84             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    42.5    98.1     405

CROSS SECTION
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RIVER: Plumtree
REACH: Plumtree RS: 9196

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.06	3.11	399.1	7.66	399.14	8.21	399.14	11.14	399.2
14.16	399.24	15.16	399.23	16.06	399.21	16.45	399.2	16.79	399.18
17.07	399.17	44.77	399	46.3	398.96	57.79	398.17	58.05	398.12
58.52	398.07	59.24	398.01	59.47	398	59.81	397.95	60.63	397.83
60.69	397.82	61.36	397.83	62.34	397.8	62.8	397.77	63.34	397.77
63.74	397.73	73.15	396.86	74.17	396.76	74.98	396.67	80.24	396
91.29	394.71	96.77	394	103.28	393.2	108.02	392.64	109.29	392.48
110.44	392.34	113.4	392	129.6	390	133.01	389.51	134.1	389.41
135.16	389.31	138.39	388.96	141.78	388.59	143.61	388.38	145.61	388.15
146.23	388.08	170.06	388	177.42	388	192.18	384.22	204	381.19
208.74	379.98	209.41	379.98	209.85	380	252.75	380	256.5	381.25
258.34	381.86	265.16	384.14	273.3	386.85	276.75	388	282.41	388.4
293.08	392.68	309.62	391.47	323.53	392.22	323.58	392.18	354.2	394
361.45	395.27	365.79	396	370.25	397.12	373.9	398	375.39	398.33
383.13	400	386.3	400.73	391.87	402	395.39	402.9		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.085	145.61	.055	204	.04	256.5	.055	276.75	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204	256.5	142.73	208.89	146.19	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
11	50.8	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8987

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.15	2.15	402.17	3.39	402.13	6.04	402.17	12.51	402.07
13.01	402.08	14.07	402.07	15.03	402.07	16.62	402.1	16.88	402.09
17.7	402.05	18.67	402	24.82	401.62	50.49	400	71.91	398.02
72.1	398	72.14	397.99	82.9	396	83.83	395.8	92.09	394
100.48	392.04	100.64	392	100.82	391.96	101.02	391.92	110.17	390
121.03	388.29	122.34	388	142.19	381.4	152.75	377.91	156.49	376.67
156.5	376.66	161.94	374.86	170.22	372.11	172.51	371.35	178.25	369.44
179.59	369	200.15	369	202.96	369.94	217.4	374.75	222.78	376.54
239.83	382.23	245.14	383.48	245.15	383.49	249.39	384.49	263.78	387.91
264.18	388	301.3	390	301.69	390.04	302.4	390.1	313.7	391.1
324.37	392	326.83	392.6	329.22	393.19	332.48	394	335.16	394.95
338.19	396	340.18	396.58	342.55	397.27	344.45	397.82	345.03	398
346.35	398.38	351.77	400	352.66	400.28	356.31	401.47	357.07	401.72
357.94	402	358.9	402.3	364.45	404	365.62	404.4	369.07	405.49

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.085	121.03	.055	161.94	.04	217.4	.055	301.3	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
161.94	217.4	177.07	233.77	177.4	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8753

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.84	3.57	392.36	4.48	392.24	6.24	392	14.25	391.04
22.57	390	39.19	388.36	42.66	388	43.14	387.95	44.71	387.76

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   45.13   387.7   53.93     387   55.07  386.91   55.91  386.89   59.98  386.86
   67.22  387.07   71.26  386.74   71.58  386.73   74.94  386.49   75.24  386.48
   79.99  386.13   80.09  386.12   81.64     386   93.34     386  122.87  376.76
  128.49     375  140.52  371.23  147.66     369  223.35     369  226.78  370.14
  229.61  371.09  231.97  371.87  232.78  372.14  236.12  373.26  237.03  373.56
  237.82  373.82  241.36     375   246.4  376.68  249.47  377.71   254.4  379.35
   262.5  382.05  269.36  384.33  280.36     388  284.57  388.25   284.6  388.25
  284.74  388.27  302.51     390  304.49  390.31  314.62     392  318.02  392.86
  322.27     394  323.63  394.41  327.41  395.54  328.32  395.82   328.9     396
  329.96  396.36  334.49     398  337.27  399.01  339.54     400  340.77  400.45
  344.57     402  346.47   402.7     350     404   351.3  404.47  352.94  405.01
  353.27  405.12

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  128.49     .04  241.36    .065  284.57    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        128.49  241.36           179.62  174.76  144.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8579

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.17    3.31     400   17.74  399.07   34.62     398   35.22  397.93
   46.41  397.26   51.75  396.96   59.26   396.5   60.57  396.41   63.23  396.27
   68.83     396   75.46  394.89   76.44  394.72   79.84  394.17   80.17  394.11
   80.95     394   93.61     392  104.26  388.45  105.61     388  110.29  386.44
   111.5     386  116.16  384.44  117.38     384  124.72  381.55  135.38     378
     140  376.46  144.25  375.04  154.76  371.54  159.39     370  162.39     369
  231.94     369  233.37  369.47  235.71  370.24  242.87   372.6  248.28  374.39
  250.03  374.96  251.19  375.34  264.68  379.79  265.33     380  265.34     380
   271.4     382  279.14  384.55  284.82  386.42  289.61     388  315.88     390
  320.59  391.65   321.5     392  322.64  392.54  325.53     394   328.7  395.54
  329.55     396  332.04  397.23  333.33     398  334.37  398.44  338.88     400
  339.68  400.16  340.45  400.35  347.58     402  352.32   402.8

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   79.84    .055  144.25     .04  251.19    .055  315.88    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        144.25  251.19           157.46  204.23  180.47             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8374

INPUT
Description:
Station Elevation Data    num=      83
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  401.05     .39  401.02   14.71     400   17.51  399.78   17.87  399.76
   18.37  399.72   19.63  399.64   20.25   399.6      22  399.47   31.49  398.77
   42.12     398   43.17  397.92   43.74  397.88   48.54  397.52   49.54  397.46
   51.19  397.35   54.98  397.06   67.52   396.4   67.98  396.37    72.6  396.03
      73     396   77.65  395.72   79.49   395.6   80.67  395.52   82.29  395.41
   83.66  395.31   85.08   395.2  104.07     394  108.69  393.72  110.21  393.61
  111.59  393.51  116.39  393.15  122.53  392.72  129.15  392.19  131.43     392
  140.54  390.76  146.03     390  147.63  389.84  149.67  389.65  153.21  387.96
  158.74     386  158.89  385.95   164.4     384  185.62  377.15  186.12     377
  186.48  376.89  186.92  376.76  187.49  376.58  188.25  376.34  189.22  376.03
   189.3     376  189.97  375.78  191.13  375.39   195.3     374  199.73  372.52
  208.44  369.62   210.3     369  260.45     369  272.5  372.98  274.84  373.75
  276.51   374.3  280.15  375.48  286.75  377.63  292.45  379.53  299.95     382
  305.64  383.88  318.14     388  321.38     388  325.59  388.89  331.68     390
  334.17  390.71  336.02   391.3   338.3     392  343.97  393.91  344.22     394
  345.13  394.36  349.46     396  350.95   396.6  354.45     398  356.99  399.37
  358.18     400  359.59  400.71  360.34  401.09

Manning's n Values        num=       5
```

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	149.67	.055	191.13	.04	280.15	.055	318.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
191.13	280.15	136.5	145.45	139.79	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8229

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.36	5.81	394.06	6.29	394	7.37	393.95	45.41	392
69.28	390.22	72.15	390	72.18	390	72.26	389.98	72.54	389.95
73	389.89	74.69	389.72	75.45	389.65	75.92	389.61	75.99	389.6
79.77	389.37	82.3	389.25	100.97	388.39	106.97	388	109.76	387.08
113.01	386	115.77	385.09	119.05	384	121.79	383.09	125.09	382
127.8	381.1	131.12	380	133.82	379.11	137.16	378	139.68	377.17
139.84	377.11	143.2	376	145.85	375.12	149.24	374	151.86	373.13
155.27	372	157.88	371.14	161.31	370	162.6	369.57	164.33	369
240.08	369	242.87	369.93	243.08	370	243.37	370.1	248.68	371.87
249.08	372	254.7	373.87	255.09	374	257.95	374.95	260.72	375.88
261.09	376	265.96	377.62	266.74	377.88	267.1	378	268	378.3
270.59	379.16	270.6	379.17	272.75	379.88	273.1	380	278.76	381.89
279.1	382	284.77	383.89	285.1	384	290.78	385.89	291.1	386
296.78	387.9	297.1	388	308.33	389.98	308.55	389.98	309.46	389.99
310.08	390	315.47	391.1	319.76	391.98	319.9	392	320.02	392.04
321.07	392.37	326	393.9	326.33	394	328.6	394.86		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.97	.055	145.85	.04	261.09	.055	308.33	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
145.85	257.95	133.08	135.16	130.38	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8094

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.62	2.48	394.2	3.72	394	3.8	393.98	4.1	393.92
4.62	393.84	5.04	393.78	5.44	393.73	5.7	393.7	24.53	392.35
27.13	392.1	27.41	392.08	28.22	392	37.38	391.13	48.65	390
55.52	389.55	79.43	388.11	79.45	388.11	79.5	388.1	79.73	388.02
79.79	388	96.53	386.44	99.06	386.2	101.25	386	102.59	386
106.13	384.82	108.6	384	124.81	378.6	126.63	378	131.11	376.51
132.64	376	134.05	375.53	137.46	374.39	143.88	372.26	144.66	372
144.72	371.98	150.67	370	153.67	369	249.25	369	252.25	370
257.97	371.91	258.25	372	268.66	375.47	270.25	376	273.41	377.05
274.41	377.38	281.97	379.91	288.26	382	294.03	383.92	294.26	384
300.26	386	306.08	387.94	306.26	388	311.73	389.81	329.62	392
337.85	393.59	339.81	394	342.65	394.79	346.84	396	349.21	396.76
352.92	398	358.41	399.96	358.53	400	358.64	400.03	368.44	402
368.97	402.04	369.04	402.04	369.13	402.05	375.87	402.56	376.87	402.63
378.22	402.73	382.48	403.06	386.91	403.38	388.95	403.53	390.87	403.66

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	102.59	.055	134.05	.04	268.66	.055	311.73	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
134.05	268.66	130.77	139.81	134.21	.3	.5

INLINE STRUCTURE

RIVER: Plumtree
REACH: Plumtree RS: 8000

INPUT
Description:
Distance from Upstream XS = 56
Deck/Roadway Width = 1.5
Weir Coefficient = 2.6
Weir Embankment Coordinates num = 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
95	387	185	387	185	381	195	381	195	369.5
205	369.5	205	381	215	381	215	387	305	387

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Weir crest shape = Broad Crested

INLINE STRUCTURE OUTPUT Profile #1-YR Inline Structure

E.G. Elev (ft)	371.74	Weir Sta Lft (ft)	195.00
W.S. Elev (ft)	371.73	Weir Sta Rgt (ft)	205.00
Q Total (cfs)	87.00	Min El Weir Flow (ft)	369.51
Q Weir (cfs)	87.00	Wr Top Wdth (ft)	10.00
Q Gates (cfs)		Weir Max Depth (ft)	2.24
Q Culv (cfs)		Weir Avg Depth (ft)	2.24
Q Inline RC (cfs)		Weir Flow Area (sq ft)	22.36
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.32
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #2-YR Inline Structure

E.G. Elev (ft)	372.48	Weir Sta Lft (ft)	195.00
W.S. Elev (ft)	372.48	Weir Sta Rgt (ft)	205.00
Q Total (cfs)	134.00	Min El Weir Flow (ft)	369.51
Q Weir (cfs)	134.00	Wr Top Wdth (ft)	10.00
Q Gates (cfs)		Weir Max Depth (ft)	2.98
Q Culv (cfs)		Weir Avg Depth (ft)	2.98
Q Inline RC (cfs)		Weir Flow Area (sq ft)	29.83
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.45
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #10-YR Inline Structure

E.G. Elev (ft)	374.52	Weir Sta Lft (ft)	195.00
W.S. Elev (ft)	374.52	Weir Sta Rgt (ft)	205.00
Q Total (cfs)	293.00	Min El Weir Flow (ft)	369.51
Q Weir (cfs)	293.00	Wr Top Wdth (ft)	10.00
Q Gates (cfs)		Weir Max Depth (ft)	5.02
Q Culv (cfs)		Weir Avg Depth (ft)	5.02
Q Inline RC (cfs)		Weir Flow Area (sq ft)	50.24
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.64
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #50-YR Inline Structure

E.G. Elev (ft)	376.96	Weir Sta Lft (ft)	195.00
W.S. Elev (ft)	376.95	Weir Sta Rgt (ft)	205.00
Q Total (cfs)	529.00	Min El Weir Flow (ft)	369.51
Q Weir (cfs)	529.00	Wr Top Wdth (ft)	10.00
Q Gates (cfs)		Weir Max Depth (ft)	7.46
Q Culv (cfs)		Weir Avg Depth (ft)	7.46
Q Inline RC (cfs)		Weir Flow Area (sq ft)	74.55
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.61
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #100-YR Inline Structure

E.G. Elev (ft)	378.16	Weir Sta Lft (ft)	195.00
W.S. Elev (ft)	378.15	Weir Sta Rgt (ft)	205.00
Q Total (cfs)	662.00	Min El Weir Flow (ft)	369.51
Q Weir (cfs)	662.00	Wr Top Wdth (ft)	10.00
Q Gates (cfs)		Weir Max Depth (ft)	8.66
Q Culv (cfs)		Weir Avg Depth (ft)	8.66
Q Inline RC (cfs)		Weir Flow Area (sq ft)	86.55
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.59
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #200-YR Inline Structure

E.G. Elev (ft)	379.34	Weir Sta Lft (ft)	195.00
W.S. Elev (ft)	379.33	Weir Sta Rgt (ft)	205.00
Q Total (cfs)	802.00	Min El Weir Flow (ft)	369.51
Q Weir (cfs)	802.00	Wr Top Wdth (ft)	10.00
Q Gates (cfs)		Weir Max Depth (ft)	9.84
Q Culv (cfs)		Weir Avg Depth (ft)	9.84
Q Inline RC (cfs)		Weir Flow Area (sq ft)	98.35
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.57
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7954

INPUT
Description:
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	390.87	1.06	390.76	5.56	390.36	8.09	390.17	9.7	390.06
12.95	389.88	15.86	389.75	20.41	389.55	21.37	389.49	22.17	389.45
26.06	389.27	27.8	389.18	29.65	389.1	31.21	389.02	32.58	388.93
33.19	388.89	40.18	388.65	41.65	388.54	44.29	388.45	47.14	388.32
47.67	388.28	49.22	388.2	50.93	388.11	52.62	388	54.06	387.89
58.14	387.52	60.02	387.34	70.48	386.32	73.92	386	75.83	385.87
81.99	385.49	86.05	385.25	88.16	385.06	94.21	384.69	95.33	384.57
98.59	384.23	99.42	384.17	100.41	384	100.78	383.88	106.5	382
106.97	381.85	112.59	380	113.17	379.81	118.68	378	119.42	377.76
124.76	376	125.7	375.69	130.85	374	132.06	373.6	136.94	372
138.53	371.48	143.03	370	145.56	369.17	149.12	368	260.43	368

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  266.01  369.82  266.57     370   271.6  371.64  272.65     372  272.68  372.01
  273.46  372.27  273.48  372.27  278.67     374  278.76  374.03   281.8  375.04
  284.68     376  284.84  376.05  290.69     378  290.92  378.08  296.71     380
     297   380.1  302.72     382  303.08  382.12  308.73     384  310.71  384.55
  316.22     386  323.56  387.01  330.85     388  342.34   389.5  345.84     390
  347.98   390.9  350.48     392  352.14  392.75  355.01     394  357.39  394.99
  359.91     396  362.57  396.94  365.15  397.64  366.49     398  375.99  398.82

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  100.78    .055  136.94     .04  272.65    .055  308.73    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.94  272.65           154.67  153.64  151.55             .3       .5

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7800

INPUT
Description:
Station Elevation Data    num=      82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  389.23     6.4  388.77   18.95     388   32.05  387.12   34.38  386.96
   40.95  386.52   41.74  386.47   42.88  386.38   48.62     386   49.93  385.92
   50.74  385.86   62.21   385.1   65.97  384.84    73.9  384.32   75.81   384.2
   77.92  384.08   78.06  384.07   79.37     384   79.61  383.95   79.79  383.92
    79.9  383.91    81.2  383.76   81.59  383.72   81.85  383.71   82.72  383.74
   88.11  383.68   89.08  383.64   89.68  383.58   90.64  383.53   91.54  383.48
   92.48  383.38   93.55  383.29   96.76     383   98.06  382.88   99.04  382.78
  102.88  382.37  106.07     382  112.51     380  115.15  379.12  118.51     378
  121.16  377.12  124.51     376  127.17  375.11  129.44  374.36  130.51     374
  133.18  373.11  136.51     372  139.19  371.11  142.51     370  148.51     368
  276.07     368  278.05  368.66  280.26  369.39  282.09     370  286.43  371.44
  288.11     372  292.49  373.45  294.13     374  298.56  375.47  300.15     376
  304.62  377.48  306.17     378  310.69   379.5  312.19     380  316.75  381.52
  318.21     382  322.82  383.53  324.23     384  331.19  385.58  333.53     386
   340.6  386.91  350.42     388  352.19  388.23  353.07  388.36  356.29  388.87
  360.39  389.49  361.84  389.72  363.36     390  364.77  390.43  366.25  390.85
  370.11     392  372.25  392.58

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.07    .055  136.51     .04  288.11    .055  322.82    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.51  288.11           245.72  252.82  248.16             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7548

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.07     .78     384    5.11  383.66    7.63   383.5   11.97  383.17
   14.64  382.99   17.76  382.76   24.91  382.21   27.52     382   28.85  381.83
   29.51  381.79   32.65  381.46   35.07  381.21   46.63     380   59.52  379.12
   61.36     379   65.17  378.74   75.34  378.13   77.34  378.05   77.62     378
   83.55  378.07   85.43  378.08   88.35  378.07   95.64  378.09   99.22     378
     100  377.77  106.04     376  112.14  374.21  112.86     374  113.56  373.79
  119.68     372  120.35   371.8   126.5     370  127.14  369.81  133.32     368
  318.05     368  323.01  369.62  323.87   369.9  324.17     370  329.08   371.6
   330.3     372  335.14  373.58  336.42     374  341.21  375.57  342.54     376
  347.28  377.55  348.66     378  353.35  379.53  354.78     380  356.18  380.46
  360.91     382  362.43   382.5  367.03     384  377.97  385.33  382.29     386
  383.74  386.27  393.23     388  398.11     389  402.86     390  406.24  390.27
  406.63  390.26  409.53     390  411.75  389.85   413.2  389.77   418.1  389.46
  420.07  389.37  423.04  389.17  425.75  388.96   431.8   389.4  440.42     390
   442.9  390.41  445.97  390.94

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   99.22    .055  119.68     .04   330.3    .055  360.91    .085
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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        119.68   330.3           166.35  180.41  207.73             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7367

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.88   17.18  384.04   17.79     384   19.31  383.69   27.57     382
   33.56  381.11   40.22     380   65.41     378   74.01  375.14   77.45     374
   80.87  372.86   83.46     372   86.95  370.84   89.48     370   93.04  368.82
    95.5     368  338.44     368  350.43  371.49  352.19     372  357.36  373.51
  364.28  375.52  372.79     378  386.56  377.48  387.24  377.47  389.22  377.48
  389.83  377.49  393.84  377.67  396.67  377.79     398  377.85   399.4  377.89
  400.73  377.95  403.02     378  405.65   378.1  407.78  378.19  409.29  378.26
  410.92  378.34  413.44  378.46  417.48  378.69  420.02  378.83  428.31  379.29
   429.6  379.36  436.31  379.72  436.88  379.75  441.68     380  449.79  380.68
  452.35   380.9  458.41  381.46  460.97  381.69  464.19     382  470.57  382.96
  477.61     384  480.68  384.57  488.87     386  495.27  386.99  498.55  387.34

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   40.22    .055   83.46     .04  352.19    .055  386.56    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         83.46  352.19           131.12  150.84   173.6             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7216

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  385.75    1.08  385.65    5.95  385.32   10.54  384.89   18.99  384.19
   19.48  384.13   19.51  384.13   19.72  384.03   19.77  384.03   19.83     384
   21.34   383.6   24.22  382.82   25.18  382.55   27.46     382   33.57  381.07
   41.34  379.98   60.13     379   65.81  378.72   74.41     378   79.97   376.3
   80.96     376   81.93  375.71   87.51     374   93.22  372.26   94.06     372
   99.93  370.21  100.61     370  106.65  368.15  107.16     368  245.44     368
  252.89  368.37  261.49   368.8  261.51   368.8  267.12  369.08  285.09     370
  286.17  370.06  292.34  370.37  297.32  372.03  298.57  372.44  303.23     374
  303.43  374.06  309.23     376  309.53   376.1  315.23     378  324.96     378
  344.89  379.72  346.99   379.9  348.24     380  355.59  380.52  358.24  380.72
  369.12  381.55  372.54   381.8  375.03     382  377.33  382.49  384.79     384
  385.68   384.2  393.83     386  394.81  386.17  399.71  387.05  405.49     388
  406.42  388.18   407.5  388.41  413.63   389.1  417.54   389.6  418.61  389.74
  420.77     390   421.3  390.07  421.95  390.14  429.79  391.08  433.06  391.43
  434.12  391.56  434.45  391.61  438.52     392  445.08  392.32  449.48  392.54
  451.09  392.66

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   65.81    .055   94.06     .04  297.32    .055  324.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         94.06  297.32           182.85  186.42  163.53             .3       .5
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
   377.1   439.5     390       F

INLINE STRUCTURE


RIVER: Plumtree
REACH: Plumtree           RS: 7100

INPUT
Description:
Distance from Upstream XS =      44
```

Deck/Roadway Width = 1.5
Weir Coefficient = 2.6
Weir Embankment Coordinates num = 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
70	378	150	378	150	378	180	378	180	373
210	373	210	368.5	222	368.5	222	373	252	373
252	378	282	378	282	378	316	378		

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Weir crest shape = Broad Crested

INLINE STRUCTURE OUTPUT Profile #1-YR Inline Structure

E.G. Elev (ft)	370.21	Weir Sta Lft (ft)	210.00
W.S. Elev (ft)	370.21	Weir Sta Rgt (ft)	222.00
Q Total (cfs)	69.00	Min El Weir Flow (ft)	368.51
Q Weir (cfs)	69.00	Wr Top Wdth (ft)	12.00
Q Gates (cfs)		Weir Max Depth (ft)	1.71
Q Culv (cfs)		Weir Avg Depth (ft)	1.71
Q Inline RC (cfs)		Weir Flow Area (sq ft)	20.52
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.80
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

INLINE STRUCTURE OUTPUT Profile #2-YR Inline Structure

E.G. Elev (ft)	370.84	Weir Sta Lft (ft)	210.00
W.S. Elev (ft)	370.84	Weir Sta Rgt (ft)	222.00
Q Total (cfs)	110.00	Min El Weir Flow (ft)	368.51
Q Weir (cfs)	110.00	Wr Top Wdth (ft)	12.00
Q Gates (cfs)		Weir Max Depth (ft)	2.34
Q Culv (cfs)		Weir Avg Depth (ft)	2.34
Q Inline RC (cfs)		Weir Flow Area (sq ft)	28.13
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.85
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

INLINE STRUCTURE OUTPUT Profile #10-YR Inline Structure

E.G. Elev (ft)	372.70	Weir Sta Lft (ft)	210.00
W.S. Elev (ft)	372.70	Weir Sta Rgt (ft)	222.00
Q Total (cfs)	260.00	Min El Weir Flow (ft)	368.51
Q Weir (cfs)	260.00	Wr Top Wdth (ft)	12.00
Q Gates (cfs)		Weir Max Depth (ft)	4.20
Q Culv (cfs)		Weir Avg Depth (ft)	4.20
Q Inline RC (cfs)		Weir Flow Area (sq ft)	50.46
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.87
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

INLINE STRUCTURE OUTPUT Profile #50-YR Inline Structure

E.G. Elev (ft)	374.03	Weir Sta Lft (ft)	180.00
W.S. Elev (ft)	374.03	Weir Sta Rgt (ft)	252.00
Q Total (cfs)	514.00	Min El Weir Flow (ft)	368.51
Q Weir (cfs)	514.00	Wr Top Wdth (ft)	72.00
Q Gates (cfs)		Weir Max Depth (ft)	5.53
Q Culv (cfs)		Weir Avg Depth (ft)	1.78
Q Inline RC (cfs)		Weir Flow Area (sq ft)	128.35
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.82
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

INLINE STRUCTURE OUTPUT Profile #100-YR Inline Structure

E.G. Elev (ft)	374.56	Weir Sta Lft (ft)	180.00
W.S. Elev (ft)	374.55	Weir Sta Rgt (ft)	252.00
Q Total (cfs)	649.00	Min El Weir Flow (ft)	368.51
Q Weir (cfs)	649.00	Wr Top Wdth (ft)	72.00
Q Gates (cfs)		Weir Max Depth (ft)	6.06
Q Culv (cfs)		Weir Avg Depth (ft)	2.31
Q Inline RC (cfs)		Weir Flow Area (sq ft)	166.18
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.89
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

INLINE STRUCTURE OUTPUT Profile #200-YR Inline Structure

E.G. Elev (ft)	375.08	Weir Sta Lft (ft)	180.00
W.S. Elev (ft)	375.08	Weir Sta Rgt (ft)	252.00
Q Total (cfs)	788.00	Min El Weir Flow (ft)	368.51
Q Weir (cfs)	788.00	Wr Top Wdth (ft)	72.00
Q Gates (cfs)		Weir Max Depth (ft)	6.58
Q Culv (cfs)		Weir Avg Depth (ft)	2.83
Q Inline RC (cfs)		Weir Flow Area (sq ft)	203.91
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.93
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7030

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.29	2.41	387	10.05	386	29.45	384.45	32.78	384.15
33.33	384	36.52	383.46	40.31	382.87	43.31	382.38	46.06	382
46.12	381.98	48.59	381.84	49.64	381.82	49.97	381.8	50.4	381.79
50.62	381.77	71.01	380.53	81.91	380	92.52	379.05	103.93	378
123.79	376.72	134.74	376.11	135.07	376.05	135.57	376	135.6	375.99
136.76	376	147.1	372.58	164.01	367	255.05	367	259.75	368.48
261.56	369.06	262.29	369.29	263.48	369.67	268.09	371.12	272.1	372.39
279.83	374.83	283.53	376	309.7	376.93	312.89	376.93	319.01	378
322.75	379.67	328.88	379.92	332.16	380	333.98	380.26	345.53	382
358.26	384	368.51	385.52	371.9	386	379.53	387.21	385.4	388
395.57	389.56	398	389.92	398.64	390	402.14	390.27	406.61	390.59
410.26	390.83	412.74	390.96	415.65	391.11	416.49	391.16	419.22	391.29
423.04	391.64	423.34	391.66	427.09	392	428.37	392.13	432.56	392.47
446.6	393.09								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	135.6	.055	147.1	.04	272.1	.055	312.89	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
147.1	272.1	146.71	137.19	128.81	.3	.5

Blocked Obstructions num= 1

Sta L	Sta R	Elev
372.8	404.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6893

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.2	2.38	382.99	8.39	382.4	12.65	382	20.07	381.43
21.04	381.32	23.89	381.07	32.28	380	33.24	379.94	36.89	379.63
54.28	378.25	56.67	378	75.57	376.96	78.59	376.8	93.69	376
94.91	375.96	96.44	375.86	107.86	376	117.4	372.83	119.9	372
134.92	367	226.66	367	229.64	368	240.97	371.78	241.65	372.01
246.03	373.47	246.05	373.48	253.6	376	279.8	378.38	290.19	380
292.23	380.3	302.91	382	311	382.83	315.48	383.17	321.02	383.61
322.67	383.75	325.93	384	327.14	384.17	327.77	384.24	330.51	384.6
331.06	384.66	331.73	384.74	332.6	384.85	333.79	385.01	335.83	385.3
339.56	385.84	340.65	386	353.87	389.13	355.81	389.6	357.43	390
357.61	390.01	361.03	390.33	362.39	390.43	362.61	390.44	365.01	390.49
366.06	390.54	368.05	390.54	368.79	390.56	380.19	390.59	388.25	390.86

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	96.44	.055	119.9	.04	241.65	.055	279.8	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
119.9	241.65	120.01	126.53	128.56	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
333.6	364.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6766

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.56	7.75	380.34	9.62	380.18	11.59	380.1	27.69	379.6
34.11	379.36	42.51	378.88	44.96	378.81	50.68	378.9	55.82	378.75
59.91	378.59	69.06	378.34	72.96	378.1	76.53	377.98	77.17	377.98
78.44	377.94	85.15	377.54	107.79	376	107.82	376	118.26	372.52
134.84	367	267.4	367	272.38	368.67	272.4	368.68	278.85	370.84
284.23	372.64	293.57	375.77	294.27	376	310.54	376.12	337.65	378

```
   341.5  378.38  344.84  378.75  345.88  378.88  348.32  378.95   351.5  379.16
  353.85  379.26   354.2  379.31  358.69  379.46  365.18  379.62  366.28  379.73
  367.47     380  369.55   380.4  370.86  380.58  373.19  381.02  375.37  381.31
  379.99     382  390.01     384   392.8  384.16   404.5  384.66  418.06  384.49
  421.86   384.5  423.36  384.56  430.23  384.62  434.86  384.68  447.58  385.29
  449.06   385.3  453.71  385.19  463.39  384.68  463.96  384.68  468.82  384.87
  472.42  384.83

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   85.15    .055  118.26     .04  284.23    .055  310.54    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        118.26  284.23            99.27  103.53  103.11             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   367.4   402.8     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6663

INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  387.81    5.71  387.58   42.61  386.42   45.32  386.36   48.81  386.32
   50.39  386.29   52.99  386.11   54.86     386   63.52     384    72.4     382
   77.53  381.09   78.45  381.02   81.39  381.16   82.73  381.16   83.84  381.06
   85.14  381.03   90.04   380.7   91.84  380.48   94.76     380  107.44  379.41
  109.18  379.29  112.44  379.13  115.99  378.92  130.42     378  130.89  377.95
  160.38  376.65  180.56  376.17  184.97  375.98  189.81  375.85  195.23  375.67
  199.49  375.58  204.56  375.43  221.81  372.49  254.15     367  356.77     367
  359.71     368  373.17  372.51  383.57     376  391.75     376  435.14  377.35
  436.73  377.48  438.03   377.5  441.59  377.71  445.02     378  461.23     380
  462.22  380.21  465.24  380.76  470.16  381.69  472.06     382  479.53  383.54
  481.93     384  486.28  384.27  488.32  384.35  505.54  384.31  515.18  384.49
  518.45  384.46   533.6  385.11  535.47  385.12  546.46  384.34  548.83   384.3

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  204.56    .055  221.81     .04  373.17    .055  391.75    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        221.81  373.17            90.58   94.53   97.72             .3       .5
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    49.7    87.5     390   451.6   492.3     390

INLINE STRUCTURE


RIVER: Plumtree
REACH: Plumtree           RS: 6600

INPUT
Description:
Distance from Upstream XS =      30
Deck/Roadway Width        =     1.5
Weir Coefficient          =     2.6
 Weir Embankment Coordinates    num =       10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     180     376     245     376     245     372     285     372     285   367.5
     297   367.5     297     372     337     372     337     376     395     376

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Weir crest shape                            = Broad Crested


INLINE STRUCTURE OUTPUT  Profile #1-YR  Inline Structure

  E.G. Elev (ft)               369.86    Weir Sta Lft (ft)            285.00
  W.S. Elev (ft)               369.86    Weir Sta Rgt (ft)            297.00
  Q Total (cfs)                 64.00    Min El Weir Flow (ft)        367.51
```

Q Weir (cfs)	64.00	Wr Top Wdth (ft)	12.00
Q Gates (cfs)		Weir Max Depth (ft)	2.36
Q Culv (cfs)		Weir Avg Depth (ft)	2.36
Q Inline RC (cfs)		Weir Flow Area (sq ft)	28.31
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.98
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #2-YR Inline Structure

E.G. Elev (ft)	370.48	Weir Sta Lft (ft)	285.00
W.S. Elev (ft)	370.48	Weir Sta Rgt (ft)	297.00
Q Total (cfs)	106.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	106.00	Wr Top Wdth (ft)	12.00
Q Gates (cfs)		Weir Max Depth (ft)	2.98
Q Culv (cfs)		Weir Avg Depth (ft)	2.98
Q Inline RC (cfs)		Weir Flow Area (sq ft)	35.82
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.96
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #10-YR Inline Structure

E.G. Elev (ft)	372.16	Weir Sta Lft (ft)	245.00
W.S. Elev (ft)	372.16	Weir Sta Rgt (ft)	337.00
Q Total (cfs)	255.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	255.00	Wr Top Wdth (ft)	92.00
Q Gates (cfs)		Weir Max Depth (ft)	4.66
Q Culv (cfs)		Weir Avg Depth (ft)	0.75
Q Inline RC (cfs)		Weir Flow Area (sq ft)	68.78
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.90
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #50-YR Inline Structure

E.G. Elev (ft)	373.61	Weir Sta Lft (ft)	245.00
W.S. Elev (ft)	373.61	Weir Sta Rgt (ft)	337.00
Q Total (cfs)	510.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	510.00	Wr Top Wdth (ft)	92.00
Q Gates (cfs)		Weir Max Depth (ft)	6.11
Q Culv (cfs)		Weir Avg Depth (ft)	2.20
Q Inline RC (cfs)		Weir Flow Area (sq ft)	202.27
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.97
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #100-YR Inline Structure

E.G. Elev (ft)	374.27	Weir Sta Lft (ft)	245.00
W.S. Elev (ft)	374.26	Weir Sta Rgt (ft)	337.00

Q Total (cfs)	645.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	645.00	Wr Top Wdth (ft)	92.00
Q Gates (cfs)		Weir Max Depth (ft)	6.77
Q Culv (cfs)		Weir Avg Depth (ft)	2.86
Q Inline RC (cfs)		Weir Flow Area (sq ft)	262.85
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.98
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

INLINE STRUCTURE OUTPUT Profile #200-YR Inline Structure

E.G. Elev (ft)	374.88	Weir Sta Lft (ft)	245.00
W.S. Elev (ft)	374.87	Weir Sta Rgt (ft)	337.00
Q Total (cfs)	783.00	Min El Weir Flow (ft)	367.51
Q Weir (cfs)	783.00	Wr Top Wdth (ft)	92.00
Q Gates (cfs)		Weir Max Depth (ft)	7.38
Q Culv (cfs)		Weir Avg Depth (ft)	3.46
Q Inline RC (cfs)		Weir Flow Area (sq ft)	318.58
Q Outlet TS (cfs)		Weir Coef (ft^1/2)	2.600
Q Breach (cfs)		Weir Submerg	0.99
Breach Avg Velocity (ft/s)		Q Gate Group (cfs)	0.00
Breach Flow Area (sq ft)		Gate Open Ht (ft)	
Breach WD (ft)		Gate #Open	
Breach Top El (ft)		Gate Area (sq ft)	
Breach Bottom El (ft)		Gate Submerg	
Breach SSL (ft)		Gate Invert (ft)	
Breach SSR (ft)		Gate Weir Coef	

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6568

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.88	11.84	387.56	41.49	386.42	44.7	386.32	47.75	386.21
48.2	386.2	51.49	386.19	52.85	386.15	53.93	386.14	56.03	386.06
57.13	386	62.1	385.38	72.23	384.41	73.61	384.08	74	384
78.37	383.37	81.15	382.86	83.41	382.52	85.95	382	87.39	381.89
89.26	381.77	106.91	380.23	109.52	380.12	112.81	380	123.86	379.46
127.28	379.12	128.69	379.02	131.4	378.74	133.26	378.6	138.52	378
144.95	377.67	154.93	377.2	167.84	376.57	179.91	376	190.81	375.63
206.03	375.07	215.11	374.75	231.43	374.02	231.55	374	290	372
296	370	302	368	305	367	315	367	318	368
324	370	330	372	333.89	373.01	335.3	373.05	354.94	374.07
388	376.19	406.97	378	432.51	380	436.02	380.51	440.79	381.03
449.38	382	453.12	382.55	464.72	383.92	465.61	384	472.99	385.68
474.22	386	482.07	387.25	486.94	388	503.32	390	506.03	390.12
516.08	390.61	558.49	391.41	562.74	391.48	574.89	391.54		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	290	.04	330	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
290	330	112.95	114.27	115.74	.3	.5

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
56.9	70	395	480	528.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6454

INPUT
Description:

Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.74	7.58	382.41	11.61	382.36	18.35	382.85	20.37	382.77
21.37	382.79	29.92	382.63	32.76	382.6	39.52	382.39	47.69	382
53.79	381.37	55.59	381.15	62.67	380	71.51	378.91	77.75	378
80.09	377.84	81.89	377.87	84.21	378	85.66	378.04	91.88	378.33
93.96	378.47	103.28	378.95	112.28	379.59	117.21	379.85	119.53	380
122.79	380.14	126.31	380.18	133.22	380	134.81	379.84	137.81	379.45
141.48	378.79	145.53	378	155.89	376	166.96	373.47	173.88	373.47
191.09	372.71	198	372	204	370	210	368	213	367
218	367	221	368	227	370	233	372	245.49	373.6
269.36	373.99	286.75	373.99	309.85	374	325.09	374.82	342.86	375.85
347.28	376.79	353.2	378	358.5	378.88	365.42	379.84	366.88	380
374.5	381.38	377.36	382	383.44	382.65	394.15	384	397.08	384.34
402.2	384.86	404.24	385.01	407.53	385.3	408.74	385.37	414.73	385.6
419.68	385.94	428.4	386.28	432.3	386.26	436.12	386.41	452.71	387.66
457.68	388	470.4	388.25						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	198	.04	233	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
198	233	102.69	103.78	104.74	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
120.4	125.7	385

LATERAL STRUCTURE

RIVER: Plumtree
REACH: Plumtree RS: 6375

INPUT
Description:
Lateral structure position = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width = 1
Weir Coefficient = 2
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 2

Sta	Elev	Sta	Elev
0	385	50	385

Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Circular	5	

FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	2150	.013	.013	0	.5	1

Upstream Elevation = 368
  Centerline Station = 20
Downstream Elevation = 358
  Centerline Station = 50

LATERAL STRUCTURE OUTPUT Profile #1-YR Culv Group: Culvert #1

E.G. US. (ft)	369.70	Weir Sta US (ft)	
W.S. US. (ft)	369.63	Weir Sta DS (ft)	
E.G. DS (ft)	369.56	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	369.45	Wr Top Wdth (ft)	
Q US (cfs)	71.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	14.00	Weir Avg Depth (ft)	
Q DS (cfs)	57.14	Weir Flow Area (sq ft)	
Perc Q Leaving	19.52	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	14.00	Q Culv Group (cfs)	14.00
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00

Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

LATERAL STRUCTURE OUTPUT Profile #2-YR Culv Group: Culvert #1

E.G. US. (ft)	370.27	Weir Sta US (ft)	
W.S. US. (ft)	370.18	Weir Sta DS (ft)	
E.G. DS (ft)	370.13	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	369.98	Wr Top Wdth (ft)	
Q US (cfs)	110.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	24.50	Weir Avg Depth (ft)	
Q DS (cfs)	85.76	Weir Flow Area (sq ft)	
Perc Q Leaving	22.04	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	24.50	Q Culv Group (cfs)	24.50
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

LATERAL STRUCTURE OUTPUT Profile #10-YR Culv Group: Culvert #1

E.G. US. (ft)	371.82	Weir Sta US (ft)	
W.S. US. (ft)	371.68	Weir Sta DS (ft)	
E.G. DS (ft)	371.68	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	371.48	Wr Top Wdth (ft)	
Q US (cfs)	271.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	65.58	Weir Avg Depth (ft)	
Q DS (cfs)	206.12	Weir Flow Area (sq ft)	
Perc Q Leaving	23.94	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	65.58	Q Culv Group (cfs)	65.58
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than

1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

LATERAL STRUCTURE OUTPUT Profile #50-YR Culv Group: Culvert #1

E.G. US. (ft)	373.42	Weir Sta US (ft)	
W.S. US. (ft)	373.20	Weir Sta DS (ft)	
E.G. DS (ft)	373.29	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	373.00	Wr Top Wdth (ft)	
Q US (cfs)	542.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	119.43	Weir Avg Depth (ft)	
Q DS (cfs)	424.60	Weir Flow Area (sq ft)	
Perc Q Leaving	21.66	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	119.43	Q Culv Group (cfs)	119.43
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

LATERAL STRUCTURE OUTPUT Profile #100-YR Culv Group: Culvert #1

E.G. US. (ft)	374.08	Weir Sta US (ft)	
W.S. US. (ft)	373.83	Weir Sta DS (ft)	
E.G. DS (ft)	373.95	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	373.62	Wr Top Wdth (ft)	
Q US (cfs)	691.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	143.29	Weir Avg Depth (ft)	
Q DS (cfs)	545.44	Weir Flow Area (sq ft)	
Perc Q Leaving	21.07	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	143.29	Q Culv Group (cfs)	143.29
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

LATERAL STRUCTURE OUTPUT Profile #200-YR Culv Group: Culvert #1

E.G. US. (ft)	374.70	Weir Sta US (ft)	
W.S. US. (ft)	374.45	Weir Sta DS (ft)	
E.G. DS (ft)	374.58	Min El Weir Flow (ft)	385.00
W.S. DS (ft)	374.23	Wr Top Wdth (ft)	
Q US (cfs)	844.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	168.19	Weir Avg Depth (ft)	
Q DS (cfs)	675.92	Weir Flow Area (sq ft)	
Perc Q Leaving	19.91	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	168.19	Q Culv Group (cfs)	168.19
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2150.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	368.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	358.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6350

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.25	2.84	383.98	4.85	383.88	29.21	382.05	29.42	382
31.52	381.83	32.17	381.8	32.46	381.78	34.04	381.73	35.06	381.64
53.47	380.4	61.23	380	61.52	379.95	62.6	379.83	66.18	379.72
67.82	379.63	68.74	379.59	124.99	378	139.11	377.29	159.11	376.32
161.58	376.22	169.81	376	175.65	375.83	176.25	375.83	201	374.61
220.13	373.39	226.47	371.43	230.05	370.32	235.85	369.8	238.08	367.36
241.57	366.97	246.9	368.37	249.25	372.63	256.57	374.75	266.03	377.5
266.59	378	329.45	378	332.13	377.82	334.24	377.69	335.82	377.59
339.75	377.35	347.23	377.86	349.56	378	359.53	377.16	360.29	377.08
378.66	378	382.15	378.35	383.71	378.55	386.87	378.91	388.05	379.05
394.9	380	395.88	380.18	400.2	380.85	405.44	381.69	407.44	382
409.21	382.33	411.05	382.5	417.68	383.44	420.21	383.65	423.51	383.96
426	384.23	427.13	384.2	428.56	384.3	433.67	384.73	437.93	385.11
441.27	385.38	449.14	386.13	468.97	388				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	220.13	.04	249.25	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
220.13	249.25	52.33	53.78	55.24	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
264.6	271.9	390	F
325.6	345.5	390	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
271.9	325.6	390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6296

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.85	5.73	386.49	14.33	386	18.53	385.51	23.71	384.86
25.79	384.56	29.31	384	30.39	383.8	37.57	382.43	39.51	382.02
41.76	381.69	54.85	380	70.55	379.5	94.75	378.51	95.08	378.49
95.41	378.49	98.12	378.36	99.34	378.31	103.26	378.2	106.66	378.14
108.29	378.08	109.53	378.06	141.16	376.68	172.07	375.5	191.67	374.94
202.55	371.87	209.11	370.03	213.11	368	215.11	367	216.11	366.5
220.11	366.5	223.1	368.24	227.95	371.85	232.63	373.42	243.36	377.02
259.81	378.9	289.8	379.01	303.36	379.05	308.59	379.33	337.18	380
341.87	380.42	350.42	381.43	353.73	381.8	355.27	382	358.1	382.65
364.11	384	366.25	384.53	371.48	385.78	372.48	386	389.73	388
393.2	388.71	393.82	388.77	394.89	388.96	396.31	389.18	398.15	389.31
401.07	389.7	406.01	389.86	406.78	389.82	409.23	389.97	409.46	390
423.29	390.45	424.72	390.55	426.95	390.71	438.44	391.5	444.21	391.79
445.96	392	456.32	394	459.74	394.71	466.2	396	479.75	398

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.11	.04	227.95	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.11	227.95	98.47	99.02	99.58	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	183.5	377.1	F
269.7	479.75	377.1	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
378.4	432.4	395

BRIDGE

RIVER: Plumtree
REACH: Plumtree RS: 6250

INPUT
Description: Hearthstone Road
Distance from Upstream XS = 41
Deck/Roadway Width = 30
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 14

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
109.53	378.06		126.2	378.165		148.4	377.583	
171.8	377.249		194.8	377.026		205	377.06	375.06
219.5	377.097	375.097	230	377.36	375.36	242.2	377.664	
267.9	378.981		291.3	380.656		311.7	383.135	
336.6	385.512		479.75	398				

Upstream Bridge Cross Section Data
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.85	5.73	386.49	14.33	386	18.53	385.51	23.71	384.86
25.79	384.56	29.31	384	30.39	383.8	37.57	382.43	39.51	382.02
41.76	381.69	54.85	380	70.55	379.5	94.75	378.51	95.08	378.49
95.41	378.49	98.12	378.36	99.34	378.31	103.26	378.2	106.66	378.14
108.29	378.08	109.53	378.06	141.16	376.68	172.07	375.5	191.67	374.94
202.55	371.87	209.11	370.03	213.11	368	215.11	367	216.11	366.5
220.11	366.5	223.1	368.24	227.95	371.85	232.63	373.42	243.36	377.02
259.81	378.9	289.8	379.01	303.36	379.05	308.59	379.33	337.18	380
341.87	380.42	350.42	381.43	353.73	381.8	355.27	382	358.1	382.65
364.11	384	366.25	384.53	371.48	385.78	372.48	386	389.73	388
393.2	388.71	393.82	388.77	394.89	388.96	396.31	389.18	398.15	389.31
401.07	389.7	406.01	389.86	406.78	389.82	409.23	389.97	409.46	390
423.29	390.45	424.72	390.55	426.95	390.71	438.44	391.5	444.21	391.79
445.96	392	456.32	394	459.74	394.71	466.2	396	479.75	398

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.11	.04	227.95	.075

Bank Sta: Left	Right	Coeff Contr.	Expan.
209.11	227.95	.3	.5

Ineffective Flow num= 2

```
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    93.6     378             109 378.165           131.9 377.583
   155.7 377.249           179.1 377.026             200  377.09  375.09
   204.2 377.097 375.097     225  377.23  375.23   227.3 377.664
   253.6 378.981           277.3 380.656           306.1 383.135
   331.6 385.512          338.94     386

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.5    2.88  381.26     8.6  380.81   10.21   380.8   18.26  381.42
   23.64  381.72   28.86     382   31.26  382.04   31.91  382.04   38.99     382
   43.19   381.9    43.7  381.88   47.28  381.77   47.53  381.75   49.17   381.7
   49.49  381.68    51.7  381.59   53.73  381.49   76.26  380.56   76.87  380.53
   77.82  380.46   79.53  380.32   83.18     380   86.26  379.56   88.68  379.19
   90.12  378.97   98.61     378  127.05   376.5  131.06   376.5  161.92   376.1
  189.14  374.65  197.54  369.94  197.55  369.93  203.42  366.64  221.43  366.39
  225.24  370.02  227.55  372.22  227.56  372.23  229.54   374.1  255.33   377.5
  286.19  380.21  290.61  381.26  291.85  381.66  302.93     382  306.38  382.34
   307.8   382.5  315.82   383.3  321.82     384  332.19  385.15  338.94     386
  354.08  387.58   358.3     388  361.22  388.32  364.98  388.73  371.17  389.42
   376.5     390  377.44  390.09  382.23  390.53  383.73  390.65  389.09  391.12
  395.34  391.57     396  391.63   401.1     392  405.04  392.54  406.26  392.72
  413.74     394  418.95  394.57  420.55  394.73  421.65  394.84  427.34  395.45
  432.93  395.77  433.17   395.8   434.1  395.89  438.66  396.46  441.16  396.79
  443.14  397.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  197.54     .04  225.24    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        197.54  225.24             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   180.5  377.03       F
   229.3  443.14  377.03       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    23.7    63.4     395

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR
```

E.G. US. (ft)	369.21	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	369.12	E.G. Elev (ft)	369.10	369.03
Q Total (cfs)	57.14	W.S. Elev (ft)	368.99	369.01
Q Bridge (cfs)	57.14	Crit W.S. (ft)	367.96	367.18
Q Weir (cfs)		Max Chl Dpth (ft)	2.49	2.62
Weir Sta Lft (ft)		Vel Total (ft/s)	2.68	1.07
Weir Sta Rgt (ft)		Flow Area (sq ft)	21.33	53.45
Weir Submerg		Froude # Chl	0.37	0.12
Weir Max Depth (ft)		Specif Force (cu ft)	26.63	65.19
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	1.65	2.20
Min El Prs (ft)	375.36	W.P. Total (ft)	14.25	26.25
Delta EG (ft)	0.19	Conv. Total (cfs)	1036.9	3190.2
Delta WS (ft)	0.12	Top Width (ft)	12.94	24.27
BR Open Area (sq ft)	155.47	Frctn Loss (ft)	0.02	0.01
BR Open Vel (ft/s)	2.68	C & E Loss (ft)	0.05	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.28	0.04
BR Sel Method	Energy only	Power Total (lb/ft s)	0.76	0.04

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	369.77	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	369.65	E.G. Elev (ft)	369.65	369.57
Q Total (cfs)	85.76	W.S. Elev (ft)	369.51	369.54
Q Bridge (cfs)	85.76	Crit W.S. (ft)	368.33	367.39
Q Weir (cfs)		Max Chl Dpth (ft)	3.01	3.15
Weir Sta Lft (ft)		Vel Total (ft/s)	3.00	1.29
Weir Sta Rgt (ft)		Flow Area (sq ft)	28.57	66.51
Weir Submerg		Froude # Chl	0.38	0.13
Weir Max Depth (ft)		Specif Force (cu ft)	42.92	98.63
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	1.95	2.68
Min El Prs (ft)	375.36	W.P. Total (ft)	16.28	27.55
Delta EG (ft)	0.21	Conv. Total (cfs)	1544.0	4446.7
Delta WS (ft)	0.12	Top Width (ft)	14.68	24.82
BR Open Area (sq ft)	155.47	Frctn Loss (ft)	0.02	0.01
BR Open Vel (ft/s)	3.00	C & E Loss (ft)	0.06	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.34	0.06
BR Sel Method	Energy only	Power Total (lb/ft s)	1.01	0.07

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	371.33	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	371.12	E.G. Elev (ft)	371.21	371.09
Q Total (cfs)	206.12	W.S. Elev (ft)	370.98	371.03
Q Bridge (cfs)	206.12	Crit W.S. (ft)	369.38	368.05
Q Weir (cfs)		Max Chl Dpth (ft)	4.48	4.64
Weir Sta Lft (ft)		Vel Total (ft/s)	3.79	1.99
Weir Sta Rgt (ft)		Flow Area (sq ft)	54.34	103.74
Weir Submerg		Froude # Chl	0.40	0.16
Weir Max Depth (ft)		Specif Force (cu ft)	119.28	234.38
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	2.58	4.14
Min El Prs (ft)	375.36	W.P. Total (ft)	23.39	30.64
Delta EG (ft)	0.26	Conv. Total (cfs)	3773.2	8690.5
Delta WS (ft)	0.10	Top Width (ft)	21.04	25.07
BR Open Area (sq ft)	155.47	Frctn Loss (ft)	0.03	0.01
BR Open Vel (ft/s)	3.79	C & E Loss (ft)	0.09	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.43	0.12
BR Sel Method	Energy only	Power Total (lb/ft s)	1.64	0.24

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than

1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.96	Element		
W.S. US. (ft)	372.59	E.G. Elev (ft)	372.81	372.63
Q Total (cfs)	424.60	W.S. Elev (ft)	372.40	372.48
Q Bridge (cfs)	424.60	Crit W.S. (ft)	370.60	368.93
Q Weir (cfs)		Max Chl Dpth (ft)	5.90	6.09
Weir Sta Lft (ft)		Vel Total (ft/s)	4.89	3.03
Weir Sta Rgt (ft)		Flow Area (sq ft)	86.86	140.21
Weir Submerg		Froude # Chl	0.38	0.22
Weir Max Depth (ft)		Specif Force (cu ft)	262.22	439.12
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	3.53	5.60
Min El Prs (ft)	375.36	W.P. Total (ft)	28.58	33.55
Delta EG (ft)	0.36	Conv. Total (cfs)	7207.0	13513.8
Delta WS (ft)	0.12	Top Width (ft)	24.60	25.04
BR Open Area (sq ft)	155.47	Frctn Loss (ft)	0.05	0.02
BR Open Vel (ft/s)	4.89	C & E Loss (ft)	0.14	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.66	0.26
BR Sel Method	Energy only	Power Total (lb/ft s)	3.22	0.78

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.62	Element		
W.S. US. (ft)	373.17	E.G. Elev (ft)	373.46	373.23
Q Total (cfs)	545.44	W.S. Elev (ft)	372.92	373.03
Q Bridge (cfs)	545.44	Crit W.S. (ft)	371.14	369.32
Q Weir (cfs)		Max Chl Dpth (ft)	6.42	6.64
Weir Sta Lft (ft)		Vel Total (ft/s)	5.46	3.54
Weir Sta Rgt (ft)		Flow Area (sq ft)	99.98	153.89
Weir Submerg		Froude # Chl	0.41	0.24
Weir Max Depth (ft)		Specif Force (cu ft)	341.81	539.60
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	3.99	6.15
Min El Prs (ft)	375.36	W.P. Total (ft)	29.94	34.64
Delta EG (ft)	0.44	Conv. Total (cfs)	8829.1	15448.8
Delta WS (ft)	0.15	Top Width (ft)	25.04	25.03
BR Open Area (sq ft)	155.47	Frctn Loss (ft)	0.06	0.03
BR Open Vel (ft/s)	5.46	C & E Loss (ft)	0.17	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.80	0.35
BR Sel Method	Energy only	Power Total (lb/ft s)	4.34	1.23

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #200-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	374.26	Element		
W.S. US. (ft)	373.72	E.G. Elev (ft)	374.07	373.79
Q Total (cfs)	675.92	W.S. Elev (ft)	373.40	373.53
Q Bridge (cfs)	675.92	Crit W.S. (ft)	371.65	369.71
Q Weir (cfs)		Max Chl Dpth (ft)	6.90	7.14
Weir Sta Lft (ft)		Vel Total (ft/s)	6.04	4.06
Weir Sta Rgt (ft)		Flow Area (sq ft)	111.91	166.44
Weir Submerg		Froude # Chl	0.44	0.27
Weir Max Depth (ft)		Specif Force (cu ft)	430.02	645.16
Min El Weir Flow (ft)	377.04	Hydr Depth (ft)	4.47	6.65
Min El Prs (ft)	375.36	W.P. Total (ft)	30.90	35.64
Delta EG (ft)	0.52	Conv. Total (cfs)	10416.2	17274.4
Delta WS (ft)	0.20	Top Width (ft)	25.03	25.03

BR Open Area (sq ft)	155.47	Frctn Loss (ft)	0.07	0.03
BR Open Vel (ft/s)	6.04	C & E Loss (ft)	0.20	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.95	0.45
BR Sel Method	Energy only	Power Total (lb/ft s)	5.75	1.81

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6197

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39
225.24	370.02	227.55	372.22	227.56	372.23	229.54	374.1	255.33	377.5
286.19	380.21	290.61	381.26	291.85	381.66	302.93	382	306.38	382.34
307.8	382.5	315.82	383.3	321.82	384	332.19	385.15	338.94	386
354.08	387.58	358.3	388	361.22	388.32	364.98	388.73	371.17	389.42
376.5	390	377.44	390.09	382.23	390.53	383.73	390.65	389.09	391.12
395.34	391.57	396	391.63	401.1	392	405.04	392.54	406.26	392.72
413.74	394	418.95	394.57	420.55	394.73	421.65	394.84	427.34	395.45
432.93	395.77	433.17	395.8	434.1	395.89	438.66	396.46	441.16	396.79
443.14	397.11								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	197.54	.04	225.24	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.54	225.24	75.78	74.81	73.83	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	180.5	377.03	F
229.3	443.14	377.03	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
23.7	63.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6122

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.69	8.11	379.53	9.53	379.45	17.27	379.23	20.32	379.02
22.13	378.95	24.3	378.81	31.57	378.41	34.72	378.26	38.27	378.14
47.27	377.96	49.2	377.94	52.81	377.79	56.11	377.88	60.11	377.91
62.59	377.87	64.37	377.81	65.09	377.76	66.54	377.7	67.14	377.65
68.62	377.58	71.62	377.27	75.62	376.99	79.3	376.57	81.7	376.35
84.46	376	105.56	374.69	108.26	374.67	121.47	375.38	123.91	375.3
125.19	375.41	127.48	375.55	129.74	375.66	131.98	375.57	134.89	375.74
137.16	375.81	137.87	375.78	140.09	375.81	142.39	375.77	145.17	375.64
148	375.41	151.1	375.05	154.75	374.52	159.06	373.88	159.11	374.24
175.4	373.46	185.87	373.46	213.06	372.27	225.58	370.42	231.74	369.51
232.66	367.04	234.89	366.62	240.64	367.46	244.1	370.65	253.02	370.54
255.64	371.33	278.66	378.25	302.77	378.97	352.21	380	359.2	381.14
364.26	382	367.65	382.7	370.16	383.19	373.86	384	378.45	385.21
381.62	386	383.59	386.52	388.85	388	390.89	388.46		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	225.58	.04	244.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
225.58	244.1	98.18	94.21	91.92	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
119.8	162.9	385	F
185.6	201.5	385	F
272.4	384.9	385	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
162.9	185.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6028

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.8	19.58	382.41	21.78	382.31	25.29	382	28.82	381.21
33.73	380	38.53	378.96	47.92	377.02	53.08	376	53.61	375.96
54.06	375.94	63.8	375.32	75.35	374.08	75.77	374	75.87	374
79.55	373.5	79.83	373.47	80.44	373.45	80.74	373.5	108.3	372.93
132.26	372.05	132.53	372	152.08	371	183.23	368.87	204.31	368.6
204.32	368.6	205.1	368.59	214.72	368.32	216.43	366.61	219.36	365.53
223.23	366.03	225.53	367.69	234.47	368.82	242.06	369.78	266.05	372.16
283.38	373.66	295.75	374.49	302.61	375.35	306.21	375.74	307.44	375.9
308.45	376	309.16	376.16	309.43	376.21	312.19	376.42	326.29	377.09
336.37	377.85	338.16	378	343.77	379.27	346.84	380	352.57	381.65
353.72	382	360.42	384	366.91	386	373.75	388	374.25	388.15
375.39	388.44	376.82	388.77	382.2	390	385.62	390.91	387.5	391.38
390.05	392	391.18	392.24	393.51	392.7	394.79	392.94	395.7	393.09
396.68	393.28	398.05	393.5	400.71	394	401.05	394.02	401.31	394.02
401.89	394.05	402.27	394.05	404.67	394.17				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	214.72	.04	234.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
214.72	234.47	100.93	101.91	101.19	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
61	113.9	390	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
19.7	61	390	393.1	404.67	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5926

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.59	5.1	382	9.3	381.27	15.23	380.26	16.79	380
17.4	379.93	17.99	379.89	25.61	379.19	28.72	378.92	41.87	378.06
42.14	378.04	42.69	378.01	42.8	378	47.15	377.66	50.35	377.44
52.95	377.29	54.78	377.18	55.85	377.13	57.24	377.07	58.56	376.99
61.22	376.9	62.6	376.8	64.49	376.66	65.4	376.61	68.93	376.32
69.43	376.28	72.62	376	79.17	375.23	79.85	375.13	81.75	374.86
86.54	374.13	86.9	374.08	87.35	374	97.43	372.6	101.22	372
101.71	371.98	102.49	371.97	103.31	371.98	103.65	372	103.7	371.95
108.23	371.29	120.13	371.02	124.98	371.02	148.13	370.3	170.6	369.08
174.12	367.61	175.06	367.22	180.45	367.62	186.44	367.24	187.3	365.38
189.41	365.46	192.74	365.89	197.28	368.62	204.41	369.15	222.38	370.47
248.76	371.19	255	372	274.29	373.9	275.14	374	287.23	376
292.49	377.34	295.11	378	299.87	379.19	303.25	380	311.49	382
318.69	383.66	320.08	384	327.45	385.84	328.11	386	335.19	387.48

```
  337.59     388  343.86  388.94  350.88     390  354.59  390.61   356.8  390.96

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.44     .04  197.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.44  197.28           102.11  102.54  102.93             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    60.6    75.4     385       F
   103.4   163.4     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    75.4   103.4     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5824

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.17    1.53  379.09    3.56  378.96    5.73   378.8    8.65  378.57
   10.86   378.4   11.67  378.34   15.69     378   20.08  377.29   27.83     376
   29.81  375.82   31.38  375.67   39.63  374.92   42.87  374.63   44.59   374.5
   49.91     374   62.23  371.55   92.34  370.63  109.26   369.2  110.94  369.06
  120.72  365.29  124.37  365.08  126.51  365.24  130.92  367.14  139.51  368.75
  157.36   372.1  180.06  370.47  190.05  370.47  216.33     372  219.38  372.57
  223.55  373.34  225.27  373.66  227.19     374  231.58  375.26  234.22     376
  234.79  376.18  240.58     378  243.82  379.15  246.06     380  248.42  380.86
  251.63     382  257.95  383.86   258.4     384  260.44   384.5  266.77     386
  268.22  386.33  275.61     388  278.96   388.7   285.3     390  291.48  391.05
  292.67  391.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  109.26     .04  139.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        109.26  139.51           75.62   79.21   82.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5745

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     380    15.5  378.48   20.71     378    30.8  377.15   37.79  376.64
    40.3  376.44   46.11  376.04   46.38     376    47.1  375.96   69.11     374
    77.1  373.47  103.89  370.86  131.17   369.6  133.12  368.74  140.37  365.55
  143.61     365  144.73  363.71  148.48  363.03  150.47  363.33   159.4  368.15
  163.52  368.56  176.34  369.82  186.31   370.3  194.64  373.03  209.12  373.26
  225.27  372.55   225.6  372.55  225.92  372.54  226.18  372.55   226.7  372.55
   233.5  372.96   233.9  372.98  234.19     373  234.39     373  234.53  373.01
  234.67  373.01  234.83  373.02  242.93  373.56  243.64  373.58  246.98  373.68
  250.97   373.8  257.66     374  263.52  375.65  264.76     376  265.45  376.19
  271.67     378     272  378.09  278.61     380  283.25  381.15  286.54     382
  296.07  383.94  296.19  383.96  296.34     384  296.53  384.04  296.57  384.04
  296.61  384.05  296.75  384.07  297.08  384.12   302.2  384.91  306.31  385.41
  307.97  385.64  308.53  385.72  311.26     386  312.97  386.11  313.27  386.13
   317.7  386.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  131.17     .04   159.4    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        131.17   159.4            34.07   34.02   34.04             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   170.3   207.9     385       F
```

```
   225.8   247.8     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   207.9   225.8     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5711

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.06  162.62            96.24   96.18   98.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 5650

INPUT
Description: Brookemede Road modified bridge opening to 20ft wide and assuming
             a 2ft thick roadway structure
Distance from Upstream XS =      37
Deck/Roadway Width        =      37
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     101 372.301             140  370.63  368.63     151 370.157 368.157
     160  370.11  368.11     188 369.953           218.7 370.181

Upstream Bridge Cross Section Data
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        136.06  162.62             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  128.33  372.41           152.3 372.301           202.9 370.157
     211  370.11  368.11     231     370     368   238.6 369.953
   268.9 370.181

Downstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  375.09    1.07  375.04    1.94  375.04    2.62  375.01    3.78  375.02
       5  374.95    6.16  374.97   13.83   374.5   15.25  374.52   31.31  375.33
   32.18  375.35   39.66   374.3   45.41  373.86   50.93  373.59   53.48  373.55
   59.91  373.31    62.6  373.32   81.57  373.51   85.54  373.44   92.18  373.21
   98.33  373.03  102.35  373.09  105.39  372.98  113.27  372.64  128.33  372.41
  164.68   369.2  190.47  367.33  202.12  366.92  205.34  366.81  210.08   364.6
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        205.34   238.7             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8  369.75       F
     239   440.9  369.75       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)               364.95    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               364.83    E.G. Elev (ft)              364.79        364.67
```

Q Total (cfs)	57.14	W.S. Elev (ft)	364.63	364.64
Q Bridge (cfs)	57.14	Crit W.S. (ft)	363.93	363.16
Q Weir (cfs)		Max Chl Dpth (ft)	2.12	2.83
Weir Sta Lft (ft)		Vel Total (ft/s)	3.15	1.44
Weir Sta Rgt (ft)		Flow Area (sq ft)	18.14	39.78
Weir Submerg		Froude # Chl	0.46	0.15
Weir Max Depth (ft)		Specif Force (cu ft)	21.18	45.53
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)	1.48	1.99
Min El Prs (ft)	368.63	W.P. Total (ft)	13.45	22.11
Delta EG (ft)	0.29	Conv. Total (cfs)	822.6	2185.7
Delta WS (ft)	0.20	Top Width (ft)	12.26	20.04
BR Open Area (sq ft)	83.21	Frctn Loss (ft)	0.05	0.02
BR Open Vel (ft/s)	3.15	C & E Loss (ft)	0.06	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.41	0.08
BR Sel Method	Energy only	Power Total (lb/ft s)	1.28	0.11

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	365.49	Element		
W.S. US. (ft)	365.34	E.G. Elev (ft)	365.33	365.21
Q Total (cfs)	85.76	W.S. Elev (ft)	365.15	365.16
Q Bridge (cfs)	85.76	Crit W.S. (ft)	364.25	363.39
Q Weir (cfs)		Max Chl Dpth (ft)	2.64	3.35
Weir Sta Lft (ft)		Vel Total (ft/s)	3.45	1.71
Weir Sta Rgt (ft)		Flow Area (sq ft)	24.86	50.23
Weir Submerg		Froude # Chl	0.46	0.16
Weir Max Depth (ft)		Specif Force (cu ft)	35.84	71.01
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)	1.78	2.51
Min El Prs (ft)	368.63	W.P. Total (ft)	15.50	23.16
Delta EG (ft)	0.30	Conv. Total (cfs)	1265.1	3126.9
Delta WS (ft)	0.20	Top Width (ft)	13.99	20.03
BR Open Area (sq ft)	83.21	Frctn Loss (ft)	0.06	0.02
BR Open Vel (ft/s)	3.45	C & E Loss (ft)	0.07	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.46	0.10
BR Sel Method	Energy only	Power Total (lb/ft s)	1.59	0.17

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	367.08	Element		
W.S. US. (ft)	366.87	E.G. Elev (ft)	366.95	366.81
Q Total (cfs)	206.12	W.S. Elev (ft)	366.70	366.71
Q Bridge (cfs)	206.12	Crit W.S. (ft)	365.29	364.12
Q Weir (cfs)		Max Chl Dpth (ft)	4.19	4.90
Weir Sta Lft (ft)		Vel Total (ft/s)	3.99	2.54
Weir Sta Rgt (ft)		Flow Area (sq ft)	51.71	81.19
Weir Submerg		Froude # Chl	0.34	0.20
Weir Max Depth (ft)		Specif Force (cu ft)	110.43	184.30
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)	2.65	4.06
Min El Prs (ft)	368.63	W.P. Total (ft)	22.14	26.25
Delta EG (ft)	0.31	Conv. Total (cfs)	3381.1	6402.4
Delta WS (ft)	0.17	Top Width (ft)	19.52	20.02
BR Open Area (sq ft)	83.21	Frctn Loss (ft)	0.07	0.02
BR Open Vel (ft/s)	3.99	C & E Loss (ft)	0.07	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.54	0.20
BR Sel Method	Energy only	Power Total (lb/ft s)	2.16	0.51

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	368.98	Element		
W.S. US. (ft)	368.70	E.G. Elev (ft)	368.98	368.47
Q Total (cfs)	424.60	W.S. Elev (ft)	368.63	368.11
Q Bridge (cfs)	424.60	Crit W.S. (ft)	366.49	365.07
Q Weir (cfs)		Max Chl Dpth (ft)	6.12	6.30
Weir Sta Lft (ft)		Vel Total (ft/s)	5.10	3.93
Weir Sta Rgt (ft)		Flow Area (sq ft)	83.21	108.14
Weir Submerg		Froude # Chl	0.36	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	287.64	353.30
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)		
Min El Prs (ft)	368.63	W.P. Total (ft)	45.82	48.94
Delta EG (ft)	0.51	Conv. Total (cfs)	4601.3	6814.4
Delta WS (ft)	0.36	Top Width (ft)		
BR Open Area (sq ft)	83.21	Frctn Loss (ft)		
BR Open Vel (ft/s)	5.10	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)	0.97	0.54
BR Sel Method	Press Only	Power Total (lb/ft s)	4.93	2.10

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	370.03	Element		
W.S. US. (ft)	369.78	E.G. Elev (ft)	370.03	369.78
Q Total (cfs)	545.44	W.S. Elev (ft)	369.78	369.77
Q Bridge (cfs)	545.23	Crit W.S. (ft)	366.97	365.50
Q Weir (cfs)	0.21	Max Chl Dpth (ft)	7.27	7.96
Weir Sta Lft (ft)	174.43	Vel Total (ft/s)	0.00	0.00
Weir Sta Rgt (ft)	187.35	Flow Area (sq ft)		
Weir Submerg	0.00	Froude # Chl	0.43	0.31
Weir Max Depth (ft)	0.07	Specif Force (cu ft)	427.17	567.00
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)		
Min El Prs (ft)	368.63	W.P. Total (ft)	45.82	55.24
Delta EG (ft)	0.90	Conv. Total (cfs)		
Delta WS (ft)	0.79	Top Width (ft)		6.29
BR Open Area (sq ft)	83.21	Frctn Loss (ft)		
BR Open Vel (ft/s)	6.55	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy are based on critical
depth over the weir.

BRIDGE OUTPUT Profile #200-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	370.97	Element		
W.S. US. (ft)	370.73	E.G. Elev (ft)	370.96	370.52
Q Total (cfs)	675.92	W.S. Elev (ft)	370.73	370.36
Q Bridge (cfs)	576.59	Crit W.S. (ft)	367.41	365.94
Q Weir (cfs)	99.33	Max Chl Dpth (ft)	8.22	8.55
Weir Sta Lft (ft)	132.38	Vel Total (ft/s)	5.39	3.16
Weir Sta Rgt (ft)	191.90	Flow Area (sq ft)	125.41	214.22

Weir Submerg	0.00	Froude # Chl	0.40	0.32
Weir Max Depth (ft)	1.00	Specif Force (cu ft)	539.94	662.51
Min El Weir Flow (ft)	369.97	Hydr Depth (ft)	2.36	1.96
Min El Prs (ft)	368.63	W.P. Total (ft)	98.94	158.15
Delta EG (ft)	1.04	Conv. Total (cfs)		
Delta WS (ft)	0.93	Top Width (ft)	53.03	109.16
BR Open Area (sq ft)	83.21	Frctn Loss (ft)		
BR Open Vel (ft/s)	6.93	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy are based on critical
depth over the weir.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5614

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	375.09	1.07	375.04	1.94	375.04	2.62	375.01	3.78	375.02
5	374.95	6.16	374.97	13.83	374.5	15.25	374.52	31.31	375.33
32.18	375.35	39.66	374.3	45.41	373.86	50.93	373.59	53.48	373.55
59.91	373.31	62.6	373.32	81.57	373.51	85.54	373.44	92.18	373.21
98.33	373.03	102.35	373.09	105.39	372.98	113.27	372.64	128.33	372.41
164.68	369.2	190.47	367.33	202.12	366.92	205.34	366.81	210.08	364.6
211.22	364.43	215.09	361.81	217.13	362.04	229.59	362.98	238.7	368.44
238.98	368.61	251.44	369.69	268.94	370.18	285.07	369.62	290.27	370.06
298.37	370.04	306.37	370.28	324.69	371.75	335.39	372	342.38	373.55
344.58	374	353.22	376	364.13	378	366.42	378.31	380.54	380.03
386.38	380.25	391.69	380.39	399.18	380.94	403.65	381.15	406.06	381.34
407.91	381.42	410.66	381.64	411.73	381.67	415.82	382	420.24	382.3
421.1	382.39	423.89	382.58	424.39	382.64	428.52	382.91	431.83	383.32
435.07	383.79	435.47	383.82	436.48	384	438.12	384.43	440.9	385.22

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	205.34	.04	238.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
205.34	238.7	60.47	54.67	45.26	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	193.8	369.75	F
239	440.9	369.75	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
72.7	102.2	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5560

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.71	12.44	380.66	20.28	380.48	30.01	380.06	32.55	380
35.14	379.9	40.44	379.76	66.9	378.85	77.73	378.19	86.8	377.53
106.28	376	135.5	374	137.27	373.83	145.55	373.21	146.86	373.14

```
  152.29  373.03  158.19  372.73  169.54  372.53  171.14  372.42   174.7     372
  177.92  371.83  200.19  370.97  216.51  371.11  224.54  370.88  233.81  370.74
  237.26  370.65  249.92     370  272.36   369.5  305.11  368.25  330.75   367.7
  351.63  367.26  351.64  367.26   352.8  367.24  361.62  364.64  365.14  363.68
  366.63  362.08  370.12  362.09  377.69  362.11   381.2  366.86  381.86  366.92
  381.88  366.92  400.75   368.4  415.84  369.84  428.22  370.13  441.48  370.08
  454.62  370.47  468.56  371.58  474.03  371.79  478.41     372  486.49  373.21
   492.4     374   496.8  374.72  506.14     376  510.13  376.65  519.35     378
  525.84  378.52   527.4  378.56  530.32  378.74  538.47  379.03  541.22  379.02
  541.91  379.05   543.2  379.02  545.47  379.17  545.81  379.17  552.05  379.68
   557.2  380.19  563.37  380.95  569.96     382  577.27     384   584.9     386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   352.8     .04   381.2    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         352.8   381.2            56.62   49.74    41.3             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5510

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        251.67  273.96            36.56   36.42   38.18             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 5500

INPUT
Description: Driveway
Distance from Upstream XS =    8.75
Deck/Roadway Width        =    11.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     245     368           246.3 368.296           251.7 369.922 368.922
   261.7 369.925 368.925   272.1 369.867 368.867   278.5 368.291
     281   367.8

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        251.67  273.96             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  218.37  367.75           222.9 368.709           228.8 369.891 368.891
   238.9 369.925 368.925     248 369.959 368.959   254.6 368.591
  256.61  368.13

Downstream Bridge Cross Section Data
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.2    5.49  380.43   19.15  378.55   22.99     378   24.44  377.87
    27.6  377.66   28.15  377.66   32.08  377.85   34.11  377.81   34.84  377.86
   36.16  377.76    36.5  377.71   36.95   377.6   37.24  377.63   37.53  377.55
   43.71  377.04   44.96  377.01   53.85  377.19   61.96  376.88   69.36  376.67
    78.2  376.53   80.32  376.46   85.59  376.16   86.54  376.08   87.13     376
   96.16     374  106.12     372  115.26     370  135.49  369.25  142.97   369.5
  155.72     370  160.13  369.38  160.65  369.34  161.19  369.38  161.22  369.44
  161.24  368.96  165.72  368.71  205.57  368.19  226.91  367.45  227.84  367.41
  239.06  361.76  241.96   361.6  245.76  361.52  251.97  367.85  256.98  368.15
  272.47  369.07  292.37  370.16  313.15  370.81  318.99   371.3  321.33   371.4
  339.22  371.96  340.43     372  349.15  373.24   355.3     374  368.27  375.86
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        227.84  251.97             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Bridge Coefficient Sets =  1
```

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd = .8
Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

E.G. US. (ft)	364.48	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	364.26	E.G. Elev (ft)	364.37	364.23
Q Total (cfs)	57.14	W.S. Elev (ft)	364.09	364.15
Q Bridge (cfs)	57.14	Crit W.S. (ft)	363.77	362.82
Q Weir (cfs)		Max Chl Dpth (ft)	1.93	2.63
Weir Sta Lft (ft)		Vel Total (ft/s)	4.24	2.19
Weir Sta Rgt (ft)		Flow Area (sq ft)	13.46	26.08
Weir Submerg		Froude # Chl	0.68	0.24
Weir Max Depth (ft)		Specif Force (cu ft)	17.36	33.10
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	1.22	1.90
Min El Prs (ft)	368.93	W.P. Total (ft)	12.11	15.59
Delta EG (ft)	0.28	Conv. Total (cfs)	536.8	1365.6
Delta WS (ft)	0.14	Top Width (ft)	11.00	13.72
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.03
BR Open Vel (ft/s)	4.24	C & E Loss (ft)	0.10	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.79	0.18
BR Sel Method	Energy only	Power Total (lb/ft s)	3.34	0.40

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	364.99	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	364.74	E.G. Elev (ft)	364.91	364.77
Q Total (cfs)	85.76	W.S. Elev (ft)	364.61	364.66
Q Bridge (cfs)	85.76	Crit W.S. (ft)	364.10	363.16
Q Weir (cfs)		Max Chl Dpth (ft)	2.45	3.14
Weir Sta Lft (ft)		Vel Total (ft/s)	4.39	2.57
Weir Sta Rgt (ft)		Flow Area (sq ft)	19.52	33.32
Weir Submerg		Froude # Chl	0.62	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	29.97	51.17
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	1.55	2.26
Min El Prs (ft)	368.93	W.P. Total (ft)	14.03	17.23
Delta EG (ft)	0.26	Conv. Total (cfs)	903.9	1921.6
Delta WS (ft)	0.11	Top Width (ft)	12.58	14.73
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.03
BR Open Vel (ft/s)	4.39	C & E Loss (ft)	0.10	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.78	0.24
BR Sel Method	Energy only	Power Total (lb/ft s)	3.44	0.62

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	366.56	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	366.21	E.G. Elev (ft)	366.50	366.36

Q Total (cfs)	206.12	W.S. Elev (ft)	366.12	366.17
Q Bridge (cfs)	206.12	Crit W.S. (ft)	365.14	364.17
Q Weir (cfs)		Max Chl Dpth (ft)	3.96	4.65
Weir Sta Lft (ft)		Vel Total (ft/s)	4.92	3.57
Weir Sta Rgt (ft)		Flow Area (sq ft)	41.92	57.66
Weir Submerg		Froude # Chl	0.44	0.29
Weir Max Depth (ft)		Specif Force (cu ft)	95.47	134.94
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.52	3.26
Min El Prs (ft)	368.93	W.P. Total (ft)	19.45	22.07
Delta EG (ft)	0.24	Conv. Total (cfs)	2597.9	4063.8
Delta WS (ft)	0.08	Top Width (ft)	16.67	17.70
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	4.92	C & E Loss (ft)	0.09	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.85	0.42
BR Sel Method	Energy only	Power Total (lb/ft s)	4.16	1.50

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	368.24	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	367.72	E.G. Elev (ft)	368.16	368.00
Q Total (cfs)	424.60	W.S. Elev (ft)	367.57	367.61
Q Bridge (cfs)	421.97	Crit W.S. (ft)	366.35	365.43
Q Weir (cfs)	2.63	Max Chl Dpth (ft)	5.41	6.09
Weir Sta Lft (ft)	236.21	Vel Total (ft/s)	6.19	4.97
Weir Sta Rgt (ft)	287.15	Flow Area (sq ft)	68.21	84.91
Weir Submerg	0.00	Froude # Chl	0.47	0.35
Weir Max Depth (ft)	0.38	Specif Force (cu ft)	224.10	280.19
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.45	4.42
Min El Prs (ft)	368.93	W.P. Total (ft)	24.30	25.90
Delta EG (ft)	0.32	Conv. Total (cfs)	5042.5	6961.0
Delta WS (ft)	0.14	Top Width (ft)	19.74	19.21
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.06	0.05
BR Open Vel (ft/s)	6.19	C & E Loss (ft)	0.11	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	1.24	0.76
BR Sel Method	Energy/Weir	Power Total (lb/ft s)	7.69	3.78

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Notes(60): This is an inside cross section of a perched bridge that has energy, low flow inside of the bridge and weir
flow over the embankment. The reported hydraulics are based on the flow and area inside of the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Notes(60): This is an inside cross section of a perched bridge that has energy, low flow inside of the bridge and weir
flow over the embankment. The reported hydraulics are based on the flow and area inside of the bridge.

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	368.92	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	368.34	E.G. Elev (ft)	368.81	368.62
Q Total (cfs)	545.44	W.S. Elev (ft)	368.05	368.10
Q Bridge (cfs)	545.30	Crit W.S. (ft)	366.90	365.97
Q Weir (cfs)		Max Chl Dpth (ft)	5.89	6.58
Weir Sta Lft (ft)		Vel Total (ft/s)	6.96	5.65
Weir Sta Rgt (ft)		Flow Area (sq ft)	78.37	96.46
Weir Submerg		Froude # Chl	0.51	0.40
Weir Max Depth (ft)		Specif Force (cu ft)	296.85	356.91
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.10	3.09
Min El Prs (ft)	368.93	W.P. Total (ft)	30.58	38.90
Delta EG (ft)	0.41	Conv. Total (cfs)	6073.9	8104.9
Delta WS (ft)	0.25	Top Width (ft)	25.27	31.18
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.07	0.06
BR Open Vel (ft/s)	6.99	C & E Loss (ft)	0.12	0.05
BR Sluice Coef		Shear Total (lb/sq ft)	1.29	0.70
BR Sel Method	Energy only	Power Total (lb/ft s)	8.98	3.96

Warning: The pure energy/weir calculations did not converge within the given number of iterations.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #200-YR

E.G. US. (ft)	369.78	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	369.34	E.G. Elev (ft)	369.78	369.65
Q Total (cfs)	675.92	W.S. Elev (ft)	369.34	369.29
Q Bridge (cfs)	480.90	Crit W.S. (ft)	367.41	366.50
Q Weir (cfs)	195.02	Max Chl Dpth (ft)	7.18	7.77
Weir Sta Lft (ft)	146.64	Vel Total (ft/s)	4.08	3.55
Weir Sta Rgt (ft)	311.41	Flow Area (sq ft)	165.68	190.59
Weir Submerg	0.17	Froude # Chl	0.39	0.34
Weir Max Depth (ft)	1.92	Specif Force (cu ft)	435.98	513.55
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.39	3.35
Min El Prs (ft)	368.93	W.P. Total (ft)	97.04	107.00
Delta EG (ft)	0.72	Conv. Total (cfs)		
Delta WS (ft)	0.77	Top Width (ft)	94.87	56.87
BR Open Area (sq ft)	95.52	Frctn Loss (ft)		
BR Open Vel (ft/s)	5.03	C & E Loss (ft)		
BR Sluice Coef	0.35	Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Warning: The pure energy/weir calculations did not converge within the given number of iterations.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were
used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy are based on critical
depth over the weir.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5474

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87
27.6	377.66	28.15	377.66	32.08	377.85	34.11	377.81	34.84	377.86
36.16	377.76	36.5	377.71	36.95	377.6	37.24	377.63	37.53	377.55
43.71	377.04	44.96	377.01	53.85	377.19	61.96	376.88	69.36	376.67
78.2	376.53	80.32	376.46	85.59	376.16	86.54	376.08	87.13	376
96.16	374	106.12	372	115.26	370	135.49	369.25	142.97	369.5
155.72	370	160.13	369.38	160.65	369.34	161.19	369.38	161.22	369.44
161.24	368.96	165.72	368.71	205.57	368.19	226.91	367.45	227.84	367.41
239.06	361.76	241.96	361.6	245.76	361.52	251.97	367.85	256.98	368.15
272.47	369.07	292.37	370.16	313.15	370.81	318.99	371.3	321.33	371.4
339.22	371.96	340.43	372	349.15	373.24	355.3	374	368.27	375.86
369.44	376	372.93	376.21	375.85	376.35	378.58	376.44	379.95	376.57
383.94	376.7	387.23	377.09	388.78	377.16	390.64	377.28	394.93	378
401.34	379.4	405.24	380.21	406.53	380.45	414	382	419.84	383.75
427.66	386.31								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	227.84	.04	251.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
227.84	251.97	54.4	54.86	54.94	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	224.3	367.75	F
255.8	292.3	368.13	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	29.9	385	170.3	205.7	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5419

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.86	3.78	380.71	4.98	380.68	6.09	380.65	17.15	380.11
18.16	380	18.96	379.91	19.28	379.88	19.92	379.82	26.66	379.12
33.04	378.58	34.43	378.44	39.87	378	40.43	377.97	45.3	377.68
47.96	377.57	55.03	377.19	58.61	377.04	63.94	376.76	68.35	376.51
75.42	376.11	77.27	376	79.39	375.6	88.74	374	95.93	372.25
103.06	370.55	105.38	370	106.52	369.95	124.3	369.13	143.21	368.92
147.73	368.65	154.71	368.29	193.74	367.43	212.87	367.11	212.89	367.11
213.8	367.1	221.32	362.36	228.08	361.46	230.72	362.15	234.51	367.15
243.11	367.53	243.13	367.53	255.89	368.1	273.39	369.09	289.93	371.07
313.65	371.93	314.49	371.98	314.7	372	316.49	372.27	319.14	372.61
322.78	373.12	328.35	373.78	330.34	374.01	330.63	374.04	333.66	374.3
334.1	374.33	334.72	374.39	338.27	374.58	342.52	374.8	344.74	375.07
346.7	375.32	347.32	375.37	350.65	375.82	350.83	375.84	351.12	375.87
351.94	376	361.89	378	362.32	378.12	369.2	380	375.4	382
381.54	384	387.14	386						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.8	.04	234.51	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.8	234.51	93.04	95.36	97.65	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	25.8	385	F
161.5	202.4	385	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5323

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.88	33.33	380.11	40.06	380	44.89	379.5	59	378
67.02	377.3	71.41	376.93	82.12	376	85.17	375.72	86.89	375.57
104.57	374	104.96	373.94	105.28	373.89	109.01	373.33	110.74	373.08
113.95	372.58	116.4	372.26	118.47	372	119.44	371.89	121.49	371.67
125.25	371.29	126.03	371.19	132.92	370	135.4	369.51	137.55	369.08
143.39	368.87	152.17	368.34	189.23	365.45	207.94	365.88	213.15	366
215.76	361.32	219.54	361.54	222.99	361.95	225.61	363.08	227.85	363.55
233.11	366.26	238	366.82	242.41	367.33	259.77	368.53	278.63	371.43
280.36	372	318.89	376	320.12	376.01	321.57	376.05	349.64	377.86
349.73	377.86	349.8	377.87	351.93	378	359.87	379.62	362.53	380
367.1	381.08	369.42	381.61	370.97	382	374.97	382.95	379.47	384
383.38	384.6	383.92	384.68						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.15	.04	233.11	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.15	233.11	116.69	114.31	111.9	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	28.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5209

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.03	.15	378.03	1.95	378	2.36	377.96	6.29	377.85
16.45	377.5	32.34	376.94	33.33	376.83	33.48	376.82	33.68	376.79
33.96	376.77	34.79	376.69	35.57	376.61	36.06	376.58	36.71	376.52
37.31	376.46	37.67	376.43	38.36	376.39	38.61	376.37	39.48	376.31
42.48	376.17	42.92	376.13	45.71	376	45.73	376	49.13	375.52
50	375.39	51.69	375.13	54.05	374.76	55.37	374.56	56.81	374.32
58.6	374	58.66	374	59.06	373.96	84.53	372.91	98.55	372.35
98.82	372.33	99.63	372.28	103.93	372.02	104.29	372	104.3	372
106.14	371.66	116.08	370.04	116.42	370	139.5	368.78	180.51	365.75
201.11	365.1	209.66	364.83	212.88	361.1	216.14	361.11	219.68	361.44
225.21	365.18	231.24	365.5	231.26	365.5	242.79	366.12	270.5	369.12
274.64	369.12	323.97	372.18	340.57	374.96	340.58	375.25	340.59	375.28
344.72	375.7	345.37	375.76	347.71	376	348.59	376.15		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.66	.04	225.21	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.66	225.21	111.42	101.59	91.47	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
298.8	301.6	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	22.5	380	270.4	298.8	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5107

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.01	.24	376	7.07	375.83	9.07	375.73	10.81	375.67
14.62	375.53	15.38	375.51	17.77	375.4	18.91	375.37	34.75	374.53
41.77	374.45	50.79	374.46	55.85	374.46	57.09	374.44	66.02	374.11
71.3	374	75.88	373.97	100.91	373.67	129.38	373.15	147.16	372.84
170.03	372.61	172.25	372.56	172.92	372.55	178.44	372.44	185.81	372.3
200.51	372.07	201.43	371.98	201.7	371.98	202.67	371.92	215.72	371.52
224.6	371.21	235.57	370.77	237.04	370.74	250.15	370.35	252.81	370.32
253.08	370.31	263.87	370.17	266.55	370.18	267.52	370.19	268.58	370.13
278.39	370.23	284.41	370.28	291.18	370.38	294.8	370.34	311.68	370.28
315.54	370.35	315.75	370.35	322.33	370.22	323.94	370.21	332.11	370.09
355.05	371.1	364.88	371.1	382.36	369.28	393.14	367.95	393.15	367.95
397.41	367.43	406.55	360.36	409.03	359.92	412.88	360.59	414.63	362.95
416.03	363.17	422.1	365.13	424.57	365.29	439.58	366.25	464.4	370.03
475.81	370.03	507.28	370.74	534.67	372.32	549.02	374.66	549.03	374.92
549.05	374.92	551.62	375.01	559.75	376	561.38	376.32		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	397.41	.04	422.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.41	422.1	67.29	67.07	66.86	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
295.8	317.3	380	F
445.9	465.3	380	F
474.6	515.9	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
317.3	364.3	380	465.3	474.6	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5040

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78
60.84	374.76	65.24	374.68	66.8	374.67	69.29	374.63	82.36	374.74
84.96	374.72	94.2	374.58	98.84	374.02	99.09	374	100.29	373.97
104.65	373.88	105.56	373.85	106.59	373.78	109.92	373.71	111.01	373.7
130.98	373.7	135.97	373.62	165.62	372.83	166.72	372.81	174.13	372.86
190.11	373	193.32	373	195.48	372.98	206.16	372.44	206.59	372.42
208.47	372.4	218.24	372.4	219.79	372.28	225.13	372	226.38	371.95
226.58	371.93	245.52	371.43	256.75	371.11	261.14	370.99	264.15	370.9
269.51	370.76	283.05	370.32	296.66	370.06	300.29	370	307.5	369.97
310.36	369.98	336.01	370.03	366.23	369.58	397.63	368.96	412.55	368.2
412.96	367.93	415.6	366.107	424.49	359.97	427.96	359.23	429.97	359.61
432.2	361.31	434.59	361.8	443.41	365.9	443.42	365.91	448.7	368.36
463.33	369.65	490.22	370.98	518.26	372.76	527.06	373.76	535.03	374
548.23	375.55	551.99	376	559.22	376.93	568.7	378	584.52	379.08

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	415.6	.04	443.41	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
415.6	443.41	104.82	108.2	107.53	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	408.3	370.15	F
463.6	584.52	370.15	F

BRIDGE

RIVER: Plumtree
REACH: Plumtree RS: 5000

INPUT
Description: Longview Drive - Modified to 25' wide opening and assuming a 2' high bridge structure
Distance from Upstream XS = 38
Deck/Roadway Width = 27
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 17

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
122	374		231	372		346.8	370.217	
363.6	369.987		384.5	369.89		390	370.049	
400.6	370.192		404.7	370.096		415.6	370.14	368.14
417.9	370.146	368.146	424.64	370.31	368.31	433.4	370.53	368.53
440.6	370.8	368.8	456.1	371.384		479.9	372.4	
523.7	374		556.9	376				

Upstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78
60.84	374.76	65.24	374.68	66.8	374.67	69.29	374.63	82.36	374.74
84.96	374.72	94.2	374.58	98.84	374.02	99.09	374	100.29	373.97
104.65	373.88	105.56	373.85	106.59	373.78	109.92	373.71	111.01	373.7
130.98	373.7	135.97	373.62	165.62	372.83	166.72	372.81	174.13	372.86
190.11	373	193.32	373	195.48	372.98	206.16	372.44	206.59	372.42
208.47	372.4	218.24	372.4	219.79	372.28	225.13	372	226.38	371.95
226.58	371.93	245.52	371.43	256.75	371.11	261.14	370.99	264.15	370.9
269.51	370.76	283.05	370.32	296.66	370.06	300.29	370	307.5	369.97
310.36	369.98	336.01	370.03	366.23	369.58	397.63	368.96	412.55	368.2
412.96	367.93	415.6	366.107	424.49	359.97	427.96	359.23	429.97	359.61
432.2	361.31	434.59	361.8	443.41	365.9	443.42	365.91	448.7	368.36
463.33	369.65	490.22	370.98	518.26	372.76	527.06	373.76	535.03	374
548.23	375.55	551.99	376	559.22	376.93	568.7	378	584.52	379.08

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	415.6	.04	443.41	.075

```
Bank Sta: Left   Right    Coeff Contr.   Expan.
         415.6  443.41            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   408.3  370.15       F
   463.6  584.52  370.15       F

Downstream  Deck/Roadway Coordinates
    num=      17
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  375.75             124     374           270.8     372
   386.7 370.217           403.6 369.987           424.4  369.89
   429.9 370.049           440.5 370.192           442.9  370.13  368.13
   444.4 370.096 368.096   457.6 370.146 368.146   467.9   370.4   368.4
   473.1  370.53           495.7 371.384           519.5   372.4
   561.3     374           594.1     376

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  381.34    1.15  381.36    5.15  381.18    6.14   381.2    7.86  381.16
   10.94  381.18   23.92     381   30.33  380.86   45.55  380.35   51.93  380.07
   65.77   379.6   68.46  379.68   70.71  379.61   75.04  379.33   80.36  379.11
  107.04  378.79  117.65  378.45  125.92     378  132.09  376.99  138.71     376
  142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
  164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
  181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
  210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
   248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
  296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
  405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
  444.02  363.09  449.76  359.84  461.09  359.04  468.33 363.925  475.48  368.75
  476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
  568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
  588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
  633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        442.94  468.33            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442  370.15       F
   476.1  633.02  370.15       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)               361.94    Element                Inside BR US  Inside BR DS
```

W.S. US. (ft)	361.79	E.G. Elev (ft)	361.50	361.12
Q Total (cfs)	57.14	W.S. Elev (ft)	361.02	361.01
Q Bridge (cfs)	57.14	Crit W.S. (ft)	360.95	360.31
Q Weir (cfs)		Max Chl Dpth (ft)	1.79	1.97
Weir Sta Lft (ft)		Vel Total (ft/s)	5.59	2.61
Weir Sta Rgt (ft)		Flow Area (sq ft)	10.23	21.90
Weir Submerg		Froude # Chl	0.92	0.40
Weir Max Depth (ft)		Specif Force (cu ft)	16.96	21.30
Min El Weir Flow (ft)	370.12	Hydr Depth (ft)	1.16	1.34
Min El Prs (ft)	368.80	W.P. Total (ft)	9.76	17.26
Delta EG (ft)	1.23	Conv. Total (cfs)	392.2	953.4
Delta WS (ft)	1.46	Top Width (ft)	8.85	16.32
BR Open Area (sq ft)	162.03	Frctn Loss (ft)	0.19	0.32
BR Open Vel (ft/s)	5.59	C & E Loss (ft)	0.19	0.08
BR Sluice Coef		Shear Total (lb/sq ft)	1.39	0.28
BR Sel Method	Energy only	Power Total (lb/ft s)	7.76	0.74

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	362.48	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	362.30	E.G. Elev (ft)	361.99	361.49
Q Total (cfs)	85.76	W.S. Elev (ft)	361.32	361.33
Q Bridge (cfs)	85.76	Crit W.S. (ft)	361.32	360.57
Q Weir (cfs)		Max Chl Dpth (ft)	2.09	2.29
Weir Sta Lft (ft)		Vel Total (ft/s)	6.59	3.14
Weir Sta Rgt (ft)		Flow Area (sq ft)	13.01	27.32
Weir Submerg		Froude # Chl	1.00	0.44
Weir Max Depth (ft)		Specif Force (cu ft)	28.09	32.94
Min El Weir Flow (ft)	370.12	Hydr Depth (ft)	1.34	1.57
Min El Prs (ft)	368.80	W.P. Total (ft)	10.82	18.49
Delta EG (ft)	1.35	Conv. Total (cfs)	546.9	1316.7
Delta WS (ft)	1.51	Top Width (ft)	9.71	17.37
BR Open Area (sq ft)	162.03	Frctn Loss (ft)	0.23	0.85
BR Open Vel (ft/s)	6.59	C & E Loss (ft)	0.26	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	1.85	0.39
BR Sel Method	Energy only	Power Total (lb/ft s)	12.17	1.23

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	363.86	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	363.55	E.G. Elev (ft)	363.32	362.75
Q Total (cfs)	206.12	W.S. Elev (ft)	362.42	362.48
Q Bridge (cfs)	206.12	Crit W.S. (ft)	362.42	361.41
Q Weir (cfs)		Max Chl Dpth (ft)	3.19	3.44
Weir Sta Lft (ft)		Vel Total (ft/s)	7.62	4.18
Weir Sta Rgt (ft)		Flow Area (sq ft)	27.04	49.34
Weir Submerg		Froude # Chl	1.00	0.48

Weir Max Depth (ft)		Specif Force (cu ft)	80.92	94.83
Min El Weir Flow (ft)	370.12	Hydr Depth (ft)	1.80	2.34
Min El Prs (ft)	368.80	W.P. Total (ft)	16.63	22.86
Delta EG (ft)	1.39	Conv. Total (cfs)	1389.0	3060.9
Delta WS (ft)	1.48	Top Width (ft)	14.99	21.09
BR Open Area (sq ft)	162.03	Frctn Loss (ft)	0.23	0.82
BR Open Vel (ft/s)	7.62	C & E Loss (ft)	0.32	0.13
BR Sluice Coef		Shear Total (lb/sq ft)	2.24	0.61
BR Sel Method	Energy only	Power Total (lb/ft s)	17.04	2.55

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	365.40	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	364.91	E.G. Elev (ft)	364.87	364.30
Q Total (cfs)	424.60	W.S. Elev (ft)	363.75	363.88
Q Bridge (cfs)	424.60	Crit W.S. (ft)	363.63	362.46
Q Weir (cfs)		Max Chl Dpth (ft)	4.52	4.84
Weir Sta Lft (ft)		Vel Total (ft/s)	8.47	5.18
Weir Sta Rgt (ft)		Flow Area (sq ft)	50.13	82.05
Weir Submerg		Froude # Chl	0.94	0.41
Weir Max Depth (ft)		Specif Force (cu ft)	194.42	227.78
Min El Weir Flow (ft)	370.12	Hydr Depth (ft)	2.54	3.28
Min El Prs (ft)	368.80	W.P. Total (ft)	22.12	27.89
Delta EG (ft)	1.38	Conv. Total (cfs)	3213.5	6290.5
Delta WS (ft)	1.42	Top Width (ft)	19.77	25.02
BR Open Area (sq ft)	162.03	Frctn Loss (ft)	0.22	0.24
BR Open Vel (ft/s)	8.47	C & E Loss (ft)	0.35	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	2.47	0.84
BR Sel Method	Energy only	Power Total (lb/ft s)	20.92	4.33

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	366.07	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	365.51	E.G. Elev (ft)	365.52	364.93
Q Total (cfs)	545.44	W.S. Elev (ft)	364.28	364.42
Q Bridge (cfs)	545.44	Crit W.S. (ft)	364.14	362.94
Q Weir (cfs)		Max Chl Dpth (ft)	5.05	5.38
Weir Sta Lft (ft)		Vel Total (ft/s)	8.94	5.70
Weir Sta Rgt (ft)		Flow Area (sq ft)	61.01	95.65
Weir Submerg		Froude # Chl	0.94	0.43
Weir Max Depth (ft)		Specif Force (cu ft)	263.34	304.49
Min El Weir Flow (ft)	370.12	Hydr Depth (ft)	2.82	3.82
Min El Prs (ft)	368.80	W.P. Total (ft)	24.29	28.99
Delta EG (ft)	1.42	Conv. Total (cfs)	4188.1	8014.9

Delta WS (ft)	1.48	Top Width (ft)	21.66	25.02
BR Open Area (sq ft)	162.03	Frctn Loss (ft)	0.22	0.24
BR Open Vel (ft/s)	8.94	C & E Loss (ft)	0.37	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	2.66	0.95
BR Sel Method	Energy only	Power Total (lb/ft s)	23.78	5.44

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #200-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	366.71	Element		
W.S. US. (ft)	366.08	E.G. Elev (ft)	366.13	365.51
Q Total (cfs)	675.92	W.S. Elev (ft)	364.74	364.90
Q Bridge (cfs)	675.92	Crit W.S. (ft)	364.62	363.39
Q Weir (cfs)		Max Chl Dpth (ft)	5.51	5.86
Weir Sta Lft (ft)		Vel Total (ft/s)	9.47	6.29
Weir Sta Rgt (ft)		Flow Area (sq ft)	71.37	107.49
Weir Submerg		Froude # Chl	0.71	0.46
Weir Max Depth (ft)		Specif Force (cu ft)	341.25	388.03
Min El Weir Flow (ft)	370.12	Hydr Depth (ft)	3.09	4.30
Min El Prs (ft)	368.80	W.P. Total (ft)	26.03	29.93
Delta EG (ft)	1.48	Conv. Total (cfs)	5194.1	9626.4
Delta WS (ft)	1.59	Top Width (ft)	23.06	25.02
BR Open Area (sq ft)	162.03	Frctn Loss (ft)	0.22	0.24
BR Open Vel (ft/s)	9.47	C & E Loss (ft)	0.39	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	2.90	1.11
BR Sel Method	Energy only	Power Total (lb/ft s)	27.45	6.95

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4932

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.34	1.15	381.36	5.15	381.18	6.14	381.2	7.86	381.16
10.94	381.18	23.92	381	30.33	380.86	45.55	380.35	51.93	380.07
65.77	379.6	68.46	379.68	70.71	379.61	75.04	379.33	80.36	379.11
107.04	378.79	117.65	378.45	125.92	378	132.09	376.99	138.71	376
142.75	375.74	145.13	375.77	151.41	375.65	152.99	375.6	162.62	375.4
164.08	375.33	165.89	375.33	172.24	375.73	177.38	376	177.63	376.05
181.27	376.17	185.16	376.34	192.75	376.58	200.87	376.58	208.17	376.57
210.94	376.5	239.9	376	245.1	375.7	245.52	375.7	248.29	375.54
248.6	375.54	250.31	375.45	256.27	375.5	262.18	375.3	281.18	374
296.71	372.3	299.71	372	320.36	371.86	345.94	370.82	375.13	370.26
405.43	368.96	424.73	368.62	429.83	363.66	442.94	363.7	444	363.1
444.02	363.09	449.76	359.84	461.09	359.04	468.33	363.925	475.48	368.75
476.07	368.78	476.1	368.79	501.36	370.51	527.01	371.18	549.43	374
568.87	375.7	572.79	376	583.63	376.6	584.84	376.64	587.35	376.78
588.79	376.83	590.9	376.94	610.8	377.12	614.03	377.22	619.02	377.46
633.02	378.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        442.94  468.33            86.54   87.15    87.5             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442  370.15       F
   476.1  633.02  370.15       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4845

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.58    4.55  380.55    6.68  380.49    9.66  380.28   16.63  379.98
   26.33  379.81    62.1  378.84   98.92     378   99.32  377.89  136.94     376
     143  375.91  149.44     376  152.28   376.1  156.17  376.13   191.4   376.8
  203.32  376.79  209.98  376.63  238.93  376.59  244.45  376.21  250.81     376
  261.25  374.62  275.77     372  281.64  371.31  290.21  370.67  304.89  369.51
  331.41  367.13  348.83  364.14  380.45  364.27  402.65  363.64  402.68  363.64
  406.34  363.53  414.27  358.13  417.64  357.81  425.27  358.61  432.32  365.43
  433.19  365.53  433.22  365.53  453.71  367.76  474.07  367.76  485.62     368
  502.49     370  503.75  370.14  505.06   370.4  505.48  370.53  507.56  370.13
     509     370  513.04     370  518.39  370.19   521.7  370.19  524.91  370.37
  537.92  371.65  541.22  371.89  542.32   372.1   545.8  372.19  575.74  373.74
  577.08  373.86  599.27  377.01  605.31  377.77  608.04  378.01  611.15  378.12
  614.15  378.14  616.12   378.1  621.88  378.21  625.35  378.34  639.16  379.09
  657.61     380  661.97  380.57  669.23  381.67  678.71  383.47

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  406.34     .04  433.22    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        406.34  433.22            89.54  100.49  110.66             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   336.4   363.2     385       F
   550.5     618     385       F
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
   127.8   235.6     385   296.1   336.4     385     454   504.5     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4745

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.11    21.9  380.04   28.76  379.88    34.3  379.51    43.1  379.86
   53.28   379.9   56.58  379.78   62.04  379.32   72.76  379.37   82.93  379.28
   86.47  379.41   92.14  379.33   95.69  379.17  109.62  379.08  135.12  378.66
  137.45  378.48  167.42   378.8  171.95  378.72  192.21     378  200.65  377.24
  235.54  377.01  241.83  376.74  253.23   377.1  255.58  376.97  271.08  376.62
  275.97  376.65  279.99  377.08  282.06  377.08  293.56  376.33  300.79  376.13
  316.78  375.92  330.78  375.45  339.87  375.04  353.65     374  362.03  373.25
  376.22   371.8  398.14  369.91  398.19  368.67  441.73  364.73  471.43  362.82
  491.34  362.87  497.92  361.09  497.93  361.09  503.16  359.68  507.05  359.79
  508.57  357.67  513.05  357.45  516.27  357.67     524  363.35  528.02  363.37
  528.05  363.37  543.42  363.45  576.59  363.78  580.38     364  587.66   364.1
  599.83  364.36  607.95  364.42   639.8     366  660.86   367.5  675.48  368.86
  685.51     370  701.05  372.18  718.22  373.29  725.55  373.48  731.12  374.02
  748.44  374.98  752.53   375.3   765.7  375.87  778.37  376.85  791.24     378
  806.37     380  808.13  380.31  815.79  381.16  824.93     382  831.66  382.72

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  491.34     .04     524    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
        491.34     524           111.08  108.67  106.25             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4636

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.34    6.89  380.72    8.14  380.72    21.8  379.64   39.34     378
   67.85     376  132.49  373.43  147.33     374  162.25     376   169.4  376.34
  178.16  375.89  185.65  375.64  200.34  375.76   233.4  375.68  239.11  375.36
   249.5  375.34  251.25  375.42   257.5  375.35  267.44  374.96  277.67  374.75
  315.27  374.57  318.08  374.63  344.76     374   355.8     372  365.77     370
  409.43     368  426.89  366.86  461.95  364.11   477.5  361.95  477.88   361.7
  477.89  361.69   483.5  357.91  493.33  357.61  499.07  357.85   502.3  362.25
  508.59  362.41  508.61  362.41   524.4  362.83  556.76  362.64  588.33  363.03
  609.48  362.74  620.82  363.21  643.23  363.52  650.91  363.84  673.28  365.16
  690.67  365.89   697.4  365.96  767.85  369.67   776.5     370  791.17  370.91
  827.59     374  829.12  374.06  835.04     374  840.77  373.45  865.39     370
  874.22     368  886.48  367.07   898.7     368  908.05     370  921.08     372
  930.79     374  936.24     376  940.95     378  945.37     380  961.95     388
  966.25     390  970.84     392  976.29     394   984.5     396

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   477.5     .04   502.3    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         477.5   502.3            90.09   85.72   81.01             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  829.12  930.96  374.06       T
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    12.5    47.6     385   159.7   233.5     385   289.2   333.6     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4550

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         487.5  517.99           205.67  206.54  206.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

BRIDGE
```

RIVER: Plumtree
REACH: Plumtree RS: 4400

INPUT
Description: US 40 - modified to a 50 ft bridge opening and assuming a 3' depth of the roadway
Distance from Upstream XS = 53
Deck/Roadway Width = 104
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 20

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
5.8	380		83	378		165	376	
237	374		324	372		391	371.588	
429	371.157		463.7	370.927		467.5	370.92	367.92
490.9	370.876	367.876	517.5	371.19	368.19	527.4	371.004	
560.1	371.263		596.7	371.72		644	372	
732	374		786	376		860	378	
928	380		999	382				

Upstream Bridge Cross Section Data
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.61	5.72	380	14.44	379.53	24.98	379.26	49.94	378
51.11	377.81	52.48	377.77	57.27	377.13	65.46	377.09	83.13	376.44
115.32	376.53	129.27	376.2	134.89	375.7	161.6	375.1	180.09	374.38
184.24	374	192.05	373.05	194.36	373.3	203.06	373.7	213.23	373.33
227.71	372.43	230.87	372.39	241.61	372.73	250.77	372.75	269.45	372.53
285.09	372.56	296.76	372.27	299.73	372.12	301.56	372.12	324.23	373.13
352.74	371.54	360.77	370.69	406.27	367.82	421.84	366.98	442.28	366.44
468.82	365.41	485.45	363.53	487.5	362.45	487.54	362.43	497.34	357.27
502.26	357.24	507.29	357.62	517.01	361.85	517.99	361.92	518.04	361.92
534.2	362.95	563.73	363.2	593.31	362.98	614.08	362.38	634.37	362.55
654.16	363.24	660.04	363.19	685.91	363.78	696.84	364.73	723.22	364.95
742.94	365.93	815.68	370.67	842.59	372	866.09	374.13	871.35	374.51
874.28	374.54	906.93	376.44	924.53	378	932.06	378.21	947.24	379.65
949.47	379.69	952.48	379.61	972.07	380.62	978.55	380.78	985.97	381.67
993.29	382.35	1003.09	382.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	487.5	.04	517.99	.075

Bank Sta: Left Right Coeff Contr. Expan.
487.5 517.99 .3 .5
Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	324.23	373.13	F
324.23	450.1	370.88	F
530.1	1003.09	370.88	F

Downstream Deck/Roadway Coordinates
num= 13

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
13	378		97	376		158	374	
290.3	372.244		328	371.79		354.7	371.615	
356.06	371.61	368.61	387.1	371.555	368.555	406.13	371.59	368.59
419.8	371.62		453.4	371.896		491.3	372.287	
600	374							

Downstream Bridge Cross Section Data
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01

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   603.8  375.23  612.54     376  624.11  376.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  369.78     .04  399.49    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        369.78  399.49             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     356  371.55       F
     407  624.11  371.55       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR

  E.G. US. (ft)               359.15    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               359.05    E.G. Elev (ft)              358.85        358.74
  Q Total (cfs)                57.14    W.S. Elev (ft)              358.65        358.73
  Q Bridge (cfs)               57.14    Crit W.S. (ft)              358.31        353.49
  Q Weir (cfs)                          Max Chl Dpth (ft)             1.41          7.04
  Weir Sta Lft (ft)                     Vel Total (ft/s)              3.58          0.48
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            15.98        118.64
  Weir Submerg                          Froude # Chl                  0.61          0.04
  Weir Max Depth (ft)                   Specif Force (cu ft)         16.11        313.15
  Min El Weir Flow (ft)       371.57    Hydr Depth (ft)               1.07          4.46
  Min El Prs (ft)             368.19    W.P. Total (ft)              15.49         31.36
  Delta EG (ft)                 0.42    Conv. Total (cfs)            605.8       10699.8
  Delta WS (ft)                 0.32    Top Width (ft)               14.92         26.59
  BR Open Area (sq ft)        340.47    Frctn Loss (ft)               0.01          0.00
  BR Open Vel (ft/s)            3.58    C & E Loss (ft)               0.10          0.00
  BR Sluice Coef                        Shear Total (lb/sq ft)        0.57          0.01
  BR Sel Method          Energy only    Power Total (lb/ft s)         2.05          0.00


Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or
greater than
         1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.

BRIDGE OUTPUT  Profile #2-YR

  E.G. US. (ft)               359.74    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               359.63    E.G. Elev (ft)              359.57        359.49
  Q Total (cfs)                85.76    W.S. Elev (ft)              359.44        359.49
  Q Bridge (cfs)               85.76    Crit W.S. (ft)              358.57        353.83
  Q Weir (cfs)                          Max Chl Dpth (ft)             2.20          7.80
  Weir Sta Lft (ft)                     Vel Total (ft/s)              2.95          0.62
  Weir Sta Rgt (ft)                     Flow Area (sq ft)            29.05        139.12
  Weir Submerg                          Froude # Chl                  0.41          0.05
```

Weir Max Depth (ft)		Specif Force (cu ft)	35.21	411.00
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	1.59	5.01
Min El Prs (ft)	368.19	W.P. Total (ft)	19.16	33.28
Delta EG (ft)	0.25	Conv. Total (cfs)	1424.5	13411.3
Delta WS (ft)	0.15	Top Width (ft)	18.23	27.76
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.01	0.00
BR Open Vel (ft/s)	2.95	C & E Loss (ft)	0.06	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.34	0.01
BR Sel Method	Energy only	Power Total (lb/ft s)	1.01	0.01

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	361.09	Element		
W.S. US. (ft)	360.91	E.G. Elev (ft)	360.92	360.79
Q Total (cfs)	206.12	W.S. Elev (ft)	360.71	360.77
Q Bridge (cfs)	206.12	Crit W.S. (ft)	359.42	354.75
Q Weir (cfs)		Max Chl Dpth (ft)	3.47	9.08
Weir Sta Lft (ft)		Vel Total (ft/s)	3.70	1.17
Weir Sta Rgt (ft)		Flow Area (sq ft)	55.65	176.69
Weir Submerg		Froude # Chl	0.43	0.08
Weir Max Depth (ft)		Specif Force (cu ft)	104.23	618.63
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	2.36	5.22
Min El Prs (ft)	368.19	W.P. Total (ft)	25.08	40.54
Delta EG (ft)	0.31	Conv. Total (cfs)	3516.7	18801.7
Delta WS (ft)	0.15	Top Width (ft)	23.57	33.88
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.04	0.01
BR Open Vel (ft/s)	3.70	C & E Loss (ft)	0.10	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.48	0.03
BR Sel Method	Energy only	Power Total (lb/ft s)	1.76	0.04

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	362.44	Element		
W.S. US. (ft)	362.12	E.G. Elev (ft)	362.20	361.96
Q Total (cfs)	424.60	W.S. Elev (ft)	361.81	361.90
Q Bridge (cfs)	424.60	Crit W.S. (ft)	360.48	355.77
Q Weir (cfs)		Max Chl Dpth (ft)	4.57	10.21
Weir Sta Lft (ft)		Vel Total (ft/s)	5.05	1.92
Weir Sta Rgt (ft)		Flow Area (sq ft)	84.10	221.44
Weir Submerg		Froude # Chl	0.52	0.11
Weir Max Depth (ft)		Specif Force (cu ft)	223.49	860.75
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	2.98	4.58
Min El Prs (ft)	368.19	W.P. Total (ft)	30.20	56.21
Delta EG (ft)	0.50	Conv. Total (cfs)	6184.6	25078.3
Delta WS (ft)	0.24	Top Width (ft)	28.19	48.31
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.08	0.01
BR Open Vel (ft/s)	5.05	C & E Loss (ft)	0.17	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.82	0.07
BR Sel Method	Energy only	Power Total (lb/ft s)	4.14	0.14

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	363.01	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	362.62	E.G. Elev (ft)	362.74	362.45
Q Total (cfs)	545.44	W.S. Elev (ft)	362.25	362.36
Q Bridge (cfs)	545.44	Crit W.S. (ft)	360.93	356.23
Q Weir (cfs)		Max Chl Dpth (ft)	5.01	10.67
Weir Sta Lft (ft)		Vel Total (ft/s)	5.61	2.23
Weir Sta Rgt (ft)		Flow Area (sq ft)	97.16	244.44
Weir Submerg		Froude # Chl	0.44	0.13
Weir Max Depth (ft)		Specif Force (cu ft)	292.58	981.95
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	3.27	4.88
Min El Prs (ft)	368.19	W.P. Total (ft)	32.16	58.88
Delta EG (ft)	0.58	Conv. Total (cfs)	7542.2	28078.6
Delta WS (ft)	0.28	Top Width (ft)	29.67	50.14
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.10	0.02
BR Open Vel (ft/s)	5.61	C & E Loss (ft)	0.20	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.99	0.10
BR Sel Method	Energy only	Power Total (lb/ft s)	5.54	0.22

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #200-YR

E.G. US. (ft)	363.56	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	363.12	E.G. Elev (ft)	363.30	362.95
Q Total (cfs)	675.92	W.S. Elev (ft)	362.72	362.83
Q Bridge (cfs)	675.92	Crit W.S. (ft)	361.37	356.69
Q Weir (cfs)		Max Chl Dpth (ft)	5.48	11.14
Weir Sta Lft (ft)		Vel Total (ft/s)	6.08	2.52
Weir Sta Rgt (ft)		Flow Area (sq ft)	111.19	268.29
Weir Submerg		Froude # Chl	0.46	0.15
Weir Max Depth (ft)		Specif Force (cu ft)	373.71	1120.90
Min El Weir Flow (ft)	371.57	Hydr Depth (ft)	3.64	5.35
Min El Prs (ft)	368.19	W.P. Total (ft)	33.63	59.82
Delta EG (ft)	0.64	Conv. Total (cfs)	9263.5	31385.7
Delta WS (ft)	0.31	Top Width (ft)	30.55	50.13
BR Open Area (sq ft)	340.47	Frctn Loss (ft)	0.12	0.02
BR Open Vel (ft/s)	6.08	C & E Loss (ft)	0.23	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	1.10	0.13
BR Sel Method	Energy only	Power Total (lb/ft s)	6.68	0.33

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4344

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372

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  567.14  372.99  573.69  373.54  580.03     374  596.09  374.78  599.01  375.01
   603.8  375.23  612.54     376  624.11  376.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  369.78     .04  399.49    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        369.78  399.49           54.24    54.2   54.21             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     356  371.55       F
     407  624.11  371.55       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4289

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  377.16    4.18  376.93    6.02  376.92   13.94  376.67   20.26   376.2
    24.9  376.18   33.24  377.06   38.69  377.12   40.04  377.22   48.07  377.42
   60.83   377.6    66.6  377.54    72.7  377.21   85.85     376   95.14  375.32
  109.02  374.79  111.75  374.73  114.36   374.6   120.7  374.51  138.66     374
  141.06  373.73  149.42  372.56  154.25     372   161.5  371.27  163.79  371.11
  170.81     370  173.81  369.84  195.17  369.42   204.6  369.46  213.04  369.62
   222.3     370  223.43  370.15   226.4  370.41  227.06  370.31  236.85  369.39
  247.27  369.56  249.28   369.5  253.56   369.2  259.27  368.95  271.49     368
  281.02     366  283.53  365.58  284.63  365.72  287.61  365.54  294.16     364
  296.04  363.42  300.15  363.15  323.16   361.6  346.64  361.49  362.78  361.62
  366.58  358.56  372.42  353.86  381.79  352.78  389.78  353.42  392.45  357.73
  395.52  357.99  397.76  358.89  397.77   358.9  401.82  360.54  427.65   361.5
  461.12  362.68  474.19     364  499.06  364.89  510.36  365.54  512.25  365.53
  519.79     366  531.35  367.23  537.87     368  549.98     370  574.53  371.66
  580.97  371.69  592.69  371.17  604.52  371.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  362.78     .04  401.82    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        362.78  401.82          104.83  104.42  103.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 4185

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  370.48     9.2  369.89   11.88  369.82   17.34  369.84   34.57   369.3
   53.84  368.42   59.13  368.23   62.34  368.17   68.09  368.17   70.92  368.38
    76.7  368.52   81.21  368.71   88.53  369.21  100.23  369.08  113.03  368.39
  118.84  368.28  119.85  368.31  124.69  368.28  130.99  368.32  143.69  368.07
  174.23  367.24  184.05  366.87  189.65  366.83  193.83  366.87  199.74  366.51
  200.31  366.52  202.71  366.37  206.47     366  222.83  365.23  229.16   365.1
  237.63  364.59  245.34     364  270.04  362.83  279.56  362.32  284.22     362
  317.36  360.81  352.39  360.17  380.43  360.08  403.96  360.43  405.79  359.32
  407.94  358.02  410.35  357.61     417  355.97   420.8  354.77  430.79  360.87
   435.8  361.06  435.83  361.06  448.07  361.52  480.45   361.7  518.27  363.36
  531.33     364  532.88  364.19  543.89  364.64  551.51  365.01  553.39  365.05
  557.04   365.2  562.67  365.52  565.16  365.53  571.76  365.76  589.17  365.65
   601.4  365.75  611.19   365.7  613.71  365.74  619.92     366  625.24  366.72
   632.9  367.41  636.14  367.76  639.39     368  644.27  368.63  644.65  368.64
  646.39   368.9  647.36  368.89   650.3  369.29

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  403.96     .04  430.79    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        403.96  430.79          151.73  151.97  152.24             .1       .3
```

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4033

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	371.31	6.28	371.09	10.1	370.82	11.41	370.78	13.41	370.65
16.07	370.59	24.34	370.14	26.91	370.09	30.53	370.19	38.94	370.2
41.71	370.32	43.77	370.21	45.82	370	47.56	369.91	61.47	368.93
64.73	368.91	74.46	369.43	84.71	369.4	87.19	369.59	93.43	369.89
94.09	369.89	96.1	370	98.42	370.2	102.15	370.38	104.17	370.4
106.65	370.37	110.1	370.2	112.15	370	115.71	369.82	128.08	369.81
137.68	369.7	151.03	369.46	154.18	369.16	164.93	368.77	175.08	368.49
185.11	368.1	190.59	367.77	192.4	367.74	209.8	366.53	222.55	365.72
229.81	365.17	231.09	365.15	237.47	365.25	254.65	364.85	274.84	362
281.46	361.45	311.04	360.26	324.61	359.69	324.63	359.69	327.57	359.56
332.63	355.53	339.8	355.05	344.88	355.72	350.28	359.03	354.96	359.02
354.99	359.02	368.82	358.97	388.87	359.13	402.39	358.88	463.03	360
463.46	360.12	468.3	360.75	482.77	362	495.13	362.44	501.53	362.51
509.75	362.5	519.32	362.16	523.42	362.13	524.98	362	532.66	361.82
536.09	361.79	548.11	361.82	551.96	362	557.9	362.44	583.12	363.9
596.37	364.95								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	327.57	.04	350.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
327.57	350.28	105.3	103.27	101.24	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3930

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	373.25	5.62	373.04	18.75	372.65	20.05	372.56	51.89	373.28
67.22	372.62	75.52	372.21	81.21	372	82.89	371.8	83.35	371.81
100.65	370.82	104.09	370.51	109.16	370	119.9	369.24	121.3	369.19
125.83	369.28	143.55	369.25	145.3	369.37	145.92	369.31	149.12	369.58
149.56	369.54	151.28	369.67	155.23	369.78	159.52	369.77	162.64	369.66
165.16	369.5	170.48	369	173.88	368.53	174.87	368.43	177.64	368
179.57	367.59	182.98	366.78	185.85	366	189.84	365.01	193.24	364
205.26	362.99	232.35	361.15	264.16	359.45	274.41	358.31	274.42	358.31
280.37	357.65	286.95	354.74	289.44	354.49	294.11	355.34	299.09	358.68
305.18	358.74	305.19	358.74	321.51	358.88	353.18	358.92	436.87	360
449.41	362	451.92	362.47	457.66	363.46	461.04	364	466.97	364.48
469.66	364.48	474.3	364.61	476.21	364.58	476.86	364.61	477.78	364.59
488.71	364.64	490.27	364.68	512.72	365.88	514.21	366	532.64	368
542.86	370	544.26	370.23	546.1	370.43	549.88	370.48	552.59	370.59

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	280.37	.04	299.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
280.37	299.09	112.01	113.72	114.59	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
176	200.4	375	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
163.1	176	375

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3816

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	374.86	10.9	374	35.12	372	42.05	371.48	47.58	371.12
58.88	370.34	59.53	370.34	78.46	370.9	81.56	371.04	85.42	370.91
91.5	370.8	96.65	370.74	108.4	370.09	110.41	370	112.14	369.8
112.78	369.76	116.9	369.37	121.06	369	125.02	368.8	128.66	368.54
132.43	368.4	135.47	368.11	138.27	368.07	140.86	368.14	143.7	368.03
150.81	367.6	154.5	367.24	157.37	366.85	163.04	366	174.59	362.82
217.65	358.92	236.4	357.65	236.42	357.65	237.46	357.58	243.76	354.29
251.5	353.5	252.56	353.49	255.1	356.69	266.5	357.28	266.52	357.28
271.38	357.54	301.23	358.52	327.76	358.95	350.57	360	371.84	361.19
386.87	362	399.91	363.11	404.12	363.54	410.91	364.18	416.03	364.61
421.73	365	428.74	365.37	429.75	365.39	438.84	365.39	440.51	365.38
443.31	365.3	444.17	365.29	449.76	365.05	455.01	364.86	460.03	365.2
465.28	365.49	469.1	365.73	472.03	365.86	472.64	365.86	474.82	366.04
496.26	366.8	498.97	366.85	515.31	366.69	518.73	366.8	522.16	366.85
525.33	367.02	526.96	367.04	534.8	367.32	549.03	368	554.32	368.52

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	237.46	.04	255.1	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
237.46 255.1 128.5 127.87 127.21 .1 .3
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
173.5	186.9	375	F
373.3	445.4	375	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
142.2	173.5	375

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3688

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	367.19	12.07	367.61	20.74	367.88	33.44	368.3	35.81	368.34
36.91	368.35	38.51	368.3	41.9	368.05	42.34	368	46.49	367.62
57.82	366.07	58.06	366	58.98	365.89	59.73	365.86	61.35	365.74
62.76	365.59	63.36	365.54	64.65	365.39	65.31	365.33	65.53	365.3
68.14	364.99	69.06	364.94	77.78	365.17	78.29	365.12	78.87	365.13
79.51	365.14	81.34	364.92	81.98	364.92	82.64	364.91	84.22	364.72
85.27	364.68	87.32	364.44	87.96	364.4	91.82	364	92.71	363.94
94.56	363.8	107.05	361.62	112.03	361.62	156.44	357.41	156.46	357.41
166.74	356.43	170.56	353.16	171.46	352.86	179.43	353.24	182.46	356.86
186.46	357	186.47	357.01	203.22	357.63	227.7	358.5	256.67	360
261.88	360.34	264.57	360.54	271.14	360.98	283.16	361.89	284.48	362
293.32	363.31	295.65	363.6	300.63	364.22	302.93	364.48	304.51	364.65
310.25	365.25	317.77	366.05	320.57	366.39	321.8	366.52	324.49	366.86
328.15	367.23	329.94	367.46	331.84	367.65	332.96	367.78	334.64	368
343.14	368.38	353.94	368.67						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	166.74	.04	182.46	.075

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
166.74 182.46 137.67 137.99 138.3 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
72.5	108.3	370	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
309.8	338.6	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3550

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	367.59	21.83	366	22.15	365.93	22.36	365.91	22.65	365.88
24.81	365.75	34.15	365.49	36.08	365.41	36.47	365.41	56.33	364.39
62.74	364.35	64.54	364.35	78.24	364.86	78.82	364.87	80.11	364.9
92.13	365.45	95.39	365.49	97.19	365.52	98.79	365.54	111.29	364.66
113.06	364.51	113.63	364.52	115.75	364.34	116.17	364.34	118.14	364.18
118.26	364.18	120.55	364	125.47	363.66	128.06	363.49	130.87	363.32
133.62	363.17	137.86	362.93	141.25	362.78	142.84	362.67	144.42	362.54
144.88	362.52	147.11	362.3	147.6	362.27	150.07	362	168.07	360.18
202.08	358.28	222.67	356.22	222.69	356.22	229.29	355.55	231.57	353.11
237.67	352.85	241.52	353.14	245.66	357.02	252.8	357.45	270.01	358.5
299.86	361.08	320.94	363.87	322.12	363.98	326.43	364.47	335.31	366
338.09	366.52	340.43	367.05	344.77	368	352.58	368.68	357.63	369.11
363.94	369.54	366.26	369.71	370.89	370	376.06	370.55	378.66	370.84
385.91	371.5	387.76	371.7	391.56	372	393.08	372.13	393.26	372.12
394.51	372.2	396.42	372.27	400.73	372.39	401.46	372.38		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	222.67	.04	245.66	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
222.67	245.66	121.58	121.96	122.09	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
132	172.9	370	F
358.4	401.46	375	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3428

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.25	.08	366.25	.21	366.24	2.49	366.31	5.55	366.33
6.5	366.31	6.69	366.3	6.85	366.29	6.95	366.28	7.02	366.27
7.07	366.26	7.09	366.26	7.37	366.14	7.5	366.11	7.73	366.11
7.81	366	17.71	365.88	17.76	365.88	35.41	362.54	54.26	359.25
71.12	356.77	71.14	356.77	72.75	356.53	82.67	355.38	85.4	352.15
86.22	352.06	88.74	351.86	91.45	352.09	93.89	352.39	98.94	357.17
101.38	357.43	121.79	359.59	156.9	362.39	164.18	363.89	164.43	364.14
168.22	363.93	172.23	363.84	172.9	363.86	176	363.96	177.1	364
178.13	364.1	190.23	365.12	198.83	365.85	199.59	365.91	200.67	366
208.9	367.19	214.54	368	221.01	368.41	227.99	368.94	228.59	368.95
229.18	368.96	244.28	369.43						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	82.67	.04	98.94	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
82.67	98.94	131.85	132.32	132.95	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
31.2	57.1	370	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
7.4	31.2	370	207.8	224.4	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3296

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.04	7.44	368.25	8.57	368.2	13.73	368	15.86	367.86
16.24	367.82	20.57	367.48	24.23	367.01	30.3	366.41	32.66	366
34.91	365.82	36.33	365.68	37.74	365.56	39.57	365.37	40.92	365.29

```
   43.15  365.29    43.9  365.26   57.19  365.22   65.98  364.57   67.12  364.52
   74.19     364   78.97  363.56   80.16  363.45   86.96  362.83   90.65  362.47
   94.56  362.11   95.89     362    97.9   362.2   98.84  362.19  107.93  362.58
  109.64  362.69  113.85  362.82  117.37  362.83  135.78  361.77  153.23  361.58
  168.24  361.26   168.8  361.63  178.91  362.18  192.98  358.61  195.06  357.92
  201.72  355.69  204.53  352.08  205.68  351.83  208.07  351.91  210.45  351.72
  213.06   352.1  214.14  351.94  214.68  352.11   218.9  356.65  223.16  358.34
  225.56  358.53  225.57  358.53   241.1  359.76  252.96  359.64  253.63  359.34
   274.2  360.14  298.22  360.84  338.52     362  345.28  362.49  349.83   362.8
  358.24  363.42  360.55  363.61  366.27     364  376.16  364.76  381.02   365.1
  384.43  365.36   386.5  365.49  387.73  365.58  388.62  365.62  390.74  365.78
  391.33   365.8  393.98     366  397.53  366.12  401.29  366.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  195.06     .04  223.16    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        195.06  223.16           117.57  116.94  115.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3179

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.99    2.92  366.32    4.49     366    7.03  365.74   10.65  365.61
   11.25  365.55   16.84  365.58   20.65  365.55   33.69  365.26   37.05  365.27
   37.83  365.19   39.74  365.22   40.57  365.13   41.71  365.14   42.29  365.07
   42.83  365.07    44.3  364.91   44.81  364.89   52.54  364.19   59.05  363.73
   59.96  363.72   64.43     364   81.81  364.24   90.25  364.43   92.01   364.4
   99.97     364  104.37  363.32  108.33  362.78  110.63  362.49   114.3  362.12
  115.81     362  120.17  361.84  122.87  361.79  123.54  361.75     128  361.77
  128.34  361.74  133.43  361.84  133.74  361.82  143.14  361.87   149.1  361.65
  164.07  359.25  179.76  356.13  194.67  355.75   202.4  355.27  206.08  354.62
   206.1  354.62  214.08  353.21  222.22  351.72   224.4  350.87  225.57  350.64
  226.07   350.5  226.87  350.39  227.28  351.49  228.52  356.98  237.22  357.51
  237.24  357.52   245.5  358.02  261.13  358.56  278.43  358.68  287.56  359.19
  290.34  359.37   293.7  359.56  297.36  359.67  300.98  359.87  307.03     360
  313.84  360.92  321.07     362  329.79  363.01     342  364.37  355.84     366
  363.77  366.33  385.35  367.64  391.11  368.04  397.46  368.33

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  179.76     .04  228.52    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        179.76  228.52           101.1  102.24  103.14             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0    63.2     370       F
    80.2      98     370       F
   277.5   332.8     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      98     149     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3077

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.18    1.12  364.15    2.53  364.12    3.97   364.1    8.56   364.2
    8.98   364.2   10.31  364.25   11.19  364.24   13.14  364.15    13.5  364.12
   14.57     364   18.43  363.88   21.38  363.78   24.61  363.74   33.92  363.48
   39.77  363.33   48.31  362.93   50.98  362.82   61.21  362.37   63.02  362.31
    70.2     362   74.59   361.6    77.1  361.43   82.58  360.97   83.28  360.94
   95.42  360.41   99.21  360.31  103.01  360.23  103.64  360.21  104.52  360.13
  105.54     360  107.69  359.58  114.03     358  134.95   356.4  140.36     356
  163.01  355.01  179.63  355.11  193.39  354.95  204.81  355.12  210.64  354.59
```

210.65	354.59	217	354.02	219.69	351.67	221.67	350.95	222.49	350.87
223.8	350.87	226.26	350.75	228.21	350.72	229.11	350.89	230.73	354.07
234.33	355.41	241.4	355.41	250.01	355.42	265.82	356.22	283.13	356.64
290.94	357.97	293.37	357.99	293.48	358	295.67	358.42	300.65	359.3
303.5	359.83	304.53	360	320.68	361.37	322.55	361.51	328.44	362
330.19	362.24	341.42	364	344.14	364.6	349.88	366	354.73	367.09

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	204.81	.04	234.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204.81	234.33	99.64	98.98	98.39	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2978

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	362.91	26.14	362.3	28.29	362.14	29.8	362.2	30.23	362.16
30.97	362	35.23	361.59	35.47	361.59	37.04	361.43	37.26	361.43
38.5	361.3	38.73	361.31	45.76	360.54	80.82	360.96	102.15	360.38
114.55	360.01	118.88	359.77	161.71	358.87	229.91	358	230.71	357.16
236.45	357.02	243.79	356.29	243.81	356.29	245.02	356.16	250.07	353.33
252.35	352.96	254.47	350.89	255.74	350.56	257.29	350.63	259.41	350.68
261.6	350.53	263.18	350.69	263.71	350.84	265.48	354.05	274.04	355.2
274.05	355.2	275.87	355.44	297.22	357.18	316.25	361.84	320.6	362.22
347.97	363.14	347.98	363.82	352.13	364	360.46	364.7	368.43	365.33
374.4	365.77	378.19	366	379.71	366.15	380.66	366.19	383.79	366.08
384.49	366.11	386.36	366	389.31	365.95	390.69	366	391.27	366.26
391.59	366.47	398.39	367.21	402.86	368	410.75	370	415.21	370.52
417.39	370.39	425.64	370.89	432.78	372	437.01	373.28	442.02	374.48
446.02	375.38	448.25	375.83	449.28	376	451.72	376.13	455.64	376.24
456.7	376.24	472.15	376.84	479.93	377.06	491.12	376.37		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	245.02	.04	274.04	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.02	274.04	61.85	60.74	60.21	.1 .3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	141.71	359.42	F
333.74	436.4	359.42	F
436.4	487.3	370	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
23.3	86.1	370	160.1	223.6	370	343	389	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2917

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.13	2.63	368.04	6.35	367.71	9.99	367.48	11.7	367.47
35.48	366.41	37.6	366.2	47.35	366	53.1	365.63	55.49	365.67
59.74	365.47	61.17	365.78	62.32	365.9	63.72	365.91	67.25	365.78
68	365.82	71.7	365.74	87.56	365.03	104.39	364	110.05	363.87
115.72	364	121.31	364.39	126.33	364.38	131.94	364.63	136.94	363.92
168.89	362	189.9	361.76	192.5	362	193.52	362.01	197.76	361.7
204.56	361.38	249.88	360.38	263.45	359.81	270.42	359.65	306.63	359.2
346.56	358.69	357.45	358.68	370.03	358.66	382.52	358.63	395.46	358.28
408.81	358.21	431.48	357.13	440.02	355.31	440.05	355.31	441.62	354.97
449.4	353.04	452.07	350.76	453.48	350.54	456.39	350.36	460.31	350.51
460.82	350.59	463.55	354.74	471.92	355.74	471.94	355.74	475.59	356.18
490.04	357.59	503.18	359.84	518.18	361.77	535.05	361.94	560.7	363.42
591.03	363.84	596.29	364	615.98	366.75	623.66	366.17	626.79	366.33
628.12	366.32	630.23	366.52	637.46	368	644.61	370	649.83	370.84

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  653.46  371.06  662.64  371.32  668.42     372  676.66  372.58  679.51  372.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  440.02     .04  471.92    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        440.02  471.92            89.63   90.26   89.98             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 2900

INPUT
Description: Frederick Road
Distance from Upstream XS =      32
Deck/Roadway Width        =      33
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      17
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   368.5              23     368              86     366
     146     364             200     362             259     360
   337.5 359.415           380.1 359.626           407.4 359.923
   427.3 360.169          440.02  360.26     358   456.8 360.827     358
  471.93  360.99     358   563.7 363.651             590     364
     641     366          679.51     367

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.13    2.63  368.04    6.35  367.71    9.99  367.48    11.7  367.47
   35.48  366.41    37.6   366.2   47.35     366    53.1  365.63   55.49  365.67
   59.74  365.47   61.17  365.78   62.32   365.9   63.72  365.91   67.25  365.78
      68  365.82    71.7  365.74   87.56  365.03  104.39     364  110.05  363.87
  115.72     364  121.31  364.39  126.33  364.38  131.94  364.63  136.94  363.92
  168.89     362   189.9  361.76   192.5     362  193.52  362.01  197.76   361.7
  204.56  361.38  249.88  360.38  263.45  359.81  270.42  359.65  306.63   359.2
  346.56  358.69  357.45  358.68  370.03  358.66  382.52  358.63  395.46  358.28
  408.81  358.21  431.48  357.13  440.02  355.31  440.05  355.31  441.62  354.97
   449.4  353.04  452.07  350.76  453.48  350.54  456.39  350.36  460.31  350.51
  460.82  350.59  463.55  354.74  471.92  355.74  471.94  355.74  475.59  356.18
  490.04  357.59  503.18  359.84  518.18  361.77  535.05  361.94   560.7  363.42
  591.03  363.84  596.29     364  615.98  366.75  623.66  366.17  626.79  366.33
  628.12  366.32  630.23  366.52  637.46     368  644.61     370  649.83  370.84
  653.46  371.06  662.64  371.32  668.42     372  676.66  372.58  679.51  372.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  440.02     .04  471.92    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        440.02  471.92             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

Downstream  Deck/Roadway Coordinates
    num=      13
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0     368              60     366             120     364
     174     362             234     360           312.1 359.415
   354.5 359.626           382.1 359.923           401.6 360.169     358
   431.7 360.827     358   538.1 363.651             556     364
     615     366

Downstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   369.6    2.79  369.53    7.15  369.53   11.31  369.26   13.16  369.19
   29.03  369.08   30.88     369    36.7  368.66   39.93  368.57   49.72  368.38
   60.81     368    70.9  367.78   72.58  367.64    82.8  367.42   83.97  367.32
```

85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

Bank Sta: Left	Right	Coeff Contr.	Expan.
400.8	432.64	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	395.05	357	F
445.1	623.32	357	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd = .8
Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	354.28	Element		
W.S. US. (ft)	354.15	E.G. Elev (ft)	354.20	354.07
Q Total (cfs)	129.00	W.S. Elev (ft)	354.06	353.90
Q Bridge (cfs)	129.00	Crit W.S. (ft)	352.29	353.06
Q Weir (cfs)		Max Chl Dpth (ft)	3.70	3.82
Weir Sta Lft (ft)		Vel Total (ft/s)	2.99	3.38
Weir Sta Rgt (ft)		Flow Area (sq ft)	43.18	38.18
Weir Submerg		Froude # Chl	0.34	0.30
Weir Max Depth (ft)		Specif Force (cu ft)	80.25	56.97
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)	2.42	1.44
Min El Prs (ft)	358.00	W.P. Total (ft)	20.70	28.48
Delta EG (ft)	0.41	Conv. Total (cfs)	2619.2	1724.2
Delta WS (ft)	0.55	Top Width (ft)	17.83	26.58
BR Open Area (sq ft)	155.62	Frctn Loss (ft)	0.12	0.18
BR Open Vel (ft/s)	3.38	C & E Loss (ft)	0.01	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.32	0.47
BR Sel Method	Energy only	Power Total (lb/ft s)	0.94	1.58

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	354.94	Element		
W.S. US. (ft)	354.75	E.G. Elev (ft)	354.84	354.70
Q Total (cfs)	201.00	W.S. Elev (ft)	354.62	354.50
Q Bridge (cfs)	201.00	Crit W.S. (ft)	352.87	353.57
Q Weir (cfs)		Max Chl Dpth (ft)	4.26	4.42
Weir Sta Lft (ft)		Vel Total (ft/s)	3.73	3.60
Weir Sta Rgt (ft)		Flow Area (sq ft)	53.83	55.77
Weir Submerg		Froude # Chl	0.41	0.30
Weir Max Depth (ft)		Specif Force (cu ft)	118.53	94.00
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)	2.63	1.83
Min El Prs (ft)	358.00	W.P. Total (ft)	23.67	33.22
Delta EG (ft)	0.40	Conv. Total (cfs)	3457.8	2926.8
Delta WS (ft)	0.46	Top Width (ft)	20.44	30.42
BR Open Area (sq ft)	155.62	Frctn Loss (ft)	0.13	0.14
BR Open Vel (ft/s)	3.73	C & E Loss (ft)	0.01	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.48	0.49
BR Sel Method	Energy only	Power Total (lb/ft s)	1.79	1.78

Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the downstream
energy. This is not physically possible, the momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	356.13	Element		
W.S. US. (ft)	355.80	E.G. Elev (ft)	355.93	355.71
Q Total (cfs)	391.00	W.S. Elev (ft)	355.52	355.36
Q Bridge (cfs)	391.00	Crit W.S. (ft)	354.12	354.38
Q Weir (cfs)		Max Chl Dpth (ft)	5.16	5.28
Weir Sta Lft (ft)		Vel Total (ft/s)	5.11	4.77
Weir Sta Rgt (ft)		Flow Area (sq ft)	76.56	81.99
Weir Submerg		Froude # Chl	0.40	0.37
Weir Max Depth (ft)		Specif Force (cu ft)	215.44	188.88
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)	2.54	2.70
Min El Prs (ft)	358.00	W.P. Total (ft)	33.74	34.95
Delta EG (ft)	0.55	Conv. Total (cfs)	4933.1	5377.4
Delta WS (ft)	0.56	Top Width (ft)	30.10	30.34
BR Open Area (sq ft)	155.62	Frctn Loss (ft)	0.19	0.13
BR Open Vel (ft/s)	5.11	C & E Loss (ft)	0.03	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.89	0.77
BR Sel Method	Energy only	Power Total (lb/ft s)	4.54	3.69

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	357.53	Element		
W.S. US. (ft)	356.97	E.G. Elev (ft)	357.26	356.98
Q Total (cfs)	758.00	W.S. Elev (ft)	356.48	356.21
Q Bridge (cfs)	758.00	Crit W.S. (ft)	355.72	355.35
Q Weir (cfs)		Max Chl Dpth (ft)	6.12	6.13
Weir Sta Lft (ft)		Vel Total (ft/s)	7.08	7.04
Weir Sta Rgt (ft)		Flow Area (sq ft)	107.03	107.70
Weir Submerg		Froude # Chl	0.51	0.50
Weir Max Depth (ft)		Specif Force (cu ft)	408.21	377.20
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)	3.34	3.56
Min El Prs (ft)	358.00	W.P. Total (ft)	37.42	36.65
Delta EG (ft)	0.81	Conv. Total (cfs)	8306.3	8208.6
Delta WS (ft)	0.90	Top Width (ft)	32.03	30.27
BR Open Area (sq ft)	155.62	Frctn Loss (ft)	0.28	0.19
BR Open Vel (ft/s)	7.08	C & E Loss (ft)	0.01	0.06
BR Sluice Coef		Shear Total (lb/sq ft)	1.49	1.56
BR Sel Method	Energy only	Power Total (lb/ft s)	10.53	11.01

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	359.05	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	358.71	E.G. Elev (ft)	359.05	357.38
Q Total (cfs)	963.00	W.S. Elev (ft)	358.00	356.39
Q Bridge (cfs)	963.00	Crit W.S. (ft)	356.17	355.80
Q Weir (cfs)		Max Chl Dpth (ft)	7.64	6.31
Weir Sta Lft (ft)		Vel Total (ft/s)	6.19	8.49
Weir Sta Rgt (ft)		Flow Area (sq ft)	155.62	113.38
Weir Submerg		Froude # Chl	0.40	0.60
Weir Max Depth (ft)		Specif Force (cu ft)	626.28	486.37
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)		3.75
Min El Prs (ft)	358.00	W.P. Total (ft)	72.36	37.02
Delta EG (ft)	1.81	Conv. Total (cfs)	10091.0	8882.1
Delta WS (ft)	2.32	Top Width (ft)		30.25
BR Open Area (sq ft)	155.62	Frctn Loss (ft)		
BR Open Vel (ft/s)	6.19	C & E Loss (ft)		
BR Sluice Coef	0.41	Shear Total (lb/sq ft)	1.22	2.25
BR Sel Method	Press Only	Power Total (lb/ft s)	7.57	19.09

Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were
used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #200-YR

E.G. US. (ft)	359.73	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	359.35	E.G. Elev (ft)	359.73	359.70
Q Total (cfs)	1207.00	W.S. Elev (ft)	359.35	359.35
Q Bridge (cfs)	1190.82	Crit W.S. (ft)	356.68	356.32
Q Weir (cfs)	16.20	Max Chl Dpth (ft)	8.99	9.27
Weir Sta Lft (ft)	270.68	Vel Total (ft/s)	7.05	0.00
Weir Sta Rgt (ft)	363.72	Flow Area (sq ft)	171.25	
Weir Submerg	0.00	Froude # Chl	0.46	0.43
Weir Max Depth (ft)	0.31	Specif Force (cu ft)	942.04	951.13
Min El Weir Flow (ft)	359.43	Hydr Depth (ft)		
Min El Prs (ft)	358.00	W.P. Total (ft)	72.37	70.34
Delta EG (ft)	1.93	Conv. Total (cfs)		
Delta WS (ft)	2.64	Top Width (ft)		
BR Open Area (sq ft)	155.62	Frctn Loss (ft)		
BR Open Vel (ft/s)	7.65	C & E Loss (ft)		
BR Sluice Coef	0.47	Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were
used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2827

INPUT
Description:

Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	400.8	.04	432.64	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
400.8	432.64	59.3	67.61	75.81	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	395.05	357	F
445.1	623.32	357	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2759

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	372.77	2.31	372.75	3.21	372.76	3.79	372.7	5.35	372.51
10.05	372	17.86	370.67	21.54	370	22.94	369.68	29.73	368
38.04	366	41.31	365.14	46.41	364	49.98	363.37	58.32	362
62.31	361.29	70.12	360	83.48	358.75	88.76	358.48	93.5	358.22
94.45	358.15	97.16	358	128.47	356.25	137.97	356	166.97	354.77
188.46	354.27	206.85	354.18	213.44	353.14	217.92	353.75	217.94	353.75
221.54	354.24	229.72	353.68	232.16	349.32	242.11	350.03	244.47	353.83
247.97	353.92	254.64	354.1	273.96	354.9	288.2	354.55	327.4	356
337.32	356.54	361.29	357.92	361.9	358	364.26	358.17	365.41	358.24
367	358.37	372.78	358.74	375.31	358.81	388.46	358.79	394.15	358.8
397.84	358.95	400.41	358.96	402.23	359.06	404.53	359.21	405.49	359.23
408.57	359.48	408.95	359.49	411.45	359.7	411.87	359.72	415.03	359.99
415.31	360	417.03	360.2	418.39	360.3	428.8	360.31	433.64	360.4
438.69	360.56	442.82	360.73	450.11	361.09	466.87	362	474.25	362.98
481.02	364	491.61	366	492.4	366.16	501.24	368		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	229.72	.04	244.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
229.72	244.47	166.79	169.71	170.1	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.5	6.39	370	8.12	369.55	9.88	369.06	13.59	368
15.68	366.43	16.18	366	16.5	365.69	18.44	364	19.42	363
20.51	362	21.74	361.02	22.67	360	27.21	358.55	28.42	358.17
28.89	358	48.8	356	56.94	355.65	62.31	355.06	97.9	354.08
104.04	353.91	106.64	349.71	112.07	349.9	114.29	352	118.86	352.08
128.02	352.48	129.83	352.56	142.4	352.11	158.46	352.06	163.77	353.31
176.98	353.81	195.26	354.09	212.76	355.32	219.91	355.94	220.06	355.97

```
  220.33     356  220.34     356  220.77  356.04  224.36   356.3   227.8  356.43
  228.59  356.43  235.01  356.02  235.26     356  235.49     356  244.56  356.04
   247.2  356.04  248.45  356.03  254.75  356.02   257.6  356.01   259.1     356
  259.88  356.04  262.22  356.13  262.67  356.15  272.42  356.42  274.41   356.5
  275.87  356.57  277.84  356.65  283.08   356.9  287.67   357.1  289.83   357.2
     291  357.25  295.04  357.45  305.68     358  327.61  359.52  335.25     360
  342.18  360.46  349.91  360.96  357.47  361.46  361.02  361.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  104.04     .04  114.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        104.04  114.29           102.11  104.17  106.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2485

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.38    4.47  368.19    8.54  368.03     9.3     368   11.37  367.71
   12.69   367.6   12.97  367.59   21.49  367.83   21.72  367.79   24.75  367.98
   24.78  367.97   25.94  368.02   27.18  368.02   28.49  367.97   29.82  367.87
   30.25  367.77   31.68  367.58   33.56  367.26      35  366.85   38.23     366
   38.64  365.88   39.08  365.73   41.93  364.86   44.58     364   51.26  362.13
   51.81     362   52.07  361.95   53.08  361.71   59.58  360.24    60.5     360
   66.26  358.56   68.19     358   79.86  356.07    80.2     356  108.17   354.1
  116.73   353.3  136.32  353.03  148.67  352.95   152.4  351.89   153.8  351.49
  156.31  351.59  159.04  352.43  164.74  351.94  168.76   349.2  174.15  349.34
  176.14  352.31  183.78  352.86  185.84  353.01  202.53  353.09  228.12  353.77
  242.58     354  243.08  354.08  268.03  355.47   271.1  355.65  276.88     356
  279.61  356.42  290.09     358   293.7  358.35  295.16  358.52  296.99  358.71
  299.04  359.06  299.15  359.06  301.56  358.95  310.74  358.55  311.53  358.57
  326.08     360  343.08     362  362.94  363.92  363.84     364  373.86  364.98
  379.95  365.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  164.74     .04  176.14    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        164.74  176.14            153.6  154.59  153.42             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2331

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.49    6.68  364.41    7.02   364.4   14.19  364.07   14.82  364.03
   15.07     364   20.81  363.68   24.25  363.45   29.07  363.13   39.92  362.46
   45.16  362.09   46.53     362   47.28  361.49   49.54     360   52.15   358.3
   52.62     358   55.48  356.39   56.22     356   57.41  355.85   63.81  354.98
   71.45  353.58   95.41  352.52  117.31   352.1  137.93  352.42  139.13  352.39
  143.89  352.26   149.2  348.51  154.15   348.1  159.57  348.42  163.74  351.17
  170.01  352.12  172.55   352.5   187.7  353.21  192.26  353.51  195.07     354
  218.88  355.98  218.91  355.98   219.4  355.99  219.65     356  241.82  357.49
  246.88  357.84  249.17     358  261.51  359.33   265.1  359.63  265.64  359.68
  269.31     360  281.07  361.43  286.16     362  288.44  362.36  288.85  362.43
  290.52  362.72  297.61     364  300.67  364.91  304.17     366  307.87  366.43
     309   366.5  310.22  366.57  314.29  366.95  316.04   367.1  316.75  367.15
  319.13  367.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  143.89     .04  163.74    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        143.89  163.74           179.37   177.6  175.87             .1       .3
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CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2153

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.32	3.92	364.56	4.01	364.56	8.3	364.3	12.46	364.04
12.76	364.02	13.08	364	13.25	363.87	13.45	363.73	16.05	362
16.68	361.53	18.91	360	20.77	358.61	21.6	358	21.89	357.75
24.09	356	30.84	354.47	33.11	354	52.92	352.32	74.07	351.81
101.65	351.28	120.22	351.43	120.23	351.43	120.5	351.43	127.63	349.88
130.12	350.05	131.34	346.86	142	346.39	144.29	352.45	150.56	352.61
153.23	352.68	168.08	353.97	172.88	354.8	182.71	356	183.66	356.09
183.87	356.11	184.85	356.22	185.07	356.24	187.04	356.46	193.55	357.16
200.75	358	212.41	359.89	213.06	360	217.64	360.89	223.61	362
228.58	363.12	232.74	364	234.97	364.51	241.92	366	244.79	366.58
251.21	368	256.5	369.43	258.4	370	259.7	370.42	264.45	372
269.94	372.39	273.44	372.63						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	130.12	.04	144.29	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
130.12	144.29	160.15	158.75	157.04	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1994

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.16	1.03	359.27	6.73	358.67	10.37	358.29	12.97	358
17.14	356.63	19	356	24.53	354.42	26.07	354	48.12	352.4
57.17	351.28	75.62	351.28	92.39	351.14	101.12	350.8	106.95	350.57
106.96	350.57	116.46	350.19	118.2	346.45	127.95	346.81	131.85	351.13
136.96	351.29	150.75	351.72	165.28	352.31	177.37	352.98	196.01	354
199.93	354.72	201.85	354.82	202.83	354.87	204.78	354.98	212.96	355.47
214.68	355.8	216.21	355.53	218.47	355.7	222.42	356	236.41	357.33
243.08	358	253.87	359.4	258.55	360	260.61	360.31	272.91	362
275.22	362.56	277.16	363.07	277.31	363.11				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	116.46	.04	131.85	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
116.46	131.85	108.1	106.05	103.75	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1888

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.32	3.66	359.97	3.97	359.97	9.29	359.12	9.61	359.1
10.06	359.05	11.3	358.9	12.39	358.76	16.42	358	26.85	356.12
27.4	356	44.51	354.47	49.85	354	68.2	352.46	81.53	351.35
104.16	350.46	120.73	349.86	122.9	349.65	122.92	349.65	129.91	349
132.99	345.73	137.07	345.92	142.97	349.5	150.38	349.68	153.97	350.05
163.02	350.99	180.43	351.29	195.81	351.74	212.9	353.83	217.47	354.81
227.64	355.42	283.48	356	287.69	356.35	288.71	356.43	290.19	356.54
297.25	357.04	307.21	357.78	310.66	358	311.09	358.05	315.51	358.54
318.4	358.88	320.31	359.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        129.91  142.97            61.13   58.24    54.2             .3       .5

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 1850

INPUT
Description: Private Bridge
Distance from Upstream XS =    18.5
Deck/Roadway Width        =      16
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       8
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    3.66  359.97            81.5  359.87  357.87   101.7 360.452 358.452
   126.6 360.865 358.865     153 360.835 358.835   175.1 360.491 358.491
     201 360.491 358.491  320.31   359.1

Upstream Bridge Cross Section Data
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354   68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        129.91  142.97             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  359.24            91.4 359.823 357.823   114.8 360.523 358.523
   139.8  360.92  358.92     165 360.892 358.892   189.6 360.465 358.465
   211.7 359.771 357.771

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.24    2.43  358.98    4.52  358.77    8.77  358.35   11.48  358.04
   11.83     358   17.63  357.39   27.59  356.34   30.83     356    31.3  355.95
   50.96     354   66.68  349.58   82.55  349.15    94.6  350.53  103.53  350.29
  110.77  348.95  112.07  348.71  119.64  348.74   131.1  348.28  134.38  346.61
  143.36  346.68  149.09  351.02  155.33  350.92  161.76  350.82  177.15  351.12
  196.32  351.55  209.07  352.05  209.56  359.76  230.29  360.75  314.46  356.32
     319  356.67  323.81  357.07  332.17  357.73  334.02  357.88  335.57     358
  340.94  358.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   131.1     .04  149.09    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         131.1  149.09             .3       .5

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Bridge Coefficient Sets =  1
```

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd = .8
Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	350.09	Element		
W.S. US. (ft)	349.93	E.G. Elev (ft)	350.04	349.97
Q Total (cfs)	129.00	W.S. Elev (ft)	349.87	349.89
Q Bridge (cfs)	129.00	Crit W.S. (ft)	348.26	348.31
Q Weir (cfs)		Max Chl Dpth (ft)	4.14	3.28
Weir Sta Lft (ft)		Vel Total (ft/s)	2.98	1.78
Weir Sta Rgt (ft)		Flow Area (sq ft)	43.23	72.29
Weir Submerg		Froude # Chl	0.36	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	76.12	90.90
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.36	1.73
Min El Prs (ft)	358.87	W.P. Total (ft)	34.18	43.49
Delta EG (ft)	0.16	Conv. Total (cfs)	2513.7	3563.9
Delta WS (ft)	0.07	Top Width (ft)	31.71	41.89
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.03	0.03
BR Open Vel (ft/s)	2.98	C & E Loss (ft)	0.05	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.21	0.14
BR Sel Method	Energy only	Power Total (lb/ft s)	0.62	0.24

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	350.74	Element		
W.S. US. (ft)	350.52	E.G. Elev (ft)	350.68	350.58
Q Total (cfs)	201.00	W.S. Elev (ft)	350.44	350.47
Q Bridge (cfs)	201.00	Crit W.S. (ft)	348.89	348.95
Q Weir (cfs)		Max Chl Dpth (ft)	4.71	3.86
Weir Sta Lft (ft)		Vel Total (ft/s)	2.98	2.03
Weir Sta Rgt (ft)		Flow Area (sq ft)	67.39	98.97
Weir Submerg		Froude # Chl	0.40	0.24
Weir Max Depth (ft)		Specif Force (cu ft)	117.75	147.69
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.27	1.81
Min El Prs (ft)	358.87	W.P. Total (ft)	55.48	57.01
Delta EG (ft)	0.21	Conv. Total (cfs)	3644.5	5058.3
Delta WS (ft)	0.07	Top Width (ft)	52.97	54.76
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.03	0.03
BR Open Vel (ft/s)	2.98	C & E Loss (ft)	0.07	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.23	0.17
BR Sel Method	Energy only	Power Total (lb/ft s)	0.69	0.35

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	351.83	Element		
W.S. US. (ft)	351.55	E.G. Elev (ft)	351.76	351.64
Q Total (cfs)	391.00	W.S. Elev (ft)	351.45	351.49
Q Bridge (cfs)	391.00	Crit W.S. (ft)	350.39	349.75
Q Weir (cfs)		Max Chl Dpth (ft)	5.72	4.88
Weir Sta Lft (ft)		Vel Total (ft/s)	2.73	2.22
Weir Sta Rgt (ft)		Flow Area (sq ft)	143.42	176.34
Weir Submerg		Froude # Chl	0.33	0.25
Weir Max Depth (ft)		Specif Force (cu ft)	246.09	303.02
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.37	1.72
Min El Prs (ft)	358.87	W.P. Total (ft)	107.33	106.26
Delta EG (ft)	0.25	Conv. Total (cfs)	6780.8	9264.8
Delta WS (ft)	0.07	Top Width (ft)	104.70	102.73
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.73	C & E Loss (ft)	0.08	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.28	0.18
BR Sel Method	Energy only	Power Total (lb/ft s)	0.76	0.41

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	352.95	Element		
W.S. US. (ft)	352.67	E.G. Elev (ft)	352.90	352.81
Q Total (cfs)	758.00	W.S. Elev (ft)	352.60	352.60
Q Bridge (cfs)	758.00	Crit W.S. (ft)	351.79	350.96
Q Weir (cfs)		Max Chl Dpth (ft)	6.87	5.99
Weir Sta Lft (ft)		Vel Total (ft/s)	2.74	2.50
Weir Sta Rgt (ft)		Flow Area (sq ft)	276.45	303.62
Weir Submerg		Froude # Chl	0.30	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	527.09	611.34
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	2.30	2.57
Min El Prs (ft)	358.87	W.P. Total (ft)	124.38	123.31
Delta EG (ft)	0.23	Conv. Total (cfs)	13755.3	16876.9
Delta WS (ft)	0.06	Top Width (ft)	120.32	118.06
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.74	C & E Loss (ft)	0.05	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	0.42	0.31
BR Sel Method	Energy only	Power Total (lb/ft s)	1.16	0.77

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	353.46	Element		
W.S. US. (ft)	353.18	E.G. Elev (ft)	353.40	353.33
Q Total (cfs)	963.00	W.S. Elev (ft)	353.11	353.10
Q Bridge (cfs)	963.00	Crit W.S. (ft)	352.11	351.39
Q Weir (cfs)		Max Chl Dpth (ft)	7.38	6.49
Weir Sta Lft (ft)		Vel Total (ft/s)	2.85	2.66
Weir Sta Rgt (ft)		Flow Area (sq ft)	337.86	362.46
Weir Submerg		Froude # Chl	0.28	0.27
Weir Max Depth (ft)		Specif Force (cu ft)	708.10	803.00
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	2.81	3.07
Min El Prs (ft)	358.87	W.P. Total (ft)	125.41	124.31
Delta EG (ft)	0.22	Conv. Total (cfs)	17865.9	21193.3
Delta WS (ft)	0.07	Top Width (ft)	120.25	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.85	C & E Loss (ft)	0.04	0.05
BR Sluice Coef		Shear Total (lb/sq ft)	0.49	0.38
BR Sel Method	Energy only	Power Total (lb/ft s)	1.39	1.00

BRIDGE OUTPUT Profile #200-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	353.99	Element		
W.S. US. (ft)	353.71	E.G. Elev (ft)	353.93	353.86
Q Total (cfs)	1207.00	W.S. Elev (ft)	353.62	353.60
Q Bridge (cfs)	1207.00	Crit W.S. (ft)	352.41	351.82
Q Weir (cfs)		Max Chl Dpth (ft)	7.89	6.99
Weir Sta Lft (ft)		Vel Total (ft/s)	3.02	2.86
Weir Sta Rgt (ft)		Flow Area (sq ft)	399.04	421.61
Weir Submerg		Froude # Chl	0.28	0.27
Weir Max Depth (ft)		Specif Force (cu ft)	928.56	1033.42
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.32	3.57
Min El Prs (ft)	358.87	W.P. Total (ft)	126.43	125.31
Delta EG (ft)	0.23	Conv. Total (cfs)	22442.4	25994.0
Delta WS (ft)	0.09	Top Width (ft)	120.17	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.02	C & E Loss (ft)	0.03	0.06
BR Sluice Coef		Shear Total (lb/sq ft)	0.57	0.45
BR Sel Method	Energy only	Power Total (lb/ft s)	1.72	1.30

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1830

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12

```
  196.32  351.55  209.07  352.05  209.56  359.76  230.29  360.75  314.46  356.32
     319  356.67  323.81  357.07  332.17  357.73  334.02  357.88  335.57     358
  340.94  358.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   131.1     .04  149.09    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         131.1  149.09            183.1  189.46  194.94             .3       .5

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1641

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   358.1    4.25     358    4.42  357.95    4.44  357.94    5.13  357.91
    5.87  357.89   19.69  357.39    35.1  356.79   40.55  356.56   48.51  356.22
    50.1  356.16   53.65     356    83.2  353.06  108.43  350.69  126.88  349.28
  127.65  348.68   128.6  347.92   138.1  348.36  140.07  345.19  146.51  345.53
  151.14   349.6  158.59  349.89   158.6  349.89  162.23  350.02  178.14     350
  203.35  350.65   232.7     352  242.28  353.59  244.74     354  245.26  354.15
  247.65  354.81  250.51   355.6  252.04     356  253.98  356.59  258.69     358
  258.77  358.02  262.44  359.03     266     360   266.2  360.05  268.14  360.44
  269.28  360.66  271.48  361.07  272.68  361.28   273.3  361.39

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   138.1     .04  151.14    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         138.1  151.14            176.17  177.29  178.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1463

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  356.46    5.61  356.33   11.71  356.19   16.33  356.06   18.18  356.02
   18.32  356.02   18.54     356    21.8  355.67   22.14  355.65   22.36  355.64
   22.69   355.6   22.89  355.58   27.15  355.19   29.24  355.09   30.76  355.02
    40.4  354.87   40.86  354.85   41.76   354.8   42.75  354.73   52.82     354
   69.61  352.87   75.51  352.42   79.43  352.14   79.72  352.12   81.65     352
   84.43  351.86   90.72  351.56   92.09  351.48   94.79  351.34   97.19  351.19
  107.32  350.52   111.7  350.26  115.41     350  138.29   349.1  159.11   349.1
  178.46  349.47  180.13  349.17   185.3  348.24  187.99  347.08  189.19  343.45
  196.87  343.35  197.98  346.06  206.54  348.53  210.52  348.75  210.53  348.75
  221.24  349.34  234.53  349.78  266.44  352.56  278.62     358  283.38  359.43
  285.38     360     287  360.55  290.28  361.58  291.64     362  294.58  362.89
  295.91  363.28  296.57  363.47  298.25     364   302.9  365.77  303.51     366
  309.02  367.06  310.22  367.29  310.97  367.42  314.74     368  315.87  368.18
  323.73  369.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  180.13     .04  206.54    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        180.13  206.54            172.51  172.28  171.74             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1291

INPUT
Description:
Station Elevation Data    num=      54
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	363.49	2.9	363.09	10.68	362.14	11.86	362	19.26	360.55
22.08	360	26.38	358.97	30.59	358	34.4	357.21	38.91	356
43.26	354.82	46.23	354.17	47.03	354	49.14	353.62	58.14	352
66.85	350.97	70.1	350.58	71.43	350.42	75.07	350	108.53	348.38
120.68	348.74	128.48	348.81	133.87	347.09	136.5	346.81	137.71	345.2
141.95	344.89	151.53	345.15	155.49	348.28	157.84	348.3	161.16	349.47
178.09	349.55	199.34	350.93	214.63	351.7	228.4	351.81	242.53	351.32
264.66	350.52	286.44	349.15	310.41	348.72	338.21	349	371.72	348.77
400.9	348.48	416.8	348.59	427.74	348.67	430.58	344.68	431.8	344.26
436.65	344.85	441.26	344.51	442.29	347.58	447.46	349.08	448.01	349.24
458.85	350.67	471.3	352.75	481.29	354.33	491.23	357.26		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	427.74	.04	447.46	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
427.74	447.46	167.7	167.44	166.86	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1124

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	365.04	4.51	364.72	9.16	364.27	9.25	364.27	12.12	364
15.5	363.29	21.22	362	23.39	361.54	30.93	360	35.95	358.97
39.85	358.17	50.58	356	54.08	355.4	62.03	354	62.65	353.83
63.34	353.65	73.01	352.9	74.16	352.78	80.64	352	83.69	351.62
99.16	350	114.6	348.69	124.02	348.63	131.1	347.62	149.71	348.01
162.72	347.51	168.53	347.49	170.35	344.49	173.71	344.74	179.87	343.88
182.52	344.16	184.05	346.89	186.24	347	189.68	348.23	195.55	348.19
207	347.6	214.71	347.82	233.96	347.66	252.64	348.2	276.32	348.2
304.29	347.84	332.45	347.91	346.81	348.51	347.97	348.3	348	348.3
350.12	347.92	353.36	347.9	355.26	348.34	360.2	343.58	367.1	344.05
375.37	349.26	378.03	349.7	378.05	349.7	380.33	350.08	392.73	351.02
398.58	351.56	403.03	351.81	420.09	354	435.53	356	439.63	356.61
442.77	357.02	450.32	358	455.33	358.77	457.5	359.06	460.77	359.47
461.87	359.63	462.18	359.68	465.1	360	473.65	361.11	476.71	361.53
479.97	362	480.72	362.12	480.94	362.16	483.56	362.62		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	355.26	.04	375.37	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
355.26	375.37	134.05	129.91	125.5	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
8.7	60.7	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 994

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.1	9.62	358	14.71	356.95	19.8	356	30.42	354.45
33.38	354	36.49	353.7	54.6	352	57.99	351.76	59.66	351.64
70.88	350.84	72.94	350.7	82.85	350	114.72	348.11	135.81	347.8
150.43	347.49	170.48	346.43	171.74	343.41	176.87	342.99	186.86	344.33
188.91	347.54	212.62	347.3	226.74	347	231.31	347.32	247.53	347.69
256.13	347.8	270.71	347.72	281.14	348.11	284.5	347.5	286.04	347.21
292.04	347.03	296.33	343.73	302.06	343.28	306.33	342.85	309.85	346.99
314.78	348.42	315.81	348.64	315.83	348.64	320.17	349.59	333.26	350.57
351	352.36	364.37	354	373	355.3	375.39	355.67	377.77	356
383.23	356.87	390.35	358	393.92	358.56	397.2	359.05	403.45	360
407.85	360.84	413.86	362	417.04	362.66				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	281.14	.04	315.83	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
281.14	315.83	82.93	82.66	81.8	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 911

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	2.24	358.56	3.51	358.32	5.22	358	12.31	356.66
15.03	356.09	15.46	356	22.75	354.09	23.08	354	23.55	353.96
24.83	353.84	24.92	353.83	25.43	353.83	29.76	353.58	30	353.57
30.58	353.5	31.25	353.48	33.98	353.69	35.3	353.7	36.97	353.98
37.02	353.98	37.13	354	37.9	354.04	38.06	354.05	38.27	354.04
38.32	354.04	38.42	354.03	38.82	354	38.99	353.95	39.2	353.82
44.56	353.53	50.12	353.05	56.89	352.42	59.95	352.14	61.41	352
82.47	350.57	91.08	350	100.51	349.7	117.56	348.31	130.96	347.87
157.71	347.03	178.22	347.23	181.99	344.27	189.47	343.55	196.66	344.12
201.78	347.5	223.44	347.06	243.05	346.93	252.46	346.76	252.6	346.85
292.54	347.06	306.34	347.38	312.43	347.51	317.18	343.33	321.46	342.92
325.5	343.21	332.27	348.29	337.05	349	337.06	349	351.26	351.11
381.21	355.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	312.43	.04	332.27	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
312.43	332.27	138.48	148.66	157.22	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 762

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.13	2.35	357.03	6.48	356.67	7.69	356.61	9.39	356.51
14.41	356	19.83	355.44	21	355.32	22.74	355.12	32.28	354
34.37	353.8	35.36	353.71	51.57	352.14	52.81	352.02	53.01	352
61.67	351.41	65.26	351.17	67.97	350.99	73.71	350.62	76.99	350.42
81.35	350.17	81.78	350.14	84.01	350.03	84.52	350	108.7	348.46
145.52	346.99	169.46	347.05	186.24	347.42	197.19	345.22	199.28	343.68
205.18	343.3	208.29	343.86	210.89	346.07	228.95	347.18	235.77	347.3
240.55	347.28	244.65	347.26	244.66	347.26	252.8	347.23	257.6	343.09
259.66	342.54	263.98	342.94	271.9	344.77	276.21	346.65	276.24	346.66
276.97	346.98	298.22	347.67	328.56	347.99	360.33	351.01	370.76	351.97
371.89	352	373.6	352.14	375.07	352.27	376.35	352.4	384.34	353.82
384.65	353.87	384.83	353.9	384.94	353.92	385.3	354	392	355.62
393.35	356	395.32	356.4	403.54	358	408.28	358.51	410.83	358.82
411.55	358.82	412.84	358.8	416.14	358.49				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	252.8	.04	276.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
252.8	276.97	101.69	104.14	104.96	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
366.8	407.4	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 658

INPUT

Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.95	2.26	358.79	5.3	358.55	9.28	358.2	11.48	358
14.26	357.65	16.66	357.36	20.41	356.87	26.22	356.16	35.44	355.02
41.74	354.15	42.79	354	59.31	352.1	59.6	352.07	59.76	352.05
60.3	352	70.49	351.39	76.4	351.02	86.06	350.44	92.55	350
118.81	348	200.75	346.51	222.09	346.42	240.58	346.42	240.59	346.42
245.1	346.43	248.95	343.16	255.63	340.34	262.8	340.2	267.31	342.59
270.68	343.91	277.89	346.74	301.79	346.57	332.03	346.36	388.47	347.88
391.63	347.92	394.29	347.92	394.49	347.91	400.05	348	401.61	348.21
402.93	348.4	404.42	348.65	405.7	348.87	406.58	349.04	407.19	349.17
412.03	350	415.92	350.98	417.72	351.13	418.47	351.21	420.03	351.39
422.64	351.75	422.86	351.79	424.26	352	426.31	352.71	429.22	353.83
429.43	353.91	429.85	354.09	434.45	356	442.51	357.75	442.83	357.83
443.54	358	450.24	358.39	464.98	359.29	465.18	359.32	466.53	359.48
470.64	360	471.72	360.06	477.88	360.4	481.52	360.61	490.37	361.08

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	245.1	.04	277.89	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.1	277.89	129.48	132.55	137.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 526

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.29	9.33	356.07	9.88	356	15.36	355.41	18.93	355.03
21	354.81	28.17	354	30.46	353.79	34.1	353.48	42.62	352.81
46.05	352.53	47.8	352.4	49.22	352.29	53.02	352	59.04	351.42
61.87	351.16	67.63	350.62	73.95	350	93.12	348.67	121.73	346.39
157.75	346.18	186.76	345.79	188.34	345.18	188.36	345.17	195.28	342.48
203.56	341.63	212.23	342.05	213.87	346.6	218.56	346.44	218.57	346.44
237.47	345.8	275.28	345.64	307.64	346.39	309.73	346.39	311.5	346.41
313.11	346.41	314.75	346.4	329.39	346.38	337.83	346.31	340.98	346.28
350.53	346.19	372.03	346	378.64	346.57	382.54	346.9	390.22	347.56
395.28	348	402.02	349.12	407.12	350	408.46	350.19	409.19	350.29
409.96	350.41	415.16	351.21	417.91	351.63	420.21	352	425.22	352.92
430.26	354	432.81	354.65	434.33	355	437.88	355.74	438.42	355.87
439.17	356	441.01	356.24	446.9	356.96	448.95	357.26	452.86	357.84
453.18	357.89	453.89	358	458.07	358.55	459.62	358.79	462.41	359.19
467.23	360	483.54	360.76						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.76	.04	213.87	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.76	213.87	143.66	145.78	147.57	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
443	476.3	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 380

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.67	.48	366.64	10.41	366	17.37	364.74	21.25	364
25.91	363.14	31.6	362	37.28	360.91	41.95	360	46.91	359.56
63.27	358	71.54	357.11	76.74	356.56	81.96	356	84.51	355.63
95.36	354	101.45	352.61	104.07	352	106.08	351.38	110.9	350
116.69	348.33	117.74	348	119.59	347.7	121.4	347.41	126.04	346.65
130	346	133.26	346.1	135.45	346.16	138.15	346.24	146.78	346.47
149.42	346.45	150.34	346.44	151.1	346.43	151.57	346.42	155.44	346.29
164.04	345.66	193.28	345.53	212.79	346.39	212.81	346.39	215.37	346.51

219.06	341.92	227.8	342.05	238.17	343.21	243.49	346.6	243.7	346.6
243.72	346.59	260.79	346.48	291.92	346.27	304.59	346	319.84	347.43
322.97	347.65	328.49	348	330.64	348.16	332.41	348.38	334.7	348.61
337.77	348.94	346.14	350	350.1	350.95	354.1	352	360.75	353.66
362.11	354	365.83	354.84	369.98	355.77	370.39	355.85	371.06	356
372.08	356.17	382.09	358	386.28	358.59	390.61	359.14		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.37	.04	243.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.37	243.7	235.8	234.15	232.25	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10	44.6	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 146

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	6.37	358.83	15.88	358.07	16.47	358.02	16.84	358
21.14	357.01	25.77	356	28.06	355.5	30.16	355.06	34.73	354.18
35.2	354.08	35.66	354	37.68	353.72	38.1	353.66	41.6	353.18
44.05	352.85	45.88	352.61	50.58	352.01	50.71	352	52.8	351.88
60.34	351.5	61.05	351.44	66.3	351.17	67.3	351.09	70.18	350.94
72.76	350.72	76.24	350.54	81.27	350	100.43	348.85	105.06	348.54
115.51	348	138.29	346.9	181.73	345.23	210.07	344.41	210.09	344.41
215.13	344.26	220.35	341.19	225.41	340.73	231.22	340.96	236.01	344.28
240.33	344.79	253.16	346.33	258.95	349.49	260.11	349.59	263.96	350.56
267.35	352	269.7	353.13	271.51	354	273.55	355.07	275.21	356
277.09	356.89	279.29	358	283.62	359.32	285.5	359.78	286.47	360
291.06	360.4	294.96	360.73	299.25	361.08	301.38	361.31	304.13	361.54
306.53	361.84	306.74	361.86	307.86	362	314.98	363.37	318.1	364
325.64	365.64	327.27	366	335.18	367.64	336.93	368	339.58	368.18
343.85	368.49	346.34	368.31						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	215.13	.04	236.01	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
215.13	236.01	88.09	82.88	77.62	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
15.2	56.5	365	296.2	338	370

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 63

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	354	7.34	353.26	12.41	352.73	16.79	352.29	19.4	352
27.1	350.79	31.84	350	38.59	349.24	50.74	348	57.78	347.37
58.67	347.29	60.21	347.18	62.82	346.94	66.66	346.68	68.29	346.54
76.91	346	79.38	345.88	79.63	345.86	80	345.83	80.68	345.78
83.85	345.58	87.55	345.35	103.02	344	108.36	342.62	114.01	342
118.01	340	138.02	340	142.02	342	147.2	343.25	150.03	344
151.66	344.32	153.16	344.61	153.93	344.74	155.1	344.92	156.66	345.2
158.34	345.42	159.11	345.56	160.97	345.74	161.25	345.79	163.2	345.94
163.62	346	170.72	346	174.59	346.47	175.77	346.56	176.48	346.66
177.66	346.84	178.56	346.94	180.57	347.23	181.89	347.4	182.5	347.49
185.96	348	187.92	348.58	193.03	350	195.4	350.82	198.31	352
201.23	353.21	203.77	354	207.9	355.67	208.87	356	212.01	357.21
214.25	358	216.21	358.46	223.24	360	225.85	360.29	227.5	360.52
231.62	361.04	238.04	362	248.29	363.79	249.46	364	253.46	364.5
253.68	364.53								

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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  103.02     .04  150.03    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        103.02  150.03                0       0       0             .1       .3
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SUMMARY OF MANNING'S N VALUES

River:Plumtree

Reach	River Sta.	n1	n2	n3	n4	n5
Plumtree	10286	.085	.055	.04	.055	.085
Plumtree	10044	.085	.055	.04	.055	.085
Plumtree	9814	.085	.055	.04	.055	.085
Plumtree	9762	.085	.055	.04	.055	.085
Plumtree	9732	.055	.04	.055		
Plumtree	9650	Culvert				
Plumtree	9589	.075	.04	.075		
Plumtree	9499	.075	.04	.075		
Plumtree	9398	.085	.055	.04	.055	.085
Plumtree	9301	.085	.055	.04	.055	.085
Plumtree	9196	.085	.055	.04	.055	.085
Plumtree	8987	.085	.055	.04	.055	.085
Plumtree	8753	.065	.04	.065	.085	
Plumtree	8579	.075	.055	.04	.055	.085
Plumtree	8374	.075	.055	.04	.055	.085
Plumtree	8229	.075	.055	.04	.055	.085
Plumtree	8094	.075	.055	.04	.055	.085
Plumtree	8000	Inl Struct				
Plumtree	7954	.075	.055	.04	.055	.085
Plumtree	7800	.075	.055	.04	.055	.085
Plumtree	7548	.075	.055	.04	.055	.085
Plumtree	7367	.075	.055	.04	.055	.075
Plumtree	7216	.075	.055	.04	.055	.075
Plumtree	7100	Inl Struct				
Plumtree	7030	.075	.055	.04	.055	.075
Plumtree	6893	.075	.055	.04	.055	.075
Plumtree	6766	.075	.055	.04	.055	.075
Plumtree	6663	.075	.055	.04	.055	.075
Plumtree	6600	Inl Struct				
Plumtree	6568	.075	.04	.075		
Plumtree	6454	.075	.04	.075		
Plumtree	6375	Lat Struct				
Plumtree	6350	.075	.04	.075		
Plumtree	6296	.075	.04	.075		
Plumtree	6250	Bridge				
Plumtree	6197	.075	.04	.075		
Plumtree	6122	.075	.04	.075		
Plumtree	6028	.075	.04	.075		
Plumtree	5926	.075	.04	.075		
Plumtree	5824	.075	.04	.075		
Plumtree	5745	.075	.04	.075		
Plumtree	5711	.075	.04	.075		
Plumtree	5650	Bridge				
Plumtree	5614	.075	.04	.075		
Plumtree	5560	.075	.04	.075		
Plumtree	5510	.075	.04	.075		
Plumtree	5500	Bridge				
Plumtree	5474	.075	.04	.075		
Plumtree	5419	.075	.04	.075		
Plumtree	5323	.075	.04	.075		
Plumtree	5209	.075	.04	.075		
Plumtree	5107	.075	.04	.075		
Plumtree	5040	.075	.04	.075		
Plumtree	5000	Bridge				
Plumtree	4932	.075	.04	.075		
Plumtree	4845	.075	.04	.075		
Plumtree	4745	.075	.04	.075		
Plumtree	4636	.075	.04	.075		
Plumtree	4550	.075	.04	.075		
Plumtree	4400	Bridge				
Plumtree	4344	.075	.04	.075		
Plumtree	4289	.075	.04	.075		
Plumtree	4185	.075	.04	.075		
Plumtree	4033	.075	.04	.075		

Plumtree	3930	.075	.04	.075
Plumtree	3816	.075	.04	.075
Plumtree	3688	.075	.04	.075
Plumtree	3550	.075	.04	.075
Plumtree	3428	.075	.04	.075
Plumtree	3296	.075	.04	.075
Plumtree	3179	.075	.04	.075
Plumtree	3077	.075	.04	.075
Plumtree	2978	.075	.04	.075
Plumtree	2917	.075	.04	.075
Plumtree	2900	Bridge		
Plumtree	2827	.075	.04	.075
Plumtree	2759	.075	.04	.075
Plumtree	2589	.075	.04	.075
Plumtree	2485	.075	.04	.075
Plumtree	2331	.075	.04	.075
Plumtree	2153	.075	.04	.075
Plumtree	1994	.075	.04	.075
Plumtree	1888	.075	.04	.075
Plumtree	1850	Bridge		
Plumtree	1830	.075	.04	.075
Plumtree	1641	.075	.04	.075
Plumtree	1463	.075	.04	.075
Plumtree	1291	.075	.04	.075
Plumtree	1124	.075	.04	.075
Plumtree	994	.075	.04	.075
Plumtree	911	.075	.04	.075
Plumtree	762	.075	.04	.075
Plumtree	658	.075	.04	.075
Plumtree	526	.075	.04	.075
Plumtree	380	.075	.04	.075
Plumtree	146	.075	.04	.075
Plumtree	63	.075	.04	.075

SUMMARY OF REACH LENGTHS

River: Plumtree

Reach	River Sta.	Left	Channel	Right
Plumtree	10286	240.46	241.25	237.2
Plumtree	10044	233.9	230.57	222.97
Plumtree	9814	52.2	51.56	50.88
Plumtree	9762	32.64	30.09	27.57
Plumtree	9732	145.71	143.47	141.55
Plumtree	9650	Culvert		
Plumtree	9589	74.95	89.37	103.36
Plumtree	9499	98.65	101.8	104.92
Plumtree	9398	97.49	96.47	93.03
Plumtree	9301	115.5	105	84.84
Plumtree	9196	142.73	208.89	146.19
Plumtree	8987	177.07	233.77	177.4
Plumtree	8753	179.62	174.76	144.99
Plumtree	8579	157.46	204.23	180.47
Plumtree	8374	136.5	145.45	139.79
Plumtree	8229	133.08	135.16	130.38
Plumtree	8094	130.77	139.81	134.21
Plumtree	8000	Inl Struct		
Plumtree	7954	154.67	153.64	151.55
Plumtree	7800	245.72	252.82	248.16
Plumtree	7548	166.35	180.41	207.73
Plumtree	7367	131.12	150.84	173.6
Plumtree	7216	182.85	186.42	163.53
Plumtree	7100	Inl Struct		
Plumtree	7030	146.71	137.19	128.81
Plumtree	6893	120.01	126.53	128.56
Plumtree	6766	99.27	103.53	103.11
Plumtree	6663	90.58	94.53	97.72
Plumtree	6600	Inl Struct		
Plumtree	6568	112.95	114.27	115.74
Plumtree	6454	102.69	103.78	104.74
Plumtree	6375	Lat Struct		
Plumtree	6350	52.33	53.78	55.24
Plumtree	6296	98.47	99.02	99.58
Plumtree	6250	Bridge		
Plumtree	6197	75.78	74.81	73.83

Plumtree	6122	98.18	94.21	91.92
Plumtree	6028	100.93	101.91	101.19
Plumtree	5926	102.11	102.54	102.93
Plumtree	5824	75.62	79.21	82.75
Plumtree	5745	34.07	34.02	34.04
Plumtree	5711	96.24	96.18	98.71
Plumtree	5650	Bridge		
Plumtree	5614	60.47	54.67	45.26
Plumtree	5560	56.62	49.74	41.3
Plumtree	5510	36.56	36.42	38.18
Plumtree	5500	Bridge		
Plumtree	5474	54.4	54.86	54.94
Plumtree	5419	93.04	95.36	97.65
Plumtree	5323	116.69	114.31	111.9
Plumtree	5209	111.42	101.59	91.47
Plumtree	5107	67.29	67.07	66.86
Plumtree	5040	104.82	108.2	107.53
Plumtree	5000	Bridge		
Plumtree	4932	86.54	87.15	87.5
Plumtree	4845	89.54	100.49	110.66
Plumtree	4745	111.08	108.67	106.25
Plumtree	4636	90.09	85.72	81.01
Plumtree	4550	205.67	206.54	206.28
Plumtree	4400	Bridge		
Plumtree	4344	54.24	54.2	54.21
Plumtree	4289	104.83	104.42	103.52
Plumtree	4185	151.73	151.97	152.24
Plumtree	4033	105.3	103.27	101.24
Plumtree	3930	112.01	113.72	114.59
Plumtree	3816	128.5	127.87	127.21
Plumtree	3688	137.67	137.99	138.3
Plumtree	3550	121.58	121.96	122.09
Plumtree	3428	131.85	132.32	132.95
Plumtree	3296	117.57	116.94	115.99
Plumtree	3179	101.1	102.24	103.14
Plumtree	3077	99.64	98.98	98.39
Plumtree	2978	61.85	60.74	60.21
Plumtree	2917	89.63	90.26	89.98
Plumtree	2900	Bridge		
Plumtree	2827	59.3	67.61	75.81
Plumtree	2759	166.79	169.71	170.1
Plumtree	2589	102.11	104.17	106.57
Plumtree	2485	153.6	154.59	153.42
Plumtree	2331	179.37	177.6	175.87
Plumtree	2153	160.15	158.75	157.04
Plumtree	1994	108.1	106.05	103.75
Plumtree	1888	61.13	58.24	54.2
Plumtree	1850	Bridge		
Plumtree	1830	183.1	189.46	194.94
Plumtree	1641	176.17	177.29	178.52
Plumtree	1463	172.51	172.28	171.74
Plumtree	1291	167.7	167.44	166.86
Plumtree	1124	134.05	129.91	125.5
Plumtree	994	82.93	82.66	81.8
Plumtree	911	138.48	148.66	157.22
Plumtree	762	101.69	104.14	104.96
Plumtree	658	129.48	132.55	137.52
Plumtree	526	143.66	145.78	147.57
Plumtree	380	235.8	234.15	232.25
Plumtree	146	88.09	82.88	77.62
Plumtree	63	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Plumtree

Reach	River Sta.	Contr.	Expan.
Plumtree	10286	.1	.3
Plumtree	10044	.1	.3
Plumtree	9814	.1	.3
Plumtree	9762	.1	.3
Plumtree	9732	.3	.5
Plumtree	9650	Culvert	
Plumtree	9589	.3	.5
Plumtree	9499	.1	.3

Plumtree	9398	.1	.3
Plumtree	9301	.1	.3
Plumtree	9196	.1	.3
Plumtree	8987	.1	.3
Plumtree	8753	.1	.3
Plumtree	8579	.1	.3
Plumtree	8374	.1	.3
Plumtree	8229	.1	.3
Plumtree	8094	.3	.5
Plumtree	8000	Inl Struct	
Plumtree	7954	.3	.5
Plumtree	7800	.1	.3
Plumtree	7548	.1	.3
Plumtree	7367	.1	.3
Plumtree	7216	.3	.5
Plumtree	7100	Inl Struct	
Plumtree	7030	.3	.5
Plumtree	6893	.1	.3
Plumtree	6766	.1	.3
Plumtree	6663	.3	.5
Plumtree	6600	Inl Struct	
Plumtree	6568	.3	.5
Plumtree	6454	.1	.3
Plumtree	6375	Lat Struct	
Plumtree	6350	.1	.3
Plumtree	6296	.3	.5
Plumtree	6250	Bridge	
Plumtree	6197	.3	.5
Plumtree	6122	.1	.3
Plumtree	6028	.1	.3
Plumtree	5926	.1	.3
Plumtree	5824	.1	.3
Plumtree	5745	.1	.3
Plumtree	5711	.3	.5
Plumtree	5650	Bridge	
Plumtree	5614	.3	.5
Plumtree	5560	.1	.3
Plumtree	5510	.3	.5
Plumtree	5500	Bridge	
Plumtree	5474	.3	.5
Plumtree	5419	.1	.3
Plumtree	5323	.1	.3
Plumtree	5209	.1	.3
Plumtree	5107	.1	.3
Plumtree	5040	.3	.5
Plumtree	5000	Bridge	
Plumtree	4932	.3	.5
Plumtree	4845	.1	.3
Plumtree	4745	.1	.3
Plumtree	4636	.1	.3
Plumtree	4550	.3	.5
Plumtree	4400	Bridge	
Plumtree	4344	.3	.5
Plumtree	4289	.1	.3
Plumtree	4185	.1	.3
Plumtree	4033	.1	.3
Plumtree	3930	.1	.3
Plumtree	3816	.1	.3
Plumtree	3688	.1	.3
Plumtree	3550	.1	.3
Plumtree	3428	.1	.3
Plumtree	3296	.1	.3
Plumtree	3179	.1	.3
Plumtree	3077	.1	.3
Plumtree	2978	.1	.3
Plumtree	2917	.3	.5
Plumtree	2900	Bridge	
Plumtree	2827	.3	.5
Plumtree	2759	.1	.3
Plumtree	2589	.1	.3
Plumtree	2485	.1	.3
Plumtree	2331	.1	.3
Plumtree	2153	.1	.3
Plumtree	1994	.1	.3
Plumtree	1888	.3	.5
Plumtree	1850	Bridge	
Plumtree	1830	.3	.5
Plumtree	1641	.1	.3
Plumtree	1463	.1	.3

Plumtree	1291	.1	.3
Plumtree	1124	.1	.3
Plumtree	994	.1	.3
Plumtree	911	.1	.3
Plumtree	762	.1	.3
Plumtree	658	.1	.3
Plumtree	526	.1	.3
Plumtree	380	.1	.3
Plumtree	146	.1	.3
Plumtree	63	.1	.3

HEC-RAS Plan: H River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	10286	1-YR	223.00	388.00	391.05	388.51	391.06	0.000075	0.64	349.54	123.72	0.07
Plumtree	10286	2-YR	307.00	388.00	391.79	388.64	391.79	0.000068	0.70	441.67	128.16	0.07
Plumtree	10286	10-YR	596.00	388.00	393.97	388.99	393.98	0.000050	0.82	735.62	141.38	0.06
Plumtree	10286	50-YR	995.00	388.00	395.22	389.38	395.24	0.000070	1.11	917.40	149.21	0.07
Plumtree	10286	100-YR	1200.00	388.00	395.47	389.56	395.50	0.000090	1.29	955.41	151.00	0.09
Plumtree	10286	200-YR	1441.00	388.00	395.72	389.77	395.75	0.000115	1.50	992.94	152.74	0.10
Plumtree	10044	1-YR	223.00	388.00	391.05		391.05	0.000023	0.36	613.14	210.47	0.04
Plumtree	10044	2-YR	307.00	388.00	391.78		391.78	0.000021	0.40	769.01	214.92	0.04
Plumtree	10044	10-YR	596.00	388.00	393.96		393.97	0.000016	0.48	1252.98	228.19	0.04
Plumtree	10044	50-YR	995.00	388.00	395.22		395.22	0.000023	0.65	1543.68	235.81	0.04
Plumtree	10044	100-YR	1200.00	388.00	395.47		395.48	0.000030	0.76	1603.69	237.36	0.05
Plumtree	10044	200-YR	1441.00	388.00	395.72		395.73	0.000039	0.88	1662.67	238.86	0.06
Plumtree	9814	1-YR	223.00	388.00	391.04	388.26	391.05	0.000011	0.25	886.93	300.67	0.03
Plumtree	9814	2-YR	307.00	388.00	391.78	388.32	391.78	0.000010	0.28	1109.05	305.17	0.03
Plumtree	9814	10-YR	596.00	388.00	393.96	388.52	393.97	0.000008	0.33	1790.67	318.58	0.02
Plumtree	9814	50-YR	995.00	388.00	395.22	388.72	395.22	0.000011	0.46	2194.75	327.09	0.03
Plumtree	9814	100-YR	1200.00	388.00	395.47	388.83	395.47	0.000015	0.53	2277.97	329.62	0.03
Plumtree	9814	200-YR	1441.00	388.00	395.72	388.93	395.72	0.000019	0.62	2371.97	371.56	0.04
Plumtree	9762	1-YR	223.00	388.00	391.04		391.04	0.000012	0.27	839.34	285.36	0.03
Plumtree	9762	2-YR	307.00	388.00	391.78		391.78	0.000011	0.29	1050.29	289.98	0.03
Plumtree	9762	10-YR	596.00	388.00	393.96		393.96	0.000009	0.35	1699.15	303.77	0.03
Plumtree	9762	50-YR	995.00	388.00	395.22		395.22	0.000013	0.48	2085.24	317.46	0.03
Plumtree	9762	100-YR	1200.00	388.00	395.47		395.47	0.000016	0.56	2166.63	325.86	0.04
Plumtree	9762	200-YR	1441.00	388.00	395.72		395.72	0.000021	0.65	2248.18	334.23	0.04
Plumtree	9732	1-YR	223.00	387.00	391.01	388.57	391.04	0.000297	1.42	168.99	214.23	0.14
Plumtree	9732	2-YR	307.00	387.00	391.74	388.78	391.77	0.000290	1.60	206.26	233.27	0.14
Plumtree	9732	10-YR	596.00	387.00	393.90	389.35	393.96	0.000260	2.01	317.44	282.03	0.14
Plumtree	9732	50-YR	995.00	387.00	395.21	390.03	395.22	0.000042	0.92	1645.51	291.63	0.06
Plumtree	9732	100-YR	1200.00	387.00	395.46	390.33	395.47	0.000054	1.06	1719.15	293.18	0.07
Plumtree	9732	200-YR	1441.00	387.00	395.71	390.68	395.72	0.000068	1.22	1791.30	294.69	0.08
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	223.00	386.27	388.63	388.43	389.12	0.015238	5.64	39.56	28.37	0.84
Plumtree	9589	2-YR	307.00	386.27	388.99	388.79	389.57	0.014556	6.09	50.56	32.27	0.84
Plumtree	9589	10-YR	596.00	386.27	389.73	389.64	390.73	0.015258	8.03	76.57	40.41	0.92
Plumtree	9589	50-YR	995.00	386.27	390.54	390.54	392.03	0.015676	9.88	105.34	50.74	0.98
Plumtree	9589	100-YR	1200.00	386.27	391.01	391.01	392.52	0.013570	10.09	140.28	62.32	0.93
Plumtree	9589	200-YR	1441.00	386.27	391.55	391.55	393.08	0.011704	10.28	178.22	78.38	0.89
Plumtree	9499	1-YR	87.00	385.35	387.90		388.05	0.004566	3.07	30.30	27.21	0.46
Plumtree	9499	2-YR	134.00	385.35	388.27		388.46	0.005397	3.62	41.39	33.79	0.51
Plumtree	9499	10-YR	293.00	385.35	388.98		389.34	0.007925	5.02	71.13	51.22	0.63
Plumtree	9499	50-YR	529.00	385.35	389.47	389.21	390.13	0.012403	6.92	100.60	71.52	0.81
Plumtree	9499	100-YR	662.00	385.35	389.01	389.68	390.77	0.038530	11.13	72.77	52.08	1.40
Plumtree	9499	200-YR	802.00	385.35	389.14	390.07	391.33	0.046182	12.46	79.96	55.70	1.54
Plumtree	9398	1-YR	87.00	385.43	386.75	386.75	387.10	0.027234	4.70	18.50	27.31	1.01
Plumtree	9398	2-YR	134.00	385.43	387.03	387.03	387.40	0.026462	4.87	27.49	37.69	1.01
Plumtree	9398	10-YR	293.00	385.43	387.59	387.59	387.97	0.027162	4.96	59.08	80.80	1.02
Plumtree	9398	50-YR	529.00	385.43	387.99	387.99	388.48	0.020603	5.63	98.28	116.79	0.95
Plumtree	9398	100-YR	662.00	385.43	388.17	388.17	388.70	0.018812	5.95	119.45	121.19	0.93
Plumtree	9398	200-YR	802.00	385.43	388.32	388.32	388.92	0.018069	6.31	138.78	124.41	0.93
Plumtree	9301	1-YR	87.00	381.53	382.38	382.53	382.93	0.076904	5.96	14.60	33.01	1.58
Plumtree	9301	2-YR	134.00	381.53	382.51	382.73	383.28	0.077664	7.03	19.06	33.81	1.65
Plumtree	9301	10-YR	293.00	381.53	382.92	383.26	384.12	0.063789	8.80	33.29	36.25	1.62
Plumtree	9301	50-YR	529.00	381.53	383.33	383.88	385.17	0.060651	10.88	48.84	38.76	1.67
Plumtree	9301	100-YR	662.00	381.53	383.55	384.17	385.64	0.055860	11.60	57.69	40.13	1.65
Plumtree	9301	200-YR	802.00	381.53	383.80	384.47	386.05	0.049332	12.05	67.87	41.65	1.59
Plumtree	9196	1-YR	87.00	379.98	380.49	380.49	380.72	0.030634	3.91	22.23	47.45	1.01
Plumtree	9196	2-YR	134.00	379.98	380.65	380.65	380.96	0.027803	4.48	29.94	48.56	1.00
Plumtree	9196	10-YR	293.00	379.98	381.07	381.07	381.58	0.023825	5.70	51.39	51.52	1.01
Plumtree	9196	50-YR	529.00	379.98	381.56	381.56	382.30	0.020698	6.87	77.39	54.90	1.00
Plumtree	9196	100-YR	662.00	379.98	381.80	381.80	382.64	0.019427	7.36	90.84	56.57	0.99
Plumtree	9196	200-YR	802.00	379.98	382.04	382.04	382.98	0.018454	7.82	104.31	58.19	0.99
Plumtree	8987	1-YR	87.00	369.00	371.77	369.79	371.78	0.000321	1.09	79.83	37.18	0.13
Plumtree	8987	2-YR	134.00	369.00	372.51	370.04	372.53	0.000313	1.23	109.20	41.66	0.13
Plumtree	8987	10-YR	293.00	369.00	374.54	370.69	374.58	0.000255	1.42	206.36	53.89	0.13
Plumtree	8987	50-YR	529.00	369.00	376.96	371.41	377.00	0.000160	1.54	354.33	68.44	0.11
Plumtree	8987	100-YR	662.00	369.00	378.16	371.75	378.20	0.000135	1.59	440.45	75.63	0.10
Plumtree	8987	200-YR	802.00	369.00	379.33	372.08	379.37	0.000117	1.64	533.55	82.71	0.10

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	8753	1-YR	87.00	369.00	371.76		371.76	0.000030	0.37	232.52	92.81	0.04
Plumtree	8753	2-YR	134.00	369.00	372.51		372.51	0.000031	0.44	303.62	97.43	0.04
Plumtree	8753	10-YR	293.00	369.00	374.55		374.55	0.000031	0.57	515.14	110.06	0.05
Plumtree	8753	50-YR	529.00	369.00	376.97		376.98	0.000025	0.67	800.27	125.07	0.04
Plumtree	8753	100-YR	662.00	369.00	378.17		378.18	0.000023	0.71	954.49	132.48	0.04
Plumtree	8753	200-YR	802.00	369.00	379.35		379.36	0.000021	0.75	1114.79	139.79	0.04
Plumtree	8579	1-YR	87.00	369.00	371.75		371.76	0.000036	0.41	214.43	86.18	0.05
Plumtree	8579	2-YR	134.00	369.00	372.50		372.50	0.000037	0.48	280.50	90.69	0.05
Plumtree	8579	10-YR	293.00	369.00	374.54		374.55	0.000036	0.61	477.93	102.99	0.05
Plumtree	8579	50-YR	529.00	369.00	376.97		376.97	0.000029	0.72	745.57	117.64	0.05
Plumtree	8579	100-YR	662.00	369.00	378.16		378.17	0.000027	0.76	890.81	124.86	0.05
Plumtree	8579	200-YR	802.00	369.00	379.34		379.35	0.000024	0.80	1042.06	131.97	0.05
Plumtree	8374	1-YR	87.00	369.00	371.74		371.75	0.000068	0.54	160.16	66.68	0.06
Plumtree	8374	2-YR	134.00	369.00	372.49		372.49	0.000069	0.63	211.58	71.18	0.06
Plumtree	8374	10-YR	293.00	369.00	374.53		374.54	0.000065	0.79	369.17	83.48	0.07
Plumtree	8374	50-YR	529.00	369.00	376.95		376.97	0.000050	0.91	589.75	98.40	0.06
Plumtree	8374	100-YR	662.00	369.00	378.15		378.17	0.000044	0.95	712.12	105.79	0.06
Plumtree	8374	200-YR	802.00	369.00	379.33		379.34	0.000040	0.99	840.99	112.98	0.06
Plumtree	8229	1-YR	87.00	369.00	371.74		371.74	0.000031	0.38	229.84	92.21	0.04
Plumtree	8229	2-YR	134.00	369.00	372.48		372.49	0.000032	0.45	300.35	96.72	0.04
Plumtree	8229	10-YR	293.00	369.00	374.52		374.53	0.000031	0.57	510.12	109.01	0.05
Plumtree	8229	50-YR	529.00	369.00	376.95		376.96	0.000025	0.67	792.66	123.63	0.05
Plumtree	8229	100-YR	662.00	369.00	378.15		378.16	0.000023	0.72	945.22	130.85	0.04
Plumtree	8229	200-YR	802.00	369.00	379.33		379.34	0.000021	0.75	1103.63	137.93	0.04
Plumtree	8094	1-YR	87.00	369.00	371.73	369.29	371.74	0.000020	0.31	283.75	111.98	0.03
Plumtree	8094	2-YR	134.00	369.00	372.48	369.39	372.48	0.000021	0.36	369.02	116.48	0.04
Plumtree	8094	10-YR	293.00	369.00	374.52	369.66	374.52	0.000020	0.47	619.12	128.74	0.04
Plumtree	8094	50-YR	529.00	369.00	376.95	369.97	376.96	0.000017	0.56	949.67	143.32	0.04
Plumtree	8094	100-YR	662.00	369.00	378.15	370.13	378.16	0.000016	0.60	1125.92	150.54	0.04
Plumtree	8094	200-YR	802.00	369.00	379.33	370.28	379.34	0.000015	0.63	1307.58	157.61	0.04
Plumtree	8000 Weir 1		Inl Struct									
Plumtree	7954	1-YR	69.00	368.00	370.22		370.22	0.000019	0.26	261.70	124.86	0.03
Plumtree	7954	2-YR	110.00	368.00	370.85		370.85	0.000021	0.32	342.10	128.73	0.03
Plumtree	7954	10-YR	260.00	368.00	372.71		372.71	0.000020	0.44	592.02	140.03	0.04
Plumtree	7954	50-YR	514.00	368.00	374.04		374.05	0.000032	0.66	783.56	148.06	0.05
Plumtree	7954	100-YR	649.00	368.00	374.57		374.57	0.000038	0.77	862.29	151.25	0.05
Plumtree	7954	200-YR	788.00	368.00	375.09		375.10	0.000042	0.86	942.39	154.42	0.06
Plumtree	7800	1-YR	69.00	368.00	370.21		370.21	0.000015	0.23	297.12	140.86	0.03
Plumtree	7800	2-YR	110.00	368.00	370.85		370.85	0.000016	0.28	387.63	144.67	0.03
Plumtree	7800	10-YR	260.00	368.00	372.71		372.71	0.000016	0.39	667.11	155.86	0.03
Plumtree	7800	50-YR	514.00	368.00	374.04		374.04	0.000025	0.59	879.47	163.84	0.04
Plumtree	7800	100-YR	649.00	368.00	374.56		374.57	0.000030	0.68	966.38	166.99	0.05
Plumtree	7800	200-YR	788.00	368.00	375.09		375.09	0.000033	0.76	1054.67	170.16	0.05
Plumtree	7548	1-YR	69.00	368.00	370.21		370.21	0.000007	0.16	424.40	199.04	0.02
Plumtree	7548	2-YR	110.00	368.00	370.85		370.85	0.000008	0.20	551.87	203.15	0.02
Plumtree	7548	10-YR	260.00	368.00	372.71		372.71	0.000008	0.28	941.00	215.20	0.02
Plumtree	7548	50-YR	514.00	368.00	374.03		374.04	0.000012	0.42	1232.45	223.78	0.03
Plumtree	7548	100-YR	649.00	368.00	374.56		374.56	0.000015	0.49	1350.89	227.17	0.03
Plumtree	7548	200-YR	788.00	368.00	375.08		375.09	0.000017	0.54	1470.75	230.56	0.04
Plumtree	7367	1-YR	69.00	368.00	370.21		370.21	0.000004	0.12	552.84	257.19	0.02
Plumtree	7367	2-YR	110.00	368.00	370.84		370.85	0.000004	0.15	717.16	261.28	0.02
Plumtree	7367	10-YR	260.00	368.00	372.71		372.71	0.000004	0.21	1214.41	273.27	0.02
Plumtree	7367	50-YR	514.00	368.00	374.03		374.03	0.000007	0.33	1582.87	281.81	0.02
Plumtree	7367	100-YR	649.00	368.00	374.56		374.56	0.000009	0.38	1731.75	285.20	0.03
Plumtree	7367	200-YR	788.00	368.00	375.08		375.08	0.000010	0.42	1882.00	288.58	0.03
Plumtree	7216	1-YR	69.00	368.00	370.21	368.20	370.21	0.000011	0.19	362.20	189.21	0.02
Plumtree	7216	2-YR	110.00	368.00	370.84	368.26	370.84	0.000011	0.23	484.86	195.91	0.03
Plumtree	7216	10-YR	260.00	368.00	372.70	368.47	372.70	0.000010	0.30	860.14	207.59	0.03
Plumtree	7216	50-YR	514.00	368.00	374.03	368.74	374.03	0.000015	0.45	1140.95	215.91	0.03
Plumtree	7216	100-YR	649.00	368.00	374.55	368.86	374.56	0.000018	0.52	1255.03	219.20	0.04
Plumtree	7216	200-YR	788.00	368.00	375.08	368.97	375.08	0.000020	0.58	1370.51	222.47	0.04
Plumtree	7100 Weir 2		Inl Struct									
Plumtree	7030	1-YR	64.00	367.00	369.86		369.86	0.000010	0.22	285.84	108.75	0.02
Plumtree	7030	2-YR	106.00	367.00	370.49		370.49	0.000014	0.30	355.21	112.64	0.03
Plumtree	7030	10-YR	255.00	367.00	372.16		372.17	0.000021	0.46	552.72	123.03	0.04

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	7030	50-YR	510.00	367.00	373.62		373.62	0.000034	0.69	737.75	132.01	0.05
Plumtree	7030	100-YR	645.00	367.00	374.27		374.28	0.000038	0.79	825.94	136.08	0.05
Plumtree	7030	200-YR	783.00	367.00	374.88		374.89	0.000041	0.87	909.39	139.83	0.06
Plumtree	6893	1-YR	64.00	367.00	369.86		369.86	0.000010	0.22	286.86	108.89	0.02
Plumtree	6893	2-YR	106.00	367.00	370.49		370.49	0.000014	0.30	356.20	112.64	0.03
Plumtree	6893	10-YR	255.00	367.00	372.16		372.16	0.000021	0.46	553.32	122.69	0.04
Plumtree	6893	50-YR	510.00	367.00	373.61		373.62	0.000033	0.70	737.44	131.39	0.05
Plumtree	6893	100-YR	645.00	367.00	374.27		374.28	0.000037	0.79	825.10	135.34	0.05
Plumtree	6893	200-YR	783.00	367.00	374.87		374.88	0.000041	0.88	907.99	138.97	0.06
Plumtree	6766	1-YR	64.00	367.00	369.86		369.86	0.000005	0.16	403.48	149.67	0.02
Plumtree	6766	2-YR	106.00	367.00	370.49		370.49	0.000007	0.21	498.33	153.42	0.02
Plumtree	6766	10-YR	255.00	367.00	372.16		372.16	0.000010	0.33	763.74	163.46	0.03
Plumtree	6766	50-YR	510.00	367.00	373.61		373.61	0.000017	0.51	1006.97	172.13	0.04
Plumtree	6766	100-YR	645.00	367.00	374.27		374.27	0.000019	0.58	1121.46	176.07	0.04
Plumtree	6766	200-YR	783.00	367.00	374.87		374.88	0.000021	0.64	1229.04	179.69	0.04
Plumtree	6663	1-YR	64.00	367.00	369.86	367.23	369.86	0.000008	0.19	329.48	127.94	0.02
Plumtree	6663	2-YR	106.00	367.00	370.48	367.32	370.48	0.000011	0.26	411.25	133.50	0.03
Plumtree	6663	10-YR	255.00	367.00	372.16	367.57	372.16	0.000016	0.39	647.21	148.36	0.03
Plumtree	6663	50-YR	510.00	367.00	373.61	367.90	373.61	0.000025	0.59	871.31	161.18	0.04
Plumtree	6663	100-YR	645.00	367.00	374.26	368.05	374.27	0.000028	0.67	979.11	166.99	0.05
Plumtree	6663	200-YR	783.00	367.00	374.87	368.20	374.88	0.000030	0.74	1081.63	172.33	0.05
Plumtree	6600 Weir 3		Inl Struct									
Plumtree	6568	1-YR	71.00	367.00	369.79		369.82	0.000611	1.39	51.23	26.74	0.18
Plumtree	6568	2-YR	110.00	367.00	370.36		370.40	0.000691	1.63	67.44	30.15	0.19
Plumtree	6568	10-YR	271.00	367.00	371.90		371.98	0.000856	2.24	121.11	39.41	0.23
Plumtree	6568	50-YR	542.00	367.00	373.45		373.58	0.000829	2.87	219.79	95.51	0.24
Plumtree	6568	100-YR	691.00	367.00	374.10		374.24	0.000803	3.09	291.73	125.77	0.24
Plumtree	6568	200-YR	844.00	367.00	374.70		374.84	0.000761	3.23	373.34	148.37	0.24
Plumtree	6454	1-YR	71.00	367.00	369.63		369.70	0.001749	2.10	33.88	20.77	0.29
Plumtree	6454	2-YR	110.00	367.00	370.18		370.27	0.001825	2.38	46.17	24.06	0.30
Plumtree	6454	10-YR	271.00	367.00	371.68		371.82	0.001908	3.05	88.95	33.05	0.33
Plumtree	6454	50-YR	542.00	367.00	373.20		373.42	0.001684	3.76	156.25	62.41	0.33
Plumtree	6454	100-YR	691.00	367.00	373.83		374.08	0.001612	4.05	204.59	94.43	0.33
Plumtree	6454	200-YR	844.00	367.00	374.45		374.70	0.001426	4.14	289.35	155.57	0.32
Plumtree	6375 Culvert Diversio		Lat Struct									
Plumtree	6350	1-YR	57.14	366.97	369.25	368.54	369.42	0.004917	3.25	17.57	11.04	0.45
Plumtree	6350	2-YR	85.76	366.97	369.77	368.86	369.98	0.004772	3.65	23.53	11.80	0.46
Plumtree	6350	10-YR	206.12	366.97	371.27	370.02	371.53	0.004719	4.10	50.25	21.50	0.47
Plumtree	6350	50-YR	424.60	366.97	372.78	371.22	373.15	0.004397	4.87	87.20	27.68	0.48
Plumtree	6350	100-YR	545.44	366.97	373.40	371.70	373.82	0.004308	5.21	105.48	31.88	0.49
Plumtree	6350	200-YR	675.92	366.97	373.98	372.15	374.45	0.003956	5.53	127.41	43.07	0.48
Plumtree	6296	1-YR	57.14	366.50	369.12	367.96	369.21	0.002450	2.48	23.07	13.38	0.33
Plumtree	6296	2-YR	85.76	366.50	369.65	368.33	369.77	0.002553	2.80	30.64	15.14	0.35
Plumtree	6296	10-YR	206.12	366.50	371.12	369.38	371.33	0.002585	3.70	57.38	21.74	0.37
Plumtree	6296	50-YR	424.60	366.50	372.59	370.60	372.96	0.002932	4.96	95.12	30.16	0.42
Plumtree	6296	100-YR	545.44	366.50	373.17	371.14	373.62	0.003104	5.54	113.57	33.91	0.44
Plumtree	6296	200-YR	675.92	366.50	373.72	371.67	374.26	0.003235	6.07	133.32	37.52	0.46
Plumtree	6250 Hearthstone Rd		Bridge									
Plumtree	6197	1-YR	57.14	366.39	369.00	367.19	369.02	0.000329	1.07	53.36	24.97	0.13
Plumtree	6197	2-YR	85.76	366.39	369.53	367.39	369.56	0.000379	1.28	67.02	26.47	0.14
Plumtree	6197	10-YR	206.12	366.39	371.02	368.05	371.07	0.000479	1.91	109.42	30.67	0.17
Plumtree	6197	50-YR	424.60	366.39	372.47	368.94	372.59	0.000693	2.83	157.00	34.79	0.22
Plumtree	6197	100-YR	545.44	366.39	373.02	369.35	373.18	0.000819	3.29	176.45	36.34	0.24
Plumtree	6197	200-YR	675.92	366.39	373.52	369.74	373.73	0.000947	3.74	195.10	37.78	0.26
Plumtree	6122	1-YR	57.14	366.62	368.64	368.14	368.89	0.008277	3.94	14.51	9.86	0.57
Plumtree	6122	2-YR	85.76	366.62	369.07	368.49	369.39	0.008793	4.55	18.85	10.48	0.60
Plumtree	6122	10-YR	206.12	366.62	369.71	369.66	370.69	0.022696	7.93	26.00	12.71	0.98
Plumtree	6122	50-YR	424.60	366.62	371.09	371.09	372.17	0.017023	8.40	55.89	33.83	0.91
Plumtree	6122	100-YR	545.44	366.62	371.56	371.56	372.72	0.015340	8.88	72.80	38.54	0.88
Plumtree	6122	200-YR	675.92	366.62	371.99	371.99	373.24	0.014371	9.36	90.25	42.87	0.87
Plumtree	6028	1-YR	57.14	365.53	368.26	367.17	368.36	0.003486	2.62	21.81	15.22	0.39
Plumtree	6028	2-YR	85.76	365.53	368.68	367.53	368.81	0.003834	2.93	31.44	35.17	0.41
Plumtree	6028	10-YR	206.12	365.53	369.78	368.82	369.91	0.002438	3.27	95.81	72.06	0.36
Plumtree	6028	50-YR	424.60	365.53	370.91	369.63	371.07	0.002073	3.84	192.95	99.95	0.35
Plumtree	6028	100-YR	545.44	365.53	371.38	369.93	371.55	0.002010	4.10	243.26	113.48	0.35

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	6028	200-YR	675.92	365.53	371.90	370.20	372.07	0.001814	4.21	306.49	128.94	0.34
Plumtree	5926	1-YR	57.14	365.38	367.75	366.99	367.93	0.005200	3.41	20.05	22.06	0.46
Plumtree	5926	2-YR	85.76	365.38	368.14	367.45	368.35	0.005390	3.83	28.94	23.64	0.48
Plumtree	5926	10-YR	206.12	365.38	369.21	368.47	369.53	0.005746	5.09	58.62	36.97	0.53
Plumtree	5926	50-YR	424.60	365.38	370.20	369.67	370.69	0.006631	6.66	106.21	68.78	0.60
Plumtree	5926	100-YR	545.44	365.38	370.64	370.03	371.17	0.006678	7.18	131.93	91.22	0.61
Plumtree	5926	200-YR	675.92	365.38	371.28	370.38	371.75	0.005241	6.98	181.22	140.77	0.55
Plumtree	5824	1-YR	57.14	365.08	366.42	366.42	366.88	0.025769	5.47	10.46	11.45	1.01
Plumtree	5824	2-YR	85.76	365.08	366.74	366.74	367.29	0.024122	5.98	14.35	13.01	1.00
Plumtree	5824	10-YR	206.12	365.08	367.68	367.68	368.45	0.021956	7.05	29.24	19.27	1.01
Plumtree	5824	50-YR	424.60	365.08	369.03		369.75	0.012541	6.81	62.53	29.99	0.81
Plumtree	5824	100-YR	545.44	365.08	369.96		370.51	0.006328	5.96	97.62	45.70	0.61
Plumtree	5824	200-YR	675.92	365.08	370.84		371.29	0.003821	5.50	150.62	86.60	0.49
Plumtree	5745	1-YR	57.14	363.03	364.86	364.65	365.23	0.015064	4.88	11.71	9.58	0.78
Plumtree	5745	2-YR	85.76	363.03	365.40	365.02	365.77	0.012987	4.87	17.60	13.03	0.74
Plumtree	5745	10-YR	206.12	363.03	366.92	366.08	367.28	0.006680	4.78	43.09	19.88	0.57
Plumtree	5745	50-YR	424.60	363.03	368.74	367.22	369.12	0.004164	4.95	87.36	32.20	0.48
Plumtree	5745	100-YR	545.44	363.03	369.80	367.70	370.13	0.002721	4.64	127.28	49.27	0.41
Plumtree	5745	200-YR	675.92	363.03	370.73	368.16	371.03	0.001955	4.51	177.25	80.98	0.36
Plumtree	5711	1-YR	57.14	362.51	364.83	363.92	364.95	0.003392	2.78	20.56	12.80	0.39
Plumtree	5711	2-YR	85.76	362.51	365.34	364.25	365.49	0.003506	3.10	27.67	14.95	0.40
Plumtree	5711	10-YR	206.12	362.51	366.87	365.29	367.08	0.003171	3.72	55.47	21.11	0.40
Plumtree	5711	50-YR	424.60	362.51	368.70	366.50	368.98	0.002490	4.24	106.07	37.94	0.38
Plumtree	5711	100-YR	545.44	362.51	369.78	367.01	370.03	0.001728	4.09	156.00	56.65	0.33
Plumtree	5711	200-YR	675.92	362.51	370.73	367.49	370.97	0.001317	4.02	216.53	71.53	0.30
Plumtree	5650 Brookmede Rd		Bridge									
Plumtree	5614	1-YR	57.14	361.81	364.63	363.15	364.66	0.000729	1.43	40.07	22.31	0.19
Plumtree	5614	2-YR	85.76	361.81	365.15	363.38	365.19	0.000766	1.64	52.23	24.30	0.20
Plumtree	5614	10-YR	206.12	361.81	366.70	364.13	366.77	0.000831	2.18	94.59	30.22	0.22
Plumtree	5614	50-YR	424.60	361.81	368.35	365.11	368.47	0.000882	2.81	162.35	62.08	0.24
Plumtree	5614	100-YR	545.44	361.81	368.99	365.53	369.13	0.000906	3.11	191.26	75.70	0.24
Plumtree	5614	200-YR	675.92	361.81	369.79	365.96	369.93	0.000747	3.12	286.21	104.12	0.23
Plumtree	5560	1-YR	57.14	362.08	364.56		364.61	0.001045	1.71	33.39	17.59	0.22
Plumtree	5560	2-YR	85.76	362.08	365.07		365.13	0.001195	2.00	42.90	19.71	0.24
Plumtree	5560	10-YR	206.12	362.08	366.60		366.71	0.001387	2.65	77.85	26.03	0.27
Plumtree	5560	50-YR	424.60	362.08	368.23		368.39	0.001300	3.30	158.93	92.69	0.28
Plumtree	5560	100-YR	545.44	362.08	368.91		369.07	0.001150	3.41	230.40	118.21	0.27
Plumtree	5560	200-YR	675.92	362.08	369.75		369.89	0.000864	3.28	343.22	153.66	0.24
Plumtree	5510	1-YR	57.14	362.16	364.26	363.77	364.48	0.007836	3.72	15.35	11.51	0.57
Plumtree	5510	2-YR	85.76	362.16	364.74	364.10	364.99	0.007184	4.05	21.17	12.98	0.56
Plumtree	5510	10-YR	206.12	362.16	366.21	365.14	366.56	0.005705	4.72	43.67	17.52	0.53
Plumtree	5510	50-YR	424.60	362.16	367.72	366.37	368.24	0.005790	5.76	74.21	26.25	0.55
Plumtree	5510	100-YR	545.44	362.16	368.34	366.91	368.92	0.005359	6.15	98.45	57.15	0.55
Plumtree	5510	200-YR	675.92	362.16	369.34	367.42	369.78	0.003287	5.60	162.27	119.37	0.45
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	57.14	361.52	364.12	362.83	364.20	0.001846	2.22	25.68	13.94	0.29
Plumtree	5474	2-YR	85.76	361.52	364.63	363.16	364.73	0.002064	2.59	33.13	15.45	0.31
Plumtree	5474	10-YR	206.12	361.52	366.13	364.18	366.32	0.002408	3.45	59.68	19.90	0.35
Plumtree	5474	50-YR	424.60	361.52	367.58	365.43	367.92	0.003158	4.63	92.06	28.65	0.42
Plumtree	5474	100-YR	545.44	361.52	368.09	365.97	368.51	0.003458	5.22	110.79	47.44	0.44
Plumtree	5474	200-YR	675.92	361.52	368.57	366.48	369.06	0.003570	5.69	136.77	58.34	0.46
Plumtree	5419	1-YR	57.14	361.46	363.98	362.93	364.08	0.002462	2.47	23.12	13.36	0.33
Plumtree	5419	2-YR	85.76	361.46	364.47	363.24	364.60	0.002677	2.87	29.91	14.51	0.35
Plumtree	5419	10-YR	206.12	361.46	365.92	364.22	366.15	0.003090	3.85	53.47	17.91	0.39
Plumtree	5419	50-YR	424.60	361.46	367.22	365.47	367.68	0.004489	5.39	79.32	30.20	0.49
Plumtree	5419	100-YR	545.44	361.46	367.64	366.02	368.23	0.005115	6.17	95.40	61.69	0.53
Plumtree	5419	200-YR	675.92	361.46	368.04	366.55	368.75	0.005583	6.85	114.45	88.72	0.56
Plumtree	5323	1-YR	57.14	361.32	363.66		363.78	0.003916	2.81	20.35	13.61	0.40
Plumtree	5323	2-YR	85.76	361.32	364.13		364.29	0.003874	3.17	27.09	14.79	0.41
Plumtree	5323	10-YR	206.12	361.32	365.57		365.83	0.003799	4.05	51.35	25.24	0.43
Plumtree	5323	50-YR	424.60	361.32	366.95		367.27	0.003375	4.78	123.90	69.18	0.43
Plumtree	5323	100-YR	545.44	361.32	367.42		367.77	0.003370	5.15	158.79	79.80	0.43
Plumtree	5323	200-YR	675.92	361.32	367.88		368.25	0.003283	5.43	198.44	92.37	0.44
Plumtree	5209	1-YR	57.14	361.10	362.90	362.43	363.14	0.008393	3.92	14.58	10.51	0.59
Plumtree	5209	2-YR	85.76	361.10	363.38	362.77	363.67	0.007913	4.32	19.85	11.63	0.58

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5209	10-YR	206.12	361.10	364.76	363.85	365.21	0.007501	5.40	38.19	14.87	0.59
Plumtree	5209	50-YR	424.60	361.10	366.17	365.33	366.73	0.006072	6.36	95.82	68.37	0.57
Plumtree	5209	100-YR	545.44	361.10	366.80	366.11	367.29	0.004819	6.27	143.47	82.73	0.52
Plumtree	5209	200-YR	675.92	361.10	367.39	366.53	367.83	0.003979	6.18	196.05	96.12	0.48
Plumtree	5107	1-YR	57.14	359.92	362.13	361.52	362.36	0.007011	3.78	15.10	9.77	0.54
Plumtree	5107	2-YR	85.76	359.92	362.61	361.90	362.90	0.007248	4.30	19.97	10.73	0.56
Plumtree	5107	10-YR	206.12	359.92	363.88	363.10	364.36	0.009297	5.60	36.81	16.21	0.66
Plumtree	5107	50-YR	424.60	359.92	365.26	364.48	365.96	0.009490	6.70	63.51	23.87	0.69
Plumtree	5107	100-YR	545.44	359.92	365.84	365.00	366.62	0.008769	7.11	80.13	33.65	0.68
Plumtree	5107	200-YR	675.92	359.92	366.40	365.52	367.23	0.008064	7.39	101.58	41.81	0.67
Plumtree	5040	1-YR	57.14	359.23	361.79	360.95	361.94	0.004922	3.12	18.33	12.71	0.46
Plumtree	5040	2-YR	85.76	359.23	362.30	361.32	362.48	0.004577	3.39	25.29	14.56	0.45
Plumtree	5040	10-YR	206.12	359.23	363.55	362.42	363.86	0.005129	4.46	46.21	19.04	0.50
Plumtree	5040	50-YR	424.60	359.23	364.91	363.63	365.40	0.005778	5.62	75.57	23.96	0.56
Plumtree	5040	100-YR	545.44	359.23	365.51	364.14	366.07	0.005876	6.03	90.50	26.11	0.57
Plumtree	5040	200-YR	675.92	359.23	366.08	364.62	366.71	0.005830	6.39	105.85	28.13	0.58
Plumtree	5000 Longview Dr		Bridge									
Plumtree	4932	1-YR	57.14	359.04	360.33	360.31	360.71	0.024141	4.93	11.59	14.12	0.96
Plumtree	4932	2-YR	85.76	359.04	360.79	360.58	361.13	0.013474	4.65	18.43	15.61	0.76
Plumtree	4932	10-YR	206.12	359.04	362.07	361.40	362.46	0.007655	5.03	40.99	19.76	0.62
Plumtree	4932	50-YR	424.60	359.04	363.49	362.46	364.03	0.006615	5.87	72.35	24.38	0.60
Plumtree	4932	100-YR	545.44	359.04	364.03	362.93	364.66	0.006512	6.34	86.28	39.05	0.61
Plumtree	4932	200-YR	675.92	359.04	364.48	363.39	365.23	0.006578	6.93	98.36	40.18	0.62
Plumtree	4845	1-YR	57.14	357.81	359.95	359.06	360.04	0.002686	2.45	23.31	15.06	0.35
Plumtree	4845	2-YR	85.76	357.81	360.48	359.34	360.59	0.002495	2.71	31.64	16.38	0.34
Plumtree	4845	10-YR	206.12	357.81	361.75	360.22	361.97	0.003092	3.78	54.51	19.57	0.40
Plumtree	4845	50-YR	424.60	357.81	363.11	361.36	363.52	0.004037	5.09	83.48	22.98	0.47
Plumtree	4845	100-YR	545.44	357.81	363.62	361.87	364.13	0.004586	5.72	95.55	27.10	0.51
Plumtree	4845	200-YR	675.92	357.81	364.04	362.36	364.67	0.005136	6.38	110.00	42.22	0.54
Plumtree	4745	1-YR	57.14	357.45	359.58		359.72	0.003805	2.95	19.39	11.68	0.40
Plumtree	4745	2-YR	85.76	357.45	360.11		360.26	0.004579	3.11	27.54	18.01	0.44
Plumtree	4745	10-YR	206.12	357.45	361.41		361.62	0.003910	3.73	55.27	24.62	0.44
Plumtree	4745	50-YR	424.60	357.45	362.77		363.09	0.004000	4.55	93.36	31.48	0.47
Plumtree	4745	100-YR	545.44	357.45	363.30		363.66	0.003847	4.87	121.36	59.96	0.47
Plumtree	4745	200-YR	675.92	357.45	363.78		364.17	0.003553	5.11	165.10	120.16	0.46
Plumtree	4636	1-YR	57.14	357.61	359.32		359.39	0.002254	2.14	26.67	18.73	0.32
Plumtree	4636	2-YR	85.76	357.61	359.85		359.93	0.001902	2.32	36.94	19.91	0.30
Plumtree	4636	10-YR	206.12	357.61	361.14		361.30	0.002135	3.19	64.56	22.78	0.33
Plumtree	4636	50-YR	424.60	357.61	362.41		362.72	0.002864	4.46	96.33	34.39	0.40
Plumtree	4636	100-YR	545.44	357.61	362.91	360.88	363.29	0.003030	4.98	129.51	125.23	0.42
Plumtree	4636	200-YR	675.92	357.61	363.49		363.83	0.002549	4.97	217.57	174.44	0.40
Plumtree	4550	1-YR	57.14	357.24	359.05	358.31	359.15	0.003405	2.56	22.31	16.61	0.39
Plumtree	4550	2-YR	85.76	357.24	359.63	358.57	359.74	0.002587	2.62	32.76	19.07	0.35
Plumtree	4550	10-YR	206.12	357.24	360.91	359.42	361.09	0.002723	3.40	60.56	24.43	0.38
Plumtree	4550	50-YR	424.60	357.24	362.12	360.48	362.44	0.003590	4.55	93.68	33.09	0.45
Plumtree	4550	100-YR	545.44	357.24	362.62	360.93	363.01	0.003681	5.01	112.23	72.27	0.47
Plumtree	4550	200-YR	675.92	357.24	363.12	361.37	363.56	0.003552	5.38	134.07	144.80	0.47
Plumtree	4400 US 40		Bridge									
Plumtree	4344	1-YR	57.14	351.69	358.73	353.49	358.73	0.000029	0.48	118.60	26.59	0.04
Plumtree	4344	2-YR	85.76	351.69	359.48	353.83	359.49	0.000041	0.62	139.06	27.75	0.05
Plumtree	4344	10-YR	206.12	351.69	360.76	354.75	360.78	0.000121	1.17	176.49	33.80	0.08
Plumtree	4344	50-YR	424.60	351.69	361.88	355.77	361.95	0.000288	2.01	221.47	60.10	0.13
Plumtree	4344	100-YR	545.44	351.69	362.34	356.23	362.43	0.000379	2.41	244.62	85.47	0.16
Plumtree	4344	200-YR	675.92	351.69	362.81	356.69	362.93	0.000465	2.78	268.67	107.59	0.17
Plumtree	4289	1-YR	57.14	352.78	358.73		358.73	0.000030	0.47	122.18	30.99	0.04
Plumtree	4289	2-YR	85.76	352.78	359.48		359.49	0.000042	0.59	146.54	33.77	0.05
Plumtree	4289	10-YR	206.12	352.78	360.76		360.78	0.000114	1.07	193.21	43.82	0.08
Plumtree	4289	50-YR	424.60	352.78	361.88		361.92	0.000247	1.77	273.36	119.23	0.13
Plumtree	4289	100-YR	545.44	352.78	362.33		362.40	0.000304	2.06	332.48	139.02	0.14
Plumtree	4289	200-YR	675.92	352.78	362.81		362.89	0.000343	2.29	403.44	157.20	0.15
Plumtree	4185	1-YR	129.00	354.77	358.49		358.69	0.004469	3.54	36.39	19.75	0.46
Plumtree	4185	2-YR	201.00	354.77	359.19		359.43	0.004149	3.95	50.91	22.03	0.46
Plumtree	4185	10-YR	391.00	354.77	360.28		360.68	0.004853	5.05	83.16	73.55	0.51
Plumtree	4185	50-YR	758.00	354.77	361.22	360.77	361.77	0.005693	6.38	184.83	134.18	0.58
Plumtree	4185	100-YR	963.00	354.77	361.72	361.19	362.23	0.004934	6.46	262.60	189.14	0.55
Plumtree	4185	200-YR	1207.00	354.77	362.33		362.73	0.003772	6.16	384.57	215.23	0.49

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	4033	1-YR	129.00	355.05	357.96		358.12	0.003093	3.23	39.98	18.95	0.39
Plumtree	4033	2-YR	201.00	355.05	358.65		358.87	0.003235	3.73	53.85	20.96	0.41
Plumtree	4033	10-YR	391.00	355.05	359.86		360.10	0.002655	4.17	151.72	135.09	0.39
Plumtree	4033	50-YR	758.00	355.05	360.90		361.13	0.002421	4.72	314.81	174.90	0.39
Plumtree	4033	100-YR	963.00	355.05	361.48		361.69	0.002025	4.67	422.30	195.64	0.36
Plumtree	4033	200-YR	1207.00	355.05	362.12		362.30	0.001685	4.61	559.11	241.96	0.34
Plumtree	3930	1-YR	129.00	354.49	357.27	356.70	357.61	0.008198	4.66	27.69	15.77	0.62
Plumtree	3930	2-YR	201.00	354.49	357.97	357.23	358.37	0.007137	5.08	39.97	20.57	0.60
Plumtree	3930	10-YR	391.00	354.49	359.08	358.28	359.65	0.006646	6.20	82.68	98.31	0.61
Plumtree	3930	50-YR	758.00	354.49	360.60	359.92	360.86	0.002800	5.21	324.50	197.92	0.42
Plumtree	3930	100-YR	963.00	354.49	361.29	360.28	361.48	0.001909	4.72	468.16	214.73	0.36
Plumtree	3930	200-YR	1207.00	354.49	361.98	360.54	362.13	0.001467	4.48	620.21	229.11	0.32
Plumtree	3816	1-YR	129.00	353.49	356.74	355.60	356.94	0.003992	3.65	35.35	16.91	0.43
Plumtree	3816	2-YR	201.00	353.49	357.51	356.14	357.76	0.003677	4.07	54.79	33.23	0.43
Plumtree	3816	10-YR	391.00	353.49	358.79	357.33	359.08	0.002960	4.69	134.07	98.39	0.41
Plumtree	3816	50-YR	758.00	353.49	360.38	358.87	360.59	0.001833	4.61	342.07	155.88	0.34
Plumtree	3816	100-YR	963.00	353.49	361.10	359.40	361.28	0.001501	4.53	462.34	176.78	0.32
Plumtree	3816	200-YR	1207.00	353.49	361.81	359.77	361.97	0.001262	4.45	592.14	197.69	0.30
Plumtree	3688	1-YR	129.00	352.86	356.34	354.83	356.51	0.002757	3.29	39.18	15.18	0.36
Plumtree	3688	2-YR	201.00	352.86	357.11	355.39	357.34	0.002893	3.91	54.29	29.41	0.38
Plumtree	3688	10-YR	391.00	352.86	358.41	356.52	358.72	0.002762	4.78	124.58	79.10	0.39
Plumtree	3688	50-YR	758.00	352.86	360.07	358.46	360.34	0.002051	5.07	298.55	129.28	0.36
Plumtree	3688	100-YR	963.00	352.86	360.84	359.00	361.07	0.001714	5.01	405.87	148.76	0.33
Plumtree	3688	200-YR	1207.00	352.86	361.57	359.46	361.79	0.001533	5.06	520.87	166.33	0.32
Plumtree	3550	1-YR	129.00	352.85	355.85	354.65	356.04	0.004207	3.56	36.24	18.03	0.44
Plumtree	3550	2-YR	201.00	352.85	356.68	355.18	356.89	0.003604	3.71	55.05	27.20	0.42
Plumtree	3550	10-YR	391.00	352.85	358.06	356.38	358.33	0.002690	4.31	111.40	58.44	0.39
Plumtree	3550	50-YR	758.00	352.85	359.75	357.73	360.05	0.002087	4.87	252.84	108.68	0.37
Plumtree	3550	100-YR	963.00	352.85	360.57	358.28	360.84	0.001690	4.81	348.11	129.75	0.34
Plumtree	3550	200-YR	1207.00	352.85	361.32	358.93	361.57	0.001516	4.91	441.46	144.80	0.33
Plumtree	3428	1-YR	129.00	351.86	355.44	353.90	355.62	0.002850	3.38	38.22	14.97	0.37
Plumtree	3428	2-YR	201.00	351.86	356.25	354.48	356.49	0.002980	3.96	53.46	22.78	0.39
Plumtree	3428	10-YR	391.00	351.86	357.56	355.67	357.95	0.003465	5.14	91.37	36.87	0.43
Plumtree	3428	50-YR	758.00	351.86	359.14	357.41	359.69	0.003674	6.50	169.34	62.48	0.47
Plumtree	3428	100-YR	963.00	351.86	359.99	358.14	360.53	0.003207	6.64	224.66	76.81	0.45
Plumtree	3428	200-YR	1207.00	351.86	360.70	358.97	361.28	0.003164	7.05	277.61	89.85	0.45
Plumtree	3296	1-YR	129.00	351.72	355.09		355.25	0.002619	3.22	40.03	15.26	0.35
Plumtree	3296	2-YR	201.00	351.72	355.86		356.09	0.003076	3.85	52.23	16.93	0.39
Plumtree	3296	10-YR	391.00	351.72	356.94		357.39	0.005191	5.36	72.95	21.64	0.51
Plumtree	3296	50-YR	758.00	351.72	358.05		358.94	0.008960	7.56	100.33	27.75	0.70
Plumtree	3296	100-YR	963.00	351.72	359.05		359.92	0.006484	7.46	133.75	40.96	0.61
Plumtree	3296	200-YR	1207.00	351.72	359.59	358.32	360.64	0.006870	8.27	159.20	57.04	0.64
Plumtree	3179	1-YR	129.00	350.39	354.82	353.32	354.94	0.002522	2.72	47.48	23.10	0.33
Plumtree	3179	2-YR	201.00	350.39	355.58	353.86	355.72	0.002765	3.00	67.10	30.76	0.36
Plumtree	3179	10-YR	391.00	350.39	356.66	354.84	356.84	0.003165	3.43	114.56	51.34	0.40
Plumtree	3179	50-YR	758.00	350.39	357.96	356.28	358.23	0.002646	4.20	193.68	73.96	0.39
Plumtree	3179	100-YR	963.00	350.39	359.20	356.63	359.41	0.001448	3.78	314.08	123.38	0.30
Plumtree	3179	200-YR	1207.00	350.39	359.87	357.01	360.09	0.001363	3.99	390.87	140.67	0.30
Plumtree	3077	1-YR	129.00	350.72	354.53		354.66	0.002821	2.96	43.55	20.60	0.36
Plumtree	3077	2-YR	201.00	350.72	355.27		355.42	0.002980	3.15	72.95	76.94	0.38
Plumtree	3077	10-YR	391.00	350.72	356.49		356.60	0.001556	3.05	211.33	142.95	0.29
Plumtree	3077	50-YR	758.00	350.72	357.92		358.02	0.001032	3.15	443.44	175.59	0.25
Plumtree	3077	100-YR	963.00	350.72	359.22		359.28	0.000526	2.64	682.95	191.04	0.19
Plumtree	3077	200-YR	1207.00	350.72	359.90		359.96	0.000507	2.78	814.82	197.84	0.19
Plumtree	2978	1-YR	129.00	350.53	354.29	352.41	354.41	0.002191	2.83	45.64	18.91	0.32
Plumtree	2978	2-YR	201.00	350.53	354.95	352.99	355.13	0.002960	3.34	60.21	25.03	0.38
Plumtree	2978	10-YR	391.00	350.53	356.09	354.22	356.37	0.003273	4.24	95.65	38.69	0.42
Plumtree	2978	50-YR	758.00	350.53	357.34	355.69	357.81	0.003712	5.62	161.49	67.33	0.47
Plumtree	2978	100-YR	963.00	350.53	358.85	356.26	359.17	0.001835	4.81	273.91	80.45	0.35
Plumtree	2978	200-YR	1207.00	350.53	359.49	356.86	359.85	0.001880	5.21	334.41	111.04	0.36
Plumtree	2917	1-YR	129.00	350.36	354.15	352.29	354.28	0.002217	2.88	44.76	18.24	0.32
Plumtree	2917	2-YR	201.00	350.36	354.75	352.87	354.94	0.002999	3.56	56.47	21.08	0.38
Plumtree	2917	10-YR	391.00	350.36	355.80	354.12	356.13	0.004723	4.59	85.72	34.69	0.50
Plumtree	2917	50-YR	758.00	350.36	356.97	355.73	357.53	0.005062	6.06	136.12	51.52	0.54
Plumtree	2917	100-YR	963.00	350.36	358.71	356.22	359.05	0.001980	4.86	253.97	151.96	0.36
Plumtree	2917	200-YR	1207.00	350.36	359.35	356.77	359.73	0.002008	5.26	302.54	205.63	0.37

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	2900 Frederick Rd		Bridge									
Plumtree	2827	1-YR	129.00	350.08	353.60	353.06	353.87	0.008966	4.16	30.99	22.26	0.62
Plumtree	2827	2-YR	201.00	350.08	354.29	353.57	354.54	0.007002	4.04	50.53	36.82	0.57
Plumtree	2827	10-YR	391.00	350.08	355.23	354.42	355.57	0.005167	4.74	89.28	85.42	0.53
Plumtree	2827	50-YR	758.00	350.08	356.07	355.35	356.73	0.006979	6.68	129.18	124.48	0.64
Plumtree	2827	100-YR	963.00	350.08	356.39	355.77	357.24	0.008049	7.63	145.40	138.54	0.70
Plumtree	2827	200-YR	1207.00	350.08	356.70	356.25	357.80	0.009418	8.71	160.92	149.62	0.77
Plumtree	2759	1-YR	129.00	349.32	353.45		353.57	0.001726	2.81	46.56	18.57	0.28
Plumtree	2759	2-YR	201.00	349.32	354.06		354.26	0.002342	3.59	62.75	41.57	0.33
Plumtree	2759	10-YR	391.00	349.32	355.00		355.29	0.002996	4.72	148.69	138.79	0.39
Plumtree	2759	50-YR	758.00	349.32	355.93		356.24	0.003363	5.64	298.92	185.66	0.42
Plumtree	2759	100-YR	963.00	349.32	356.33		356.64	0.003384	5.93	377.54	206.27	0.43
Plumtree	2759	200-YR	1207.00	349.32	356.75		357.05	0.003268	6.10	468.87	221.54	0.42
Plumtree	2589	1-YR	129.00	349.71	353.00	352.43	353.15	0.003706	3.64	62.06	57.85	0.40
Plumtree	2589	2-YR	201.00	349.71	353.67		353.79	0.002887	3.60	103.29	69.08	0.36
Plumtree	2589	10-YR	391.00	349.71	354.60		354.75	0.002896	4.24	193.50	123.61	0.37
Plumtree	2589	50-YR	758.00	349.71	355.41		355.61	0.003698	5.40	308.01	154.65	0.43
Plumtree	2589	100-YR	963.00	349.71	355.78		356.00	0.003841	5.79	367.52	164.27	0.45
Plumtree	2589	200-YR	1207.00	349.71	356.21		356.43	0.003830	6.09	445.03	208.95	0.45
Plumtree	2485	1-YR	129.00	349.20	351.72	351.49	352.38	0.017123	6.51	20.30	14.40	0.84
Plumtree	2485	2-YR	201.00	349.20	352.32	352.22	353.13	0.016430	7.33	31.29	23.71	0.85
Plumtree	2485	10-YR	391.00	349.20	353.65	353.65	354.22	0.008205	7.01	110.58	110.48	0.65
Plumtree	2485	50-YR	758.00	349.20	354.66		355.09	0.006223	7.18	247.18	153.49	0.59
Plumtree	2485	100-YR	963.00	349.20	355.13		355.51	0.005350	7.11	324.15	169.08	0.55
Plumtree	2485	200-YR	1207.00	349.20	355.65		355.98	0.004632	7.05	414.70	185.60	0.52
Plumtree	2331	1-YR	129.00	348.10	350.87		351.07	0.004232	3.66	35.25	17.41	0.45
Plumtree	2331	2-YR	201.00	348.10	351.65		351.91	0.003707	4.04	50.47	22.18	0.44
Plumtree	2331	10-YR	391.00	348.10	352.87	351.37	353.21	0.003430	4.88	113.77	93.06	0.45
Plumtree	2331	50-YR	758.00	348.10	354.03		354.40	0.003215	5.67	246.03	126.46	0.45
Plumtree	2331	100-YR	963.00	348.10	354.51		354.89	0.003136	5.96	309.15	134.91	0.45
Plumtree	2331	200-YR	1207.00	348.10	355.00		355.40	0.003110	6.29	377.01	143.47	0.46
Plumtree	2153	1-YR	129.00	346.39	350.50		350.62	0.001543	2.72	49.30	18.80	0.26
Plumtree	2153	2-YR	201.00	346.39	351.23		351.41	0.002010	3.43	64.28	22.42	0.30
Plumtree	2153	10-YR	391.00	346.39	352.39		352.66	0.002667	4.48	141.37	92.20	0.35
Plumtree	2153	50-YR	758.00	346.39	353.52		353.83	0.003035	5.44	265.34	124.10	0.38
Plumtree	2153	100-YR	963.00	346.39	354.00		354.32	0.003115	5.78	327.44	135.10	0.39
Plumtree	2153	200-YR	1207.00	346.39	354.49		354.82	0.003115	6.06	395.82	140.38	0.40
Plumtree	1994	1-YR	129.00	346.45	350.20		350.33	0.002078	2.99	43.20	14.67	0.31
Plumtree	1994	2-YR	201.00	346.45	350.81		351.03	0.002754	3.80	57.21	30.77	0.36
Plumtree	1994	10-YR	391.00	346.45	351.85		352.18	0.003334	4.91	127.77	101.47	0.41
Plumtree	1994	50-YR	758.00	346.45	352.95		353.31	0.003453	5.80	258.86	136.41	0.43
Plumtree	1994	100-YR	963.00	346.45	353.45		353.80	0.003333	6.03	331.16	152.45	0.43
Plumtree	1994	200-YR	1207.00	346.45	353.97		354.32	0.003210	6.25	414.32	169.03	0.43
Plumtree	1888	1-YR	129.00	345.73	349.93	348.25	350.09	0.002445	3.32	45.09	33.83	0.35
Plumtree	1888	2-YR	201.00	345.73	350.52	348.89	350.74	0.002748	3.99	71.67	55.78	0.38
Plumtree	1888	10-YR	391.00	345.73	351.55	350.39	351.83	0.002908	4.89	154.96	110.40	0.41
Plumtree	1888	50-YR	758.00	345.73	352.67	351.77	352.95	0.002849	5.60	295.77	137.74	0.42
Plumtree	1888	100-YR	963.00	345.73	353.18	352.09	353.46	0.002733	5.82	369.01	148.04	0.41
Plumtree	1888	200-YR	1207.00	345.73	353.71	352.42	353.99	0.002665	6.07	449.05	158.53	0.41
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	129.00	346.61	349.86		349.93	0.001276	2.40	81.30	64.77	0.26
Plumtree	1830	2-YR	201.00	346.61	350.45		350.54	0.001356	2.73	123.09	80.99	0.27
Plumtree	1830	10-YR	391.00	346.61	351.48		351.58	0.001290	3.14	231.18	133.46	0.28
Plumtree	1830	50-YR	758.00	346.61	352.61		352.73	0.001357	3.81	396.96	153.19	0.30
Plumtree	1830	100-YR	963.00	346.61	353.11		353.24	0.001363	4.06	474.53	155.02	0.30
Plumtree	1830	200-YR	1207.00	346.61	353.62		353.76	0.001401	4.36	553.54	156.85	0.31
Plumtree	1641	1-YR	129.00	345.19	349.54		349.65	0.001642	2.81	56.78	27.55	0.28
Plumtree	1641	2-YR	201.00	345.19	349.97		350.17	0.002466	3.74	71.90	43.14	0.35
Plumtree	1641	10-YR	391.00	345.19	350.88		351.16	0.003146	4.90	145.96	101.97	0.41
Plumtree	1641	50-YR	758.00	345.19	351.95		352.28	0.003441	5.91	273.97	136.71	0.44
Plumtree	1641	100-YR	963.00	345.19	352.53		352.82	0.003040	5.93	355.68	147.02	0.42
Plumtree	1641	200-YR	1207.00	345.19	353.06		353.35	0.002891	6.11	436.57	155.92	0.42
Plumtree	1463	1-YR	129.00	343.35	349.46		349.49	0.000434	1.49	104.61	94.89	0.15
Plumtree	1463	2-YR	201.00	343.35	349.88		349.93	0.000606	1.91	149.91	117.24	0.18
Plumtree	1463	10-YR	391.00	343.35	350.79		350.86	0.000757	2.48	267.91	142.76	0.21
Plumtree	1463	50-YR	758.00	343.35	351.80		351.91	0.001025	3.30	426.79	171.99	0.25

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	1463	100-YR	963.00	343.35	352.36		352.48	0.001009	3.50	528.65	187.88	0.25
Plumtree	1463	200-YR	1207.00	343.35	352.89		353.02	0.001030	3.73	630.24	197.84	0.26
Plumtree	1291	1-YR	400.00	344.26	349.03		349.19	0.003480	4.05	190.22	218.66	0.41
Plumtree	1291	2-YR	585.00	344.26	349.38		349.57	0.003915	4.60	272.56	239.48	0.44
Plumtree	1291	10-YR	1159.00	344.26	350.28		350.47	0.003759	5.26	521.29	304.02	0.45
Plumtree	1291	50-YR	2021.00	344.26	351.38		351.55	0.002918	5.39	890.37	367.36	0.41
Plumtree	1291	100-YR	2567.00	344.26	351.99		352.15	0.002588	5.45	1127.02	408.52	0.39
Plumtree	1291	200-YR	3149.00	344.26	352.57		352.72	0.002190	5.33	1366.58	415.27	0.37
Plumtree	1124	1-YR	400.00	343.58	348.33		348.55	0.004172	4.58	201.86	242.41	0.46
Plumtree	1124	2-YR	585.00	343.58	348.82		348.97	0.003178	4.29	325.28	261.60	0.41
Plumtree	1124	10-YR	1159.00	343.58	349.83		349.95	0.002419	4.36	596.64	277.64	0.37
Plumtree	1124	50-YR	2021.00	343.58	351.02		351.14	0.001954	4.61	941.43	303.26	0.35
Plumtree	1124	100-YR	2567.00	343.58	351.65		351.78	0.001817	4.78	1137.59	316.76	0.34
Plumtree	1124	200-YR	3149.00	343.58	352.25		352.39	0.001721	4.95	1332.50	327.97	0.34
Plumtree	994	1-YR	400.00	342.85	347.93		348.06	0.003026	3.46	212.70	180.37	0.39
Plumtree	994	2-YR	585.00	342.85	348.48		348.59	0.002457	3.40	322.41	206.65	0.36
Plumtree	994	10-YR	1159.00	342.85	349.51		349.64	0.002231	3.96	546.53	228.75	0.36
Plumtree	994	50-YR	2021.00	342.85	350.72		350.87	0.002004	4.53	842.81	262.06	0.36
Plumtree	994	100-YR	2567.00	342.85	351.36		351.53	0.001923	4.81	1014.84	277.41	0.36
Plumtree	994	200-YR	3149.00	342.85	351.96		352.15	0.001871	5.08	1186.91	291.89	0.36
Plumtree	911	1-YR	400.00	342.92	347.62		347.79	0.003217	4.16	207.79	192.40	0.41
Plumtree	911	2-YR	585.00	342.92	348.28		348.40	0.002179	3.76	342.85	213.88	0.34
Plumtree	911	10-YR	1159.00	342.92	349.34		349.46	0.002041	4.30	579.65	234.39	0.35
Plumtree	911	50-YR	2021.00	342.92	350.56		350.71	0.001934	4.87	885.33	264.99	0.35
Plumtree	911	100-YR	2567.00	342.92	351.21		351.36	0.001877	5.14	1061.03	278.87	0.35
Plumtree	911	200-YR	3149.00	342.92	351.82		351.99	0.001845	5.40	1235.22	292.06	0.35
Plumtree	762	1-YR	400.00	342.54	346.97		347.23	0.004543	4.64	121.39	60.84	0.49
Plumtree	762	2-YR	585.00	342.54	347.53		347.90	0.005265	5.60	189.90	161.85	0.55
Plumtree	762	10-YR	1159.00	342.54	348.84		349.09	0.003142	5.41	461.91	234.67	0.45
Plumtree	762	50-YR	2021.00	342.54	350.17		350.39	0.002379	5.58	798.03	270.12	0.40
Plumtree	762	100-YR	2567.00	342.54	350.84		351.07	0.002197	5.76	986.31	288.32	0.40
Plumtree	762	200-YR	3149.00	342.54	351.47		351.70	0.002084	5.96	1172.47	304.56	0.39
Plumtree	658	1-YR	400.00	340.20	346.89		347.00	0.000941	2.80	185.16	171.56	0.24
Plumtree	658	2-YR	585.00	340.20	347.49		347.63	0.001041	3.21	304.70	226.84	0.26
Plumtree	658	10-YR	1159.00	340.20	348.74		348.88	0.001052	3.77	646.37	295.79	0.27
Plumtree	658	50-YR	2021.00	340.20	350.07		350.22	0.000980	4.15	1058.63	320.86	0.27
Plumtree	658	100-YR	2567.00	340.20	350.75		350.90	0.000969	4.38	1279.97	334.11	0.27
Plumtree	658	200-YR	3149.00	340.20	351.38		351.54	0.000977	4.62	1494.02	349.22	0.28
Plumtree	526	1-YR	400.00	341.63	346.75		346.86	0.001242	3.00	257.04	263.46	0.27
Plumtree	526	2-YR	585.00	341.63	347.39		347.48	0.000980	2.95	431.30	279.03	0.24
Plumtree	526	10-YR	1159.00	341.63	348.66		348.74	0.000838	3.21	804.05	305.99	0.23
Plumtree	526	50-YR	2021.00	341.63	350.00		350.08	0.000803	3.60	1231.61	333.11	0.24
Plumtree	526	100-YR	2567.00	341.63	350.67		350.77	0.000803	3.82	1460.63	344.60	0.24
Plumtree	526	200-YR	3149.00	341.63	351.30		351.40	0.000815	4.05	1679.76	355.38	0.24
Plumtree	380	1-YR	400.00	341.92	346.35		346.59	0.002756	4.06	131.33	127.85	0.39
Plumtree	380	2-YR	585.00	341.92	347.06	345.28	347.26	0.002214	4.07	257.45	192.28	0.36
Plumtree	380	10-YR	1159.00	341.92	348.38		348.56	0.001746	4.38	527.79	215.86	0.34
Plumtree	380	50-YR	2021.00	341.92	349.72		349.91	0.001621	4.91	827.97	232.01	0.34
Plumtree	380	100-YR	2567.00	341.92	350.38		350.59	0.001617	5.22	984.75	238.16	0.34
Plumtree	380	200-YR	3149.00	341.92	350.99		351.22	0.001639	5.55	1131.86	242.84	0.35
Plumtree	146	1-YR	400.00	340.73	343.95	343.95	345.12	0.019965	8.70	46.00	19.86	1.01
Plumtree	146	2-YR	585.00	340.73	344.81	344.81	346.07	0.015009	9.05	70.28	44.28	0.91
Plumtree	146	10-YR	1159.00	340.73	346.49	346.49	347.66	0.009306	9.55	198.65	104.60	0.77
Plumtree	146	50-YR	2021.00	340.73	347.68	347.68	349.04	0.009411	11.14	340.32	133.43	0.81
Plumtree	146	100-YR	2567.00	340.73	348.23	348.23	349.70	0.009638	11.97	418.15	145.68	0.83
Plumtree	146	200-YR	3149.00	340.73	348.75	348.75	350.32	0.009805	12.70	495.95	155.67	0.85
Plumtree	63	1-YR	400.00	340.00	343.52	342.18	343.75	0.003501	3.86	103.70	43.33	0.44
Plumtree	63	2-YR	585.00	340.00	344.19	342.76	344.49	0.003507	4.35	134.83	50.20	0.45
Plumtree	63	10-YR	1159.00	340.00	345.60	343.98	346.09	0.003507	5.67	222.36	75.92	0.48
Plumtree	63	50-YR	2021.00	340.00	347.09	345.27	347.78	0.003501	6.92	371.04	118.37	0.51
Plumtree	63	100-YR	2567.00	340.00	347.82	345.95	348.61	0.003500	7.50	463.03	132.02	0.52
Plumtree	63	200-YR	3149.00	340.00	348.50	346.77	349.37	0.003506	8.02	555.93	141.79	0.53

HEC-RAS Plan: H River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	10286	1-YR	391.06	391.05	0.01	0.01	0.00		223.00		123.72	0.01
Plumtree	10286	2-YR	391.79	391.79	0.01	0.01	0.00		307.00		128.16	0.01
Plumtree	10286	10-YR	393.98	393.97	0.01	0.01	0.00	1.07	593.87	1.07	141.38	0.02
Plumtree	10286	50-YR	395.24	395.22	0.02	0.01	0.00	4.66	985.63	4.70	149.21	0.03
Plumtree	10286	100-YR	395.50	395.47	0.03	0.01	0.01	6.44	1187.04	6.52	151.00	0.04
Plumtree	10286	200-YR	395.75	395.72	0.03	0.01	0.01	8.75	1423.37	8.88	152.74	0.05
Plumtree	10044	1-YR	391.05	391.05	0.00	0.00	0.00		223.00		210.47	0.00
Plumtree	10044	2-YR	391.78	391.78	0.00	0.00	0.00		307.00		214.92	0.00
Plumtree	10044	10-YR	393.97	393.96	0.00	0.00	0.00	0.62	594.78	0.60	228.19	0.01
Plumtree	10044	50-YR	395.22	395.22	0.01	0.00	0.00	2.75	989.56	2.69	235.81	0.01
Plumtree	10044	100-YR	395.48	395.47	0.01	0.00	0.00	3.82	1192.43	3.75	237.36	0.01
Plumtree	10044	200-YR	395.73	395.72	0.01	0.01	0.00	5.21	1430.68	5.11	238.86	0.02
Plumtree	9814	1-YR	391.05	391.04	0.00	0.00	0.00		223.00		300.67	0.00
Plumtree	9814	2-YR	391.78	391.78	0.00	0.00	0.00		307.00		305.17	0.00
Plumtree	9814	10-YR	393.97	393.96	0.00	0.00	0.00	0.09	595.84	0.07	318.58	0.00
Plumtree	9814	50-YR	395.22	395.22	0.00	0.00	0.00	0.80	993.48	0.72	327.09	0.00
Plumtree	9814	100-YR	395.47	395.47	0.00	0.00	0.00	1.20	1197.72	1.08	329.62	0.01
Plumtree	9814	200-YR	395.72	395.72	0.01	0.00	0.00	1.73	1437.23	2.04	371.56	0.01
Plumtree	9762	1-YR	391.04	391.04	0.00	0.00	0.00		223.00		285.36	0.00
Plumtree	9762	2-YR	391.78	391.78	0.00	0.00	0.00		307.00		289.98	0.00
Plumtree	9762	10-YR	393.96	393.96	0.00	0.00	0.01	0.46	595.07	0.47	303.77	0.00
Plumtree	9762	50-YR	395.22	395.22	0.00	0.00	0.00	2.06	991.26	1.68	317.46	0.01
Plumtree	9762	100-YR	395.47	395.47	0.00	0.00	0.00	2.87	1194.86	2.27	325.86	0.01
Plumtree	9762	200-YR	395.72	395.72	0.01	0.00	0.00	3.91	1433.27	3.83	334.23	0.01
Plumtree	9732	1-YR	391.04	391.01	0.03			5.17	180.57	37.26	214.23	0.06
Plumtree	9732	2-YR	391.77	391.74	0.04			7.26	248.39	51.35	233.27	0.07
Plumtree	9732	10-YR	393.96	393.90	0.06			14.55	481.61	99.85	282.03	0.10
Plumtree	9732	50-YR	395.22	395.21	0.01			157.66	267.70	569.64	291.63	0.02
Plumtree	9732	100-YR	395.47	395.46	0.01			189.17	318.78	692.05	293.18	0.03
Plumtree	9732	200-YR	395.72	395.71	0.01			226.16	378.37	836.47	294.69	0.03
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	389.12	388.63	0.49	0.90	0.18		223.00		28.37	1.30
Plumtree	9589	2-YR	389.57	388.99	0.58	0.91	0.19	0.00	306.90	0.10	32.27	1.44
Plumtree	9589	10-YR	390.73	389.73	0.99	1.08	0.32	2.23	590.85	2.91	40.41	2.20
Plumtree	9589	50-YR	392.03	390.54	1.49	1.30	0.41	8.76	974.24	12.00	50.74	3.03
Plumtree	9589	100-YR	392.52	391.01	1.51	1.66	0.08	36.37	1143.87	19.76	62.32	3.02
Plumtree	9589	200-YR	393.08	391.55	1.53	1.55	0.20	71.70	1337.47	31.83	78.38	2.99
Plumtree	9499	1-YR	388.05	387.90	0.14	0.94	0.02		85.45	1.55	27.21	0.39
Plumtree	9499	2-YR	388.46	388.27	0.20	1.04	0.02		128.59	5.41	33.79	0.51
Plumtree	9499	10-YR	389.34	388.98	0.36	1.36	0.00		267.08	25.92	51.22	0.93
Plumtree	9499	50-YR	390.13	389.47	0.66	1.60	0.05		466.37	62.63	71.52	1.67
Plumtree	9499	100-YR	390.77	389.01	1.76	1.67	0.09		601.79	60.21	52.08	4.54
Plumtree	9499	200-YR	391.33	389.14	2.19	1.41	0.04		720.39	81.61	55.70	5.62
Plumtree	9398	1-YR	387.10	386.75	0.34	4.14	0.02		87.00		27.31	1.14
Plumtree	9398	2-YR	387.40	387.03	0.37	4.08	0.04		134.00		37.69	1.20
Plumtree	9398	10-YR	387.97	387.59	0.38	3.77	0.08		293.00		80.80	1.24
Plumtree	9398	50-YR	388.48	387.99	0.49	3.17	0.14	5.10	522.24	1.67	116.79	1.40
Plumtree	9398	100-YR	388.70	388.17	0.54	2.91	0.15	15.98	641.74	4.28	121.19	1.48
Plumtree	9398	200-YR	388.92	388.32	0.59	2.71	0.16	29.51	764.59	7.89	124.41	1.60
Plumtree	9301	1-YR	382.93	382.38	0.55	4.84	0.09		87.00		33.01	2.11
Plumtree	9301	2-YR	383.28	382.51	0.77	4.57	0.14		134.00		33.81	2.71
Plumtree	9301	10-YR	384.12	382.92	1.20	2.29	0.03		293.00		36.25	3.62
Plumtree	9301	50-YR	385.17	383.33	1.84	2.06	0.05	0.27	528.58	0.15	38.76	4.91
Plumtree	9301	100-YR	385.64	383.55	2.08	1.94	0.06	1.11	660.08	0.82	40.13	5.29
Plumtree	9301	200-YR	386.05	383.80	2.24	1.84	0.06	2.88	796.76	2.36	41.65	5.43
Plumtree	9196	1-YR	380.72	380.49	0.24	0.22	0.07		87.00		47.45	0.89
Plumtree	9196	2-YR	380.96	380.65	0.31	0.21	0.09		134.00		48.56	1.07
Plumtree	9196	10-YR	381.58	381.07	0.51	0.17	0.14		293.00		51.52	1.47
Plumtree	9196	50-YR	382.30	381.56	0.73	0.11	0.21	0.34	528.50	0.16	54.90	1.88
Plumtree	9196	100-YR	382.64	381.80	0.84	0.10	0.24	1.24	660.05	0.72	56.57	2.06
Plumtree	9196	200-YR	382.98	382.04	0.95	0.08	0.27	2.86	797.35	1.79	58.19	2.22
Plumtree	8987	1-YR	371.78	371.77	0.02	0.02	0.00		87.00		37.18	0.04
Plumtree	8987	2-YR	372.53	372.51	0.02	0.02	0.01		134.00		41.66	0.05
Plumtree	8987	10-YR	374.58	374.54	0.03	0.02	0.01		293.00		53.89	0.06
Plumtree	8987	50-YR	377.00	376.96	0.04	0.01	0.01	2.28	524.12	2.60	68.44	0.06
Plumtree	8987	100-YR	378.20	378.16	0.04	0.01	0.01	6.94	647.52	7.54	75.63	0.06
Plumtree	8987	200-YR	379.37	379.33	0.04	0.01	0.01	14.55	771.98	15.47	82.71	0.06
Plumtree	8753	1-YR	371.76	371.76	0.00	0.01	0.00		87.00		92.81	0.00
Plumtree	8753	2-YR	372.51	372.51	0.00	0.01	0.00		134.00		97.43	0.01
Plumtree	8753	10-YR	374.55	374.55	0.01	0.01	0.00		293.00		110.06	0.01
Plumtree	8753	50-YR	376.98	376.97	0.01	0.00	0.00	0.68	527.69	0.64	125.07	0.01

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	8753	100-YR	378.18	378.17	0.01	0.00	0.00	2.31	657.54	2.16	132.48	0.01
Plumtree	8753	200-YR	379.36	379.35	0.01	0.00	0.00	5.15	792.03	4.82	139.79	0.01
Plumtree	8579	1-YR	371.76	371.75	0.00	0.01	0.00		87.00		86.18	0.01
Plumtree	8579	2-YR	372.50	372.50	0.00	0.01	0.00		134.00		90.69	0.01
Plumtree	8579	10-YR	374.55	374.54	0.01	0.01	0.00		293.00		102.99	0.01
Plumtree	8579	50-YR	376.97	376.97	0.01	0.01	0.00	0.76	527.75	0.49	117.64	0.01
Plumtree	8579	100-YR	378.17	378.16	0.01	0.01	0.00	2.64	657.32	2.04	124.86	0.01
Plumtree	8579	200-YR	379.35	379.34	0.01	0.01	0.00	5.95	791.09	4.97	131.97	0.01
Plumtree	8374	1-YR	371.75	371.74	0.00	0.01	0.00		87.00		66.68	0.01
Plumtree	8374	2-YR	372.49	372.49	0.01	0.01	0.00		134.00		71.18	0.01
Plumtree	8374	10-YR	374.54	374.53	0.01	0.01	0.00		293.00		83.48	0.02
Plumtree	8374	50-YR	376.97	376.95	0.01	0.01	0.00	0.58	527.92	0.50	98.40	0.02
Plumtree	8374	100-YR	378.17	378.15	0.01	0.00	0.00	2.54	657.15	2.31	105.79	0.02
Plumtree	8374	200-YR	379.34	379.33	0.02	0.00	0.00	6.25	789.95	5.80	112.98	0.02
Plumtree	8229	1-YR	371.74	371.74	0.00	0.00	0.00		87.00		92.21	0.00
Plumtree	8229	2-YR	372.49	372.48	0.00	0.00	0.00		134.00		96.72	0.01
Plumtree	8229	10-YR	374.53	374.52	0.01	0.00	0.00		293.00		109.01	0.01
Plumtree	8229	50-YR	376.96	376.95	0.01	0.00	0.00	0.63	527.18	1.19	123.63	0.01
Plumtree	8229	100-YR	378.16	378.15	0.01	0.00	0.00	2.29	656.01	3.70	130.85	0.01
Plumtree	8229	200-YR	379.34	379.33	0.01	0.00	0.00	5.29	788.97	7.74	137.93	0.01
Plumtree	8094	1-YR	371.74	371.73	0.00				87.00		111.98	0.00
Plumtree	8094	2-YR	372.48	372.48	0.00				134.00		116.48	0.00
Plumtree	8094	10-YR	374.52	374.52	0.00				293.00		128.74	0.01
Plumtree	8094	50-YR	376.96	376.95	0.00			0.26	528.45	0.29	143.32	0.01
Plumtree	8094	100-YR	378.16	378.15	0.01			1.28	659.35	1.37	150.54	0.01
Plumtree	8094	200-YR	379.34	379.33	0.01			3.34	795.18	3.48	157.61	0.01
Plumtree	8000 Weir 1		Inl Struct									
Plumtree	7954	1-YR	370.22	370.22	0.00	0.00	0.00		69.00		124.86	0.00
Plumtree	7954	2-YR	370.85	370.85	0.00	0.00	0.00		110.00		128.73	0.00
Plumtree	7954	10-YR	372.71	372.71	0.00	0.00	0.00	0.05	259.91	0.04	140.03	0.01
Plumtree	7954	50-YR	374.05	374.04	0.01	0.00	0.00	0.95	512.11	0.94	148.06	0.01
Plumtree	7954	100-YR	374.57	374.57	0.01	0.01	0.00	1.90	645.22	1.88	151.25	0.01
Plumtree	7954	200-YR	375.10	375.09	0.01	0.01	0.00	3.30	781.44	3.26	154.42	0.02
Plumtree	7800	1-YR	370.21	370.21	0.00	0.00	0.00		69.00		140.86	0.00
Plumtree	7800	2-YR	370.85	370.85	0.00	0.00	0.00		110.00		144.67	0.00
Plumtree	7800	10-YR	372.71	372.71	0.00	0.00	0.00	0.04	259.92	0.04	155.86	0.00
Plumtree	7800	50-YR	374.04	374.04	0.01	0.00	0.00	0.82	512.35	0.83	163.84	0.01
Plumtree	7800	100-YR	374.57	374.56	0.01	0.01	0.00	1.65	645.69	1.66	166.99	0.01
Plumtree	7800	200-YR	375.09	375.09	0.01	0.01	0.00	2.87	782.25	2.88	170.16	0.01
Plumtree	7548	1-YR	370.21	370.21	0.00	0.00	0.00		69.00		199.04	0.00
Plumtree	7548	2-YR	370.85	370.85	0.00	0.00	0.00		110.00		203.15	0.00
Plumtree	7548	10-YR	372.71	372.71	0.00	0.00	0.00	0.03	259.94	0.03	215.20	0.00
Plumtree	7548	50-YR	374.04	374.03	0.00	0.00	0.00	0.66	512.75	0.59	223.78	0.00
Plumtree	7548	100-YR	374.56	374.56	0.00	0.00	0.00	1.33	646.48	1.19	227.17	0.01
Plumtree	7548	200-YR	375.09	375.08	0.00	0.00	0.00	2.32	783.61	2.07	230.56	0.01
Plumtree	7367	1-YR	370.21	370.21	0.00	0.00	0.00		69.00		257.19	0.00
Plumtree	7367	2-YR	370.85	370.84	0.00	0.00	0.00		110.00		261.28	0.00
Plumtree	7367	10-YR	372.71	372.71	0.00	0.00	0.00	0.02	259.96	0.02	273.27	0.00
Plumtree	7367	50-YR	374.03	374.03	0.00	0.00	0.00	0.45	513.04	0.51	281.81	0.00
Plumtree	7367	100-YR	374.56	374.56	0.00	0.00	0.00	0.90	647.07	1.03	285.20	0.00
Plumtree	7367	200-YR	375.08	375.08	0.00	0.00	0.00	1.57	784.63	1.80	288.58	0.00
Plumtree	7216	1-YR	370.21	370.21	0.00				69.00		189.21	0.00
Plumtree	7216	2-YR	370.84	370.84	0.00				110.00		195.91	0.00
Plumtree	7216	10-YR	372.70	372.70	0.00			0.03	259.94	0.03	207.59	0.00
Plumtree	7216	50-YR	374.03	374.03	0.00			0.70	512.69	0.61	215.91	0.01
Plumtree	7216	100-YR	374.56	374.55	0.00			1.40	646.36	1.24	219.20	0.01
Plumtree	7216	200-YR	375.08	375.08	0.01			2.43	783.41	2.16	222.47	0.01
Plumtree	7100 Weir 2		Inl Struct									
Plumtree	7030	1-YR	369.86	369.86	0.00	0.00	0.00		64.00		108.75	0.00
Plumtree	7030	2-YR	370.49	370.49	0.00	0.00	0.00		106.00		112.64	0.00
Plumtree	7030	10-YR	372.17	372.16	0.00	0.00	0.00		255.00		123.03	0.01
Plumtree	7030	50-YR	373.62	373.62	0.01	0.00	0.00	0.16	509.58	0.26	132.01	0.01
Plumtree	7030	100-YR	374.28	374.27	0.01	0.01	0.00	0.62	643.51	0.87	136.08	0.02
Plumtree	7030	200-YR	374.89	374.88	0.01	0.01	0.00	1.46	779.63	1.90	139.83	0.02
Plumtree	6893	1-YR	369.86	369.86	0.00	0.00	0.00		64.00		108.89	0.00
Plumtree	6893	2-YR	370.49	370.49	0.00	0.00	0.00		106.00		112.64	0.00
Plumtree	6893	10-YR	372.16	372.16	0.00	0.00	0.00	0.00	255.00	0.00	122.69	0.01
Plumtree	6893	50-YR	373.62	373.61	0.01	0.00	0.00	0.51	509.00	0.50	131.39	0.01
Plumtree	6893	100-YR	374.28	374.27	0.01	0.00	0.00	1.34	642.35	1.32	135.34	0.02
Plumtree	6893	200-YR	374.88	374.87	0.01	0.00	0.00	2.63	777.77	2.59	138.97	0.02

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	6766	1-YR	369.86	369.86	0.00	0.00	0.00		64.00		149.67	0.00
Plumtree	6766	2-YR	370.49	370.49	0.00	0.00	0.00		106.00		153.42	0.00
Plumtree	6766	10-YR	372.16	372.16	0.00	0.00	0.00		255.00		163.46	0.00
Plumtree	6766	50-YR	373.61	373.61	0.00	0.00	0.00	0.13	509.78	0.09	172.13	0.01
Plumtree	6766	100-YR	374.27	374.27	0.01	0.00	0.00	0.48	644.12	0.40	176.07	0.01
Plumtree	6766	200-YR	374.88	374.87	0.01	0.00	0.00	1.12	780.92	0.97	179.69	0.01
Plumtree	6663	1-YR	369.86	369.86	0.00				64.00		127.94	0.00
Plumtree	6663	2-YR	370.48	370.48	0.00				106.00		133.50	0.00
Plumtree	6663	10-YR	372.16	372.16	0.00				255.00		148.36	0.00
Plumtree	6663	50-YR	373.61	373.61	0.01			0.33	509.51	0.16	161.18	0.01
Plumtree	6663	100-YR	374.27	374.26	0.01			1.20	643.23	0.57	166.99	0.01
Plumtree	6663	200-YR	374.88	374.87	0.01			2.72	778.96	1.32	172.33	0.01
Plumtree	6600 Weir 3		Inl Struct									
Plumtree	6568	1-YR	369.82	369.79	0.03	0.11	0.01		71.00		26.74	0.07
Plumtree	6568	2-YR	370.40	370.36	0.04	0.12	0.01		110.00		30.15	0.09
Plumtree	6568	10-YR	371.98	371.90	0.08	0.14	0.02		271.00		39.41	0.16
Plumtree	6568	50-YR	373.58	373.45	0.12	0.13	0.03	14.21	525.85	1.94	95.51	0.23
Plumtree	6568	100-YR	374.24	374.10	0.14	0.13	0.03	37.72	645.04	8.24	125.77	0.25
Plumtree	6568	200-YR	374.84	374.70	0.15	0.12	0.03	71.83	751.86	20.31	148.37	0.27
Plumtree	6454	1-YR	369.70	369.63	0.07	0.27	0.01		71.00		20.77	0.17
Plumtree	6454	2-YR	370.27	370.18	0.09	0.27	0.01		110.00		24.06	0.21
Plumtree	6454	10-YR	371.82	371.68	0.14	0.28	0.01		271.00		33.05	0.31
Plumtree	6454	50-YR	373.42	373.20	0.22	0.25	0.02	4.24	534.52	3.24	62.41	0.41
Plumtree	6454	100-YR	374.08	373.83	0.25	0.24	0.02	17.54	665.75	7.71	94.43	0.45
Plumtree	6454	200-YR	374.70	374.45	0.24	0.22	0.02	42.12	769.55	32.34	155.57	0.45
Plumtree	6375 Culvert Diversio		Lat Struct									
Plumtree	6350	1-YR	369.42	369.25	0.16	0.18	0.02		57.14		11.04	0.43
Plumtree	6350	2-YR	369.98	369.77	0.21	0.18	0.03		85.76		11.80	0.50
Plumtree	6350	10-YR	371.53	371.27	0.26	0.18	0.01		206.12		21.50	0.60
Plumtree	6350	50-YR	373.15	372.78	0.37	0.19	0.00		424.59	0.01	27.68	0.76
Plumtree	6350	100-YR	373.82	373.40	0.42	0.20	0.00	0.00	544.76	0.68	31.88	0.84
Plumtree	6350	200-YR	374.45	373.98	0.47	0.19	0.01	1.52	671.45	2.95	43.07	0.90
Plumtree	6296	1-YR	369.21	369.12	0.10	0.11	0.00		57.14		13.38	0.24
Plumtree	6296	2-YR	369.77	369.65	0.12	0.11	0.01		85.76		15.14	0.29
Plumtree	6296	10-YR	371.33	371.12	0.21	0.11	0.01	1.38	204.73		21.74	0.44
Plumtree	6296	50-YR	372.96	372.59	0.37	0.13	0.01	14.41	409.75	0.44	30.16	0.71
Plumtree	6296	100-YR	373.62	373.17	0.45	0.14	0.02	25.46	517.90	2.08	33.91	0.85
Plumtree	6296	200-YR	374.26	373.72	0.54	0.15	0.04	40.05	630.46	5.41	37.52	0.98
Plumtree	6250 Hearthstone Rd		Bridge									
Plumtree	6197	1-YR	369.02	369.00	0.02	0.07	0.07		57.14		24.97	0.04
Plumtree	6197	2-YR	369.56	369.53	0.03	0.08	0.09		85.76		26.47	0.06
Plumtree	6197	10-YR	371.07	371.02	0.06	0.11	0.28	0.27	205.73	0.11	30.67	0.11
Plumtree	6197	50-YR	372.59	372.47	0.12	0.14	0.28	3.18	419.89	1.52	34.79	0.21
Plumtree	6197	100-YR	373.18	373.02	0.17	0.16	0.30	5.83	536.78	2.83	36.34	0.28
Plumtree	6197	200-YR	373.73	373.52	0.21	0.18	0.31	9.39	661.93	4.60	37.78	0.35
Plumtree	6122	1-YR	368.89	368.64	0.24	0.48	0.04		57.14		9.86	0.65
Plumtree	6122	2-YR	369.39	369.07	0.32	0.52	0.06		85.76		10.48	0.82
Plumtree	6122	10-YR	370.69	369.71	0.98	0.52	0.25		206.12		12.71	2.39
Plumtree	6122	50-YR	372.17	371.09	1.07	0.43	0.27	1.90	415.10	7.59	33.83	2.43
Plumtree	6122	100-YR	372.72	371.56	1.16	0.41	0.30	7.37	515.66	22.40	38.54	2.57
Plumtree	6122	200-YR	373.24	371.99	1.25	0.37	0.32	16.71	617.92	41.29	42.87	2.74
Plumtree	6028	1-YR	368.36	368.26	0.11	0.43	0.01		57.14		15.22	0.28
Plumtree	6028	2-YR	368.81	368.68	0.13	0.46	0.01	0.85	84.92		35.17	0.34
Plumtree	6028	10-YR	369.91	369.78	0.14	0.36	0.02	38.75	165.21	2.15	72.06	0.36
Plumtree	6028	50-YR	371.07	370.91	0.16	0.35	0.03	128.04	280.08	16.48	99.95	0.44
Plumtree	6028	100-YR	371.55	371.38	0.17	0.34	0.04	179.63	337.05	28.76	113.48	0.48
Plumtree	6028	200-YR	372.07	371.90	0.17	0.29	0.03	240.14	389.86	45.92	128.94	0.49
Plumtree	5926	1-YR	367.93	367.75	0.17	1.02	0.03	2.72	54.43		22.06	0.47
Plumtree	5926	2-YR	368.35	368.14	0.20	1.02	0.04	10.18	75.58		23.64	0.56
Plumtree	5926	10-YR	369.53	369.21	0.32	1.03	0.05	46.24	158.34	1.54	36.97	0.87
Plumtree	5926	50-YR	370.69	370.20	0.48	0.91	0.02	122.31	279.04	23.25	68.78	1.35
Plumtree	5926	100-YR	371.17	370.64	0.54	0.67	0.00	169.06	334.61	41.77	91.22	1.52
Plumtree	5926	200-YR	371.75	371.28	0.47	0.46	0.01	219.46	373.88	82.58	140.77	1.37
Plumtree	5824	1-YR	366.88	366.42	0.46	1.53	0.03		57.14		11.45	1.41
Plumtree	5824	2-YR	367.29	366.74	0.56	1.37	0.06		85.76		13.01	1.59
Plumtree	5824	10-YR	368.45	367.68	0.77	0.88	0.13		206.12		19.27	1.99
Plumtree	5824	50-YR	369.75	369.03	0.72	0.53	0.10		424.47	0.12	29.99	1.64
Plumtree	5824	100-YR	370.51	369.96	0.55	0.31	0.07	2.83	538.26	4.35	45.70	1.13
Plumtree	5824	200-YR	371.29	370.84	0.45	0.21	0.04	15.57	642.89	17.45	86.60	0.88

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5745	1-YR	365.23	364.86	0.37	0.21	0.07		57.14		9.58	1.04
Plumtree	5745	2-YR	365.77	365.40	0.37	0.21	0.07		85.76		13.03	1.00
Plumtree	5745	10-YR	367.28	366.92	0.36	0.15	0.04		206.12		19.88	0.82
Plumtree	5745	50-YR	369.12	368.74	0.38	0.11	0.03		423.62	0.98	32.20	0.77
Plumtree	5745	100-YR	370.13	369.80	0.33	0.07	0.02	0.10	531.99	13.35	49.27	0.63
Plumtree	5745	200-YR	371.03	370.73	0.30	0.05	0.02	8.32	636.30	31.30	80.98	0.56
Plumtree	5711	1-YR	364.95	364.83	0.12	0.15	0.01		57.14		12.80	0.31
Plumtree	5711	2-YR	365.49	365.34	0.15	0.15	0.01		85.76		14.95	0.37
Plumtree	5711	10-YR	367.08	366.87	0.21	0.13	0.01		206.12		21.11	0.47
Plumtree	5711	50-YR	368.98	368.70	0.28				419.90	4.70	37.94	0.54
Plumtree	5711	100-YR	370.03	369.78	0.25			0.77	521.31	23.36	56.65	0.46
Plumtree	5711	200-YR	370.97	370.73	0.23			7.85	614.17	53.90	71.53	0.42
Plumtree	5650 Brookmede Rd		Bridge									
Plumtree	5614	1-YR	364.66	364.63	0.03	0.05	0.00		57.14		22.31	0.08
Plumtree	5614	2-YR	365.19	365.15	0.04	0.05	0.01		85.76		24.30	0.10
Plumtree	5614	10-YR	366.77	366.70	0.07	0.06	0.01		206.12		30.22	0.15
Plumtree	5614	50-YR	368.47	368.35	0.12	0.06	0.01	10.99	413.61		62.08	0.22
Plumtree	5614	100-YR	369.13	368.99	0.15	0.06	0.01	21.41	523.98	0.04	75.70	0.26
Plumtree	5614	200-YR	369.93	369.79	0.14	0.04	0.00	63.76	609.11	3.05	104.12	0.25
Plumtree	5560	1-YR	364.61	364.56	0.05	0.11	0.02		57.14		17.59	0.11
Plumtree	5560	2-YR	365.13	365.07	0.06	0.12	0.02		85.76		19.71	0.14
Plumtree	5560	10-YR	366.71	366.60	0.11	0.12	0.02		206.12		26.03	0.23
Plumtree	5560	50-YR	368.39	368.23	0.16	0.12	0.04	10.57	407.45	6.58	92.69	0.31
Plumtree	5560	100-YR	369.07	368.91	0.16	0.11	0.04	39.70	487.46	18.28	118.21	0.32
Plumtree	5560	200-YR	369.89	369.75	0.14	0.08	0.03	90.43	546.58	38.91	153.66	0.28
Plumtree	5510	1-YR	364.48	364.26	0.22	0.08	0.02		57.14		11.51	0.59
Plumtree	5510	2-YR	364.99	364.74	0.25	0.07	0.01		85.76		12.98	0.65
Plumtree	5510	10-YR	366.56	366.21	0.35	0.05	0.01		206.12		17.52	0.78
Plumtree	5510	50-YR	368.24	367.72	0.52	0.06	0.02		424.39	0.21	26.25	1.05
Plumtree	5510	100-YR	368.92	368.34	0.58	0.06	0.05	2.54	537.48	5.41	57.15	1.14
Plumtree	5510	200-YR	369.78	369.34	0.44			30.38	613.09	32.45	119.37	0.87
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	364.20	364.12	0.08	0.12	0.01		57.14		13.94	0.19
Plumtree	5474	2-YR	364.73	364.63	0.10	0.13	0.01		85.76		15.45	0.24
Plumtree	5474	10-YR	366.32	366.13	0.19	0.15	0.01		206.12		19.90	0.39
Plumtree	5474	50-YR	367.92	367.58	0.33	0.20	0.04	0.09	424.50		28.65	0.65
Plumtree	5474	100-YR	368.51	368.09	0.42	0.23	0.05	3.65	541.65	0.14	47.44	0.80
Plumtree	5474	200-YR	369.06	368.57	0.49	0.24	0.07	16.67	656.66	2.59	58.34	0.91
Plumtree	5419	1-YR	364.08	363.98	0.09	0.29	0.00		57.14		13.36	0.24
Plumtree	5419	2-YR	364.60	364.47	0.13	0.30	0.00		85.76		14.51	0.30
Plumtree	5419	10-YR	366.15	365.92	0.23	0.33	0.00		206.12		17.91	0.49
Plumtree	5419	50-YR	367.68	367.22	0.45	0.37	0.04	0.11	424.48	0.01	30.20	0.89
Plumtree	5419	100-YR	368.23	367.64	0.59	0.39	0.07	4.34	539.55	1.55	61.69	1.13
Plumtree	5419	200-YR	368.75	368.04	0.71	0.40	0.10	12.96	655.16	7.80	88.72	1.35
Plumtree	5323	1-YR	363.78	363.66	0.12	0.63	0.01		57.14		13.61	0.32
Plumtree	5323	2-YR	364.29	364.13	0.16	0.61	0.01		85.76		14.79	0.39
Plumtree	5323	10-YR	365.83	365.57	0.25	0.59	0.02	0.08	206.04		25.24	0.56
Plumtree	5323	50-YR	367.27	366.95	0.31	0.51	0.03	50.91	372.51	1.18	69.18	0.69
Plumtree	5323	100-YR	367.77	367.42	0.34	0.46	0.02	91.13	449.74	4.57	79.80	0.78
Plumtree	5323	200-YR	368.25	367.88	0.36	0.41	0.01	140.33	524.44	11.14	92.37	0.84
Plumtree	5209	1-YR	363.14	362.90	0.24	0.78	0.00		57.14		10.51	0.65
Plumtree	5209	2-YR	363.67	363.38	0.29	0.77	0.00		85.76		11.63	0.74
Plumtree	5209	10-YR	365.21	364.76	0.45	0.85	0.00		206.12		14.87	1.02
Plumtree	5209	50-YR	366.73	366.17	0.57	0.76	0.01	34.64	381.00	8.96	68.37	1.23
Plumtree	5209	100-YR	367.29	366.80	0.50	0.65	0.03	79.13	436.95	29.36	82.73	1.14
Plumtree	5209	200-YR	367.83	367.39	0.44	0.56	0.04	132.14	487.51	56.27	96.12	1.06
Plumtree	5107	1-YR	362.36	362.13	0.22	0.39	0.02		57.14		9.77	0.59
Plumtree	5107	2-YR	362.90	362.61	0.29	0.38	0.03		85.76		10.73	0.72
Plumtree	5107	10-YR	364.36	363.88	0.49	0.45	0.05		206.12		16.21	1.13
Plumtree	5107	50-YR	365.96	365.26	0.70	0.49	0.06		424.56	0.04	23.87	1.49
Plumtree	5107	100-YR	366.62	365.84	0.78	0.48	0.06		541.85	3.59	33.65	1.60
Plumtree	5107	200-YR	367.23	366.40	0.83	0.46	0.06		658.96	16.96	41.81	1.66
Plumtree	5040	1-YR	361.94	361.79	0.15	0.34	0.10		57.14		12.71	0.40
Plumtree	5040	2-YR	362.48	362.30	0.18	0.34	0.15		85.76		14.56	0.45
Plumtree	5040	10-YR	363.86	363.55	0.31	0.35	0.18		206.12		19.04	0.70
Plumtree	5040	50-YR	365.40	364.91	0.49	0.35	0.19		424.60		23.96	1.01
Plumtree	5040	100-YR	366.07	365.51	0.56	0.35	0.20		545.44		26.11	1.13
Plumtree	5040	200-YR	366.71	366.08	0.63	0.35	0.23		675.91	0.01	28.13	1.23
Plumtree	5000 Longview Dr		Bridge									

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	4932	1-YR	360.71	360.33	0.38	0.53	0.14		57.14		14.12	1.19
Plumtree	4932	2-YR	361.13	360.79	0.34	0.43	0.11		85.76		15.61	0.94
Plumtree	4932	10-YR	362.46	362.07	0.39	0.40	0.09		206.12		19.76	0.92
Plumtree	4932	50-YR	364.03	363.49	0.54	0.44	0.07		424.60		24.38	1.12
Plumtree	4932	100-YR	364.66	364.03	0.62	0.47	0.06	0.24	545.19	0.00	39.05	1.25
Plumtree	4932	200-YR	365.23	364.48	0.74	0.50	0.06	1.01	674.77	0.14	40.18	1.43
Plumtree	4845	1-YR	360.04	359.95	0.09	0.32	0.00		57.14		15.06	0.24
Plumtree	4845	2-YR	360.59	360.48	0.11	0.33	0.00		85.76		16.38	0.27
Plumtree	4845	10-YR	361.97	361.75	0.22	0.35	0.00		206.12		19.57	0.48
Plumtree	4845	50-YR	363.52	363.11	0.40	0.40	0.02		424.60		22.98	0.80
Plumtree	4845	100-YR	364.13	363.62	0.51	0.42	0.04	0.02	545.41		27.10	0.98
Plumtree	4845	200-YR	364.67	364.04	0.63	0.42	0.07	2.51	673.41		42.22	1.19
Plumtree	4745	1-YR	359.72	359.58	0.13	0.31	0.02		57.14		11.68	0.35
Plumtree	4745	2-YR	360.26	360.11	0.15	0.31	0.02		85.76		18.01	0.39
Plumtree	4745	10-YR	361.62	361.41	0.22	0.31	0.02		206.12		24.62	0.50
Plumtree	4745	50-YR	363.09	362.77	0.32	0.37	0.00		424.60		31.48	0.67
Plumtree	4745	100-YR	363.66	363.30	0.36	0.37	0.00	7.18	538.26		59.96	0.74
Plumtree	4745	200-YR	364.17	363.78	0.39	0.32	0.01	25.00	644.90	6.02	120.16	0.78
Plumtree	4636	1-YR	359.39	359.32	0.07	0.23	0.00		57.14		18.73	0.19
Plumtree	4636	2-YR	359.93	359.85	0.08	0.19	0.00		85.76		19.91	0.20
Plumtree	4636	10-YR	361.30	361.14	0.16	0.21	0.00		206.12		22.78	0.34
Plumtree	4636	50-YR	362.72	362.41	0.31	0.27	0.00	0.30	424.20	0.10	34.39	0.60
Plumtree	4636	100-YR	363.29	362.91	0.38	0.29	0.00	2.23	536.01	7.20	125.23	0.72
Plumtree	4636	200-YR	363.83	363.49	0.34	0.26	0.01	7.10	604.69	64.14	174.44	0.69
Plumtree	4550	1-YR	359.15	359.05	0.10	0.28	0.03		57.14		16.61	0.27
Plumtree	4550	2-YR	359.74	359.63	0.11	0.16	0.01		85.76		19.07	0.26
Plumtree	4550	10-YR	361.09	360.91	0.18	0.16	0.01		206.12		24.43	0.40
Plumtree	4550	50-YR	362.44	362.12	0.32	0.22	0.02		424.51	0.09	33.09	0.65
Plumtree	4550	100-YR	363.01	362.62	0.39	0.23	0.03	0.01	543.13	2.30	72.27	0.76
Plumtree	4550	200-YR	363.56	363.12	0.44	0.23	0.04	0.23	665.46	10.24	144.80	0.84
Plumtree	4400 US 40		Bridge									
Plumtree	4344	1-YR	358.73	358.73	0.00	0.00	0.00		57.14		26.59	0.01
Plumtree	4344	2-YR	359.49	359.48	0.01	0.00	0.00		85.76		27.75	0.01
Plumtree	4344	10-YR	360.78	360.76	0.02	0.01	0.00		206.07	0.05	33.80	0.04
Plumtree	4344	50-YR	361.95	361.88	0.06	0.01	0.01	0.59	420.74	3.27	60.10	0.10
Plumtree	4344	100-YR	362.43	362.34	0.09	0.02	0.01	3.05	535.88	6.50	85.47	0.14
Plumtree	4344	200-YR	362.93	362.81	0.12	0.02	0.02	7.85	657.06	11.01	107.59	0.19
Plumtree	4289	1-YR	358.73	358.73	0.00	0.02	0.02		57.14		30.99	0.01
Plumtree	4289	2-YR	359.49	359.48	0.01	0.03	0.02		85.76		33.77	0.01
Plumtree	4289	10-YR	360.78	360.76	0.02	0.06	0.04		206.09	0.03	43.82	0.03
Plumtree	4289	50-YR	361.92	361.88	0.05	0.11	0.05	1.92	416.98	5.69	119.23	0.08
Plumtree	4289	100-YR	362.40	362.33	0.06	0.12	0.04	9.49	522.01	13.93	139.02	0.11
Plumtree	4289	200-YR	362.89	362.81	0.08	0.12	0.03	23.14	624.23	28.55	157.20	0.13
Plumtree	4185	1-YR	358.69	358.49	0.20	0.56	0.01		129.00		19.75	0.48
Plumtree	4185	2-YR	359.43	359.19	0.24	0.55	0.01		201.00		22.03	0.55
Plumtree	4185	10-YR	360.68	360.28	0.39	0.53	0.05	2.18	388.82		73.55	0.83
Plumtree	4185	50-YR	361.77	361.22	0.55	0.54	0.09	107.44	649.80	0.76	134.18	1.22
Plumtree	4185	100-YR	362.23	361.72	0.51	0.46	0.09	210.99	744.77	7.23	189.14	1.20
Plumtree	4185	200-YR	362.73	362.33	0.41	0.37	0.07	350.49	809.69	46.81	215.23	1.04
Plumtree	4033	1-YR	358.12	357.96	0.16	0.49	0.02		129.00		18.95	0.38
Plumtree	4033	2-YR	358.87	358.65	0.22	0.48	0.02		201.00		20.96	0.47
Plumtree	4033	10-YR	360.10	359.86	0.23	0.41	0.03	0.30	336.31	54.38	135.09	0.53
Plumtree	4033	50-YR	361.13	360.90	0.23	0.27	0.00	15.82	492.20	249.98	174.90	0.63
Plumtree	4033	100-YR	361.69	361.48	0.21	0.20	0.01	38.36	548.82	375.83	195.64	0.59
Plumtree	4033	200-YR	362.30	362.12	0.18	0.16	0.01	78.64	607.58	520.79	241.96	0.55
Plumtree	3930	1-YR	357.61	357.27	0.34	0.63	0.04		129.00		15.77	0.83
Plumtree	3930	2-YR	358.37	357.97	0.40	0.57	0.04	0.23	200.77		20.57	0.92
Plumtree	3930	10-YR	359.65	359.08	0.57	0.48	0.08	11.92	371.55	7.54	98.31	1.22
Plumtree	3930	50-YR	360.86	360.60	0.27	0.26	0.02	54.00	460.10	243.91	197.92	0.75
Plumtree	3930	100-YR	361.48	361.29	0.19	0.19	0.00	87.04	477.77	398.20	214.73	0.59
Plumtree	3930	200-YR	362.13	361.98	0.15	0.15	0.00	132.16	511.01	563.83	229.11	0.51
Plumtree	3816	1-YR	356.94	356.74	0.21	0.42	0.01		129.00	0.00	16.91	0.48
Plumtree	3816	2-YR	357.76	357.51	0.25	0.42	0.00		196.69	4.31	33.23	0.56
Plumtree	3816	10-YR	359.08	358.79	0.29	0.37	0.00	8.37	332.77	49.87	98.39	0.65
Plumtree	3816	50-YR	360.59	360.38	0.21	0.25	0.01	60.02	456.52	241.45	155.88	0.57
Plumtree	3816	100-YR	361.28	361.10	0.18	0.20	0.01	96.99	505.66	360.34	176.78	0.52
Plumtree	3816	200-YR	361.97	361.81	0.16	0.18	0.01	143.21	553.22	510.57	197.69	0.49
Plumtree	3688	1-YR	356.51	356.34	0.17	0.46	0.00		129.00		15.18	0.38
Plumtree	3688	2-YR	357.34	357.11	0.24	0.44	0.01	1.24	199.54	0.22	29.41	0.49
Plumtree	3688	10-YR	358.72	358.41	0.31	0.38	0.01	21.10	341.56	28.33	79.10	0.66

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	3688	50-YR	360.34	360.07	0.27	0.29	0.00	92.75	494.60	170.65	129.28	0.67
Plumtree	3688	100-YR	361.07	360.84	0.24	0.23	0.00	141.70	549.59	271.71	148.76	0.63
Plumtree	3688	200-YR	361.79	361.57	0.22	0.21	0.00	201.68	613.50	391.82	166.33	0.62
Plumtree	3550	1-YR	356.04	355.85	0.20	0.42	0.01		129.00		18.03	0.47
Plumtree	3550	2-YR	356.89	356.68	0.21	0.40	0.00	0.46	200.54		27.20	0.48
Plumtree	3550	10-YR	358.33	358.06	0.27	0.37	0.01	16.32	368.79	5.90	58.44	0.56
Plumtree	3550	50-YR	360.05	359.75	0.30	0.33	0.03	84.11	606.34	67.54	108.68	0.63
Plumtree	3550	100-YR	360.84	360.57	0.27	0.28	0.03	154.98	690.43	117.59	129.75	0.59
Plumtree	3550	200-YR	361.57	361.32	0.26	0.26	0.03	236.96	789.16	180.88	144.80	0.59
Plumtree	3428	1-YR	355.62	355.44	0.18	0.36	0.00	0.00	129.00		14.97	0.40
Plumtree	3428	2-YR	356.49	356.25	0.24	0.40	0.00	2.01	198.99		22.78	0.51
Plumtree	3428	10-YR	357.95	357.56	0.39	0.56	0.01	24.94	365.78	0.28	36.87	0.78
Plumtree	3428	50-YR	359.69	359.14	0.55	0.72	0.03	107.21	629.21	21.57	62.48	1.13
Plumtree	3428	100-YR	360.53	359.99	0.54	0.58	0.03	175.94	735.26	51.80	76.81	1.12
Plumtree	3428	200-YR	361.28	360.70	0.58	0.59	0.05	249.94	862.46	94.61	89.85	1.23
Plumtree	3296	1-YR	355.25	355.09	0.16	0.30	0.01		129.00		15.26	0.36
Plumtree	3296	2-YR	356.09	355.86	0.23	0.34	0.03		201.00		16.93	0.49
Plumtree	3296	10-YR	357.39	356.94	0.45	0.47	0.08		391.00		21.64	0.92
Plumtree	3296	50-YR	358.94	358.05	0.89	0.52	0.19	0.01	757.99		27.75	1.76
Plumtree	3296	100-YR	359.92	359.05	0.86	0.31	0.20	2.06	958.35	2.59	40.96	1.59
Plumtree	3296	200-YR	360.64	359.59	1.05	0.31	0.25	6.37	1188.30	12.33	57.04	1.89
Plumtree	3179	1-YR	354.94	354.82	0.11	0.27	0.00		129.00		23.10	0.28
Plumtree	3179	2-YR	355.72	355.58	0.14	0.29	0.00		201.00		30.76	0.33
Plumtree	3179	10-YR	356.84	356.66	0.18	0.22	0.02	0.32	390.68		51.34	0.42
Plumtree	3179	50-YR	358.23	357.96	0.27	0.16	0.05	7.99	745.05	4.96	73.96	0.54
Plumtree	3179	100-YR	359.41	359.20	0.21	0.08	0.04	23.45	898.02	41.53	123.38	0.39
Plumtree	3179	200-YR	360.09	359.87	0.22	0.08	0.05	37.89	1078.95	90.16	140.67	0.42
Plumtree	3077	1-YR	354.66	354.53	0.14	0.25	0.00		129.00		20.60	0.32
Plumtree	3077	2-YR	355.42	355.27	0.15	0.29	0.00	4.03	196.97		76.94	0.36
Plumtree	3077	10-YR	356.60	356.49	0.11	0.22	0.02	73.58	300.04	17.38	142.95	0.29
Plumtree	3077	50-YR	358.02	357.92	0.10	0.18	0.04	216.04	443.78	98.17	175.59	0.28
Plumtree	3077	100-YR	359.28	359.22	0.06	0.09	0.03	324.86	473.08	165.06	191.04	0.18
Plumtree	3077	200-YR	359.96	359.90	0.06	0.09	0.03	426.37	554.16	226.48	197.84	0.19
Plumtree	2978	1-YR	354.41	354.29	0.12	0.13	0.00		129.00		18.91	0.28
Plumtree	2978	2-YR	355.13	354.95	0.17	0.18	0.00		201.00		25.03	0.39
Plumtree	2978	10-YR	356.37	356.09	0.28	0.24	0.00		388.52	2.48	38.69	0.58
Plumtree	2978	50-YR	357.81	357.34	0.47	0.26	0.01	6.25	719.17	32.58	67.33	0.91
Plumtree	2978	100-YR	359.17	358.85	0.31	0.12	0.00	40.94	826.84	95.22	80.45	0.60
Plumtree	2978	200-YR	359.85	359.49	0.35	0.12	0.00	73.03	992.74	141.23	111.04	0.68
Plumtree	2917	1-YR	354.28	354.15	0.13	0.07	0.00		129.00		18.24	0.29
Plumtree	2917	2-YR	354.94	354.75	0.20	0.10	0.01		201.00		21.08	0.43
Plumtree	2917	10-YR	356.13	355.80	0.33	0.17	0.02	0.29	390.71	0.00	34.69	0.71
Plumtree	2917	50-YR	357.53	356.97	0.56	0.20	0.07	7.98	743.15	6.87	51.52	1.10
Plumtree	2917	100-YR	359.05	358.71	0.33			50.42	866.12	46.46	151.96	0.62
Plumtree	2917	200-YR	359.73	359.35	0.38			92.74	1043.18	71.08	205.63	0.70
Plumtree	2900 Frederick Rd		Bridge									
Plumtree	2827	1-YR	353.87	353.60	0.27	0.23	0.07		129.00		22.26	0.72
Plumtree	2827	2-YR	354.54	354.29	0.25	0.25	0.03	0.44	200.56		36.82	0.65
Plumtree	2827	10-YR	355.57	355.23	0.34	0.26	0.03	9.54	378.81	2.65	85.42	0.76
Plumtree	2827	50-YR	356.73	356.07	0.66	0.31	0.17	28.52	711.37	18.11	124.48	1.38
Plumtree	2827	100-YR	357.24	356.39	0.85	0.33	0.27	39.65	891.30	32.04	138.54	1.74
Plumtree	2827	200-YR	357.80	356.70	1.09	0.35	0.40	53.16	1103.72	50.12	149.62	2.21
Plumtree	2759	1-YR	353.57	353.45	0.12	0.41	0.00	0.15	128.85		18.57	0.26
Plumtree	2759	2-YR	354.26	354.06	0.20	0.44	0.02	3.62	197.15	0.23	41.57	0.41
Plumtree	2759	10-YR	355.29	355.00	0.29	0.50	0.04	48.67	324.51	17.83	138.79	0.66
Plumtree	2759	50-YR	356.24	355.93	0.31	0.60	0.03	181.69	465.02	111.29	185.66	0.89
Plumtree	2759	100-YR	356.64	356.33	0.31	0.61	0.03	260.54	523.52	178.94	206.27	0.96
Plumtree	2759	200-YR	357.05	356.75	0.30	0.60	0.02	366.08	576.98	263.94	221.54	0.99
Plumtree	2589	1-YR	353.15	353.00	0.15	0.72	0.05		91.96	37.04	57.85	0.47
Plumtree	2589	2-YR	353.79	353.67	0.12	0.60	0.07		114.81	86.19	69.08	0.44
Plumtree	2589	10-YR	354.75	354.60	0.14	0.48	0.04	4.56	175.42	211.02	123.61	0.56
Plumtree	2589	50-YR	355.61	355.41	0.20	0.49	0.02	42.92	268.50	446.58	154.65	0.85
Plumtree	2589	100-YR	356.00	355.78	0.22	0.47	0.02	75.41	309.80	577.79	164.27	0.96
Plumtree	2589	200-YR	356.43	356.21	0.23	0.44	0.01	121.72	352.22	733.06	208.95	1.03
Plumtree	2485	1-YR	352.38	351.72	0.66	1.17	0.13	0.41	128.59		14.40	1.66
Plumtree	2485	2-YR	353.13	352.32	0.81	1.05	0.17	7.15	193.85	0.00	23.71	1.96
Plumtree	2485	10-YR	354.22	353.65	0.58	0.78	0.07	69.53	291.42	30.05	110.48	1.54
Plumtree	2485	50-YR	355.09	354.66	0.43	0.67	0.02	214.77	381.51	161.72	153.49	1.49
Plumtree	2485	100-YR	355.51	355.13	0.38	0.62	0.00	295.24	416.18	251.58	169.08	1.41
Plumtree	2485	200-YR	355.98	355.65	0.34	0.58	0.01	391.36	453.49	362.15	185.60	1.35

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	2331	1-YR	351.07	350.87	0.21	0.43	0.03		129.00		17.41	0.49
Plumtree	2331	2-YR	351.91	351.65	0.25	0.47	0.02		200.64	0.36	22.18	0.55
Plumtree	2331	10-YR	353.21	352.87	0.34	0.54	0.02	22.23	359.74	9.03	93.06	0.72
Plumtree	2331	50-YR	354.40	354.03	0.37	0.56	0.02	155.63	547.90	54.48	126.46	0.89
Plumtree	2331	100-YR	354.89	354.51	0.38	0.56	0.02	244.45	633.49	85.06	134.91	0.95
Plumtree	2331	200-YR	355.40	355.00	0.39	0.55	0.02	351.91	729.57	125.52	143.47	1.03
Plumtree	2153	1-YR	350.62	350.50	0.11	0.28	0.00	0.97	128.03		18.80	0.25
Plumtree	2153	2-YR	351.41	351.23	0.18	0.37	0.00	5.77	195.23		22.42	0.37
Plumtree	2153	10-YR	352.66	352.39	0.26	0.47	0.01	63.80	327.20		92.20	0.59
Plumtree	2153	50-YR	353.83	353.52	0.31	0.51	0.00	263.20	484.23	10.57	124.10	0.82
Plumtree	2153	100-YR	354.32	354.00	0.32	0.51	0.00	384.24	554.39	24.37	135.10	0.91
Plumtree	2153	200-YR	354.82	354.49	0.33	0.50	0.00	536.14	623.86	47.00	140.38	0.97
Plumtree	1994	1-YR	350.33	350.20	0.14	0.24	0.00	0.00	129.00		14.67	0.30
Plumtree	1994	2-YR	351.03	350.81	0.22	0.29	0.00	2.31	198.69		30.77	0.47
Plumtree	1994	10-YR	352.18	351.85	0.32	0.33	0.01	50.44	335.63	4.92	101.47	0.72
Plumtree	1994	50-YR	353.31	352.95	0.35	0.33	0.02	208.98	494.21	54.81	136.41	0.93
Plumtree	1994	100-YR	353.80	353.45	0.35	0.32	0.02	304.73	560.85	97.42	152.45	0.98
Plumtree	1994	200-YR	354.32	353.97	0.34	0.31	0.02	420.20	631.17	155.63	169.03	1.03
Plumtree	1888	1-YR	350.09	349.93	0.17	0.05	0.00	2.54	125.28	1.17	33.83	0.37
Plumtree	1888	2-YR	350.74	350.52	0.22	0.05	0.01	11.62	181.29	8.09	55.78	0.50
Plumtree	1888	10-YR	351.83	351.55	0.28	0.06	0.01	66.80	288.13	36.07	110.40	0.69
Plumtree	1888	50-YR	352.95	352.67	0.28	0.05	0.01	197.21	412.19	148.60	137.74	0.85
Plumtree	1888	100-YR	353.46	353.18	0.28	0.05	0.01	275.38	466.76	220.85	148.04	0.88
Plumtree	1888	200-YR	353.99	353.71	0.28	0.05	0.01	370.44	528.07	308.49	158.53	0.94
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	349.93	349.86	0.07	0.27	0.01	24.89	104.11		64.77	0.19
Plumtree	1830	2-YR	350.54	350.45	0.09	0.34	0.03	55.10	145.90		80.99	0.24
Plumtree	1830	10-YR	351.58	351.48	0.10	0.36	0.06	158.22	225.74	7.04	133.46	0.29
Plumtree	1830	50-YR	352.73	352.61	0.12	0.39	0.06	335.66	350.11	72.23	153.19	0.39
Plumtree	1830	100-YR	353.24	353.11	0.13	0.37	0.05	430.79	410.31	121.90	155.02	0.43
Plumtree	1830	200-YR	353.76	353.62	0.14	0.37	0.04	543.02	480.26	183.72	156.85	0.49
Plumtree	1641	1-YR	349.65	349.54	0.11	0.13	0.02	12.41	116.59		27.55	0.26
Plumtree	1641	2-YR	350.17	349.97	0.19	0.19	0.04	24.06	176.36	0.57	43.14	0.44
Plumtree	1641	10-YR	351.16	350.88	0.28	0.24	0.06	66.37	289.22	35.41	101.97	0.71
Plumtree	1641	50-YR	352.28	351.95	0.33	0.30	0.06	159.38	431.23	167.38	136.71	0.96
Plumtree	1641	100-YR	352.82	352.53	0.30	0.29	0.05	214.03	477.00	271.97	147.02	0.93
Plumtree	1641	200-YR	353.35	353.06	0.29	0.29	0.05	279.95	534.23	392.82	155.92	0.97
Plumtree	1463	1-YR	349.49	349.46	0.03	0.29	0.01	2.09	125.05	1.86	94.89	0.07
Plumtree	1463	2-YR	349.93	349.88	0.05	0.35	0.01	12.52	182.00	6.49	117.24	0.11
Plumtree	1463	10-YR	350.86	350.79	0.07	0.38	0.01	64.44	295.48	31.08	142.76	0.18
Plumtree	1463	50-YR	351.91	351.80	0.11	0.36	0.01	184.73	481.98	91.29	171.99	0.30
Plumtree	1463	100-YR	352.48	352.36	0.12	0.33	0.00	267.31	562.40	133.29	187.88	0.32
Plumtree	1463	200-YR	353.02	352.89	0.13	0.30	0.00	366.57	652.04	188.39	197.84	0.36
Plumtree	1291	1-YR	349.19	349.03	0.17	0.64	0.01	154.36	245.64		218.66	0.55
Plumtree	1291	2-YR	349.57	349.38	0.19	0.59	0.01	273.72	311.22	0.06	239.48	0.68
Plumtree	1291	10-YR	350.47	350.28	0.19	0.50	0.02	706.48	448.68	3.84	304.02	0.82
Plumtree	1291	50-YR	351.55	351.38	0.17	0.40	0.01	1422.21	577.38	21.41	367.36	0.80
Plumtree	1291	100-YR	352.15	351.99	0.16	0.36	0.01	1880.48	648.83	37.68	408.52	0.79
Plumtree	1291	200-YR	352.72	352.57	0.15	0.32	0.00	2397.23	695.81	55.95	415.27	0.73
Plumtree	1124	1-YR	348.55	348.33	0.22	0.46	0.03	137.34	262.67		242.41	0.69
Plumtree	1124	2-YR	348.97	348.82	0.15	0.37	0.01	298.53	286.47		261.60	0.58
Plumtree	1124	10-YR	349.95	349.83	0.12	0.31	0.00	779.86	378.74	0.41	277.64	0.56
Plumtree	1124	50-YR	351.14	351.02	0.12	0.26	0.00	1501.62	510.63	8.76	303.26	0.57
Plumtree	1124	100-YR	351.78	351.65	0.13	0.25	0.00	1954.74	590.18	22.08	316.76	0.59
Plumtree	1124	200-YR	352.39	352.25	0.13	0.24	0.01	2433.85	671.62	43.53	327.97	0.62
Plumtree	994	1-YR	348.06	347.93	0.13	0.26	0.00	138.90	261.10		180.37	0.42
Plumtree	994	2-YR	348.59	348.48	0.11	0.19	0.00	267.06	317.94		206.65	0.38
Plumtree	994	10-YR	349.64	349.51	0.13	0.18	0.00	646.16	511.92	0.92	228.75	0.47
Plumtree	994	50-YR	350.87	350.72	0.16	0.16	0.00	1234.74	774.37	11.89	262.06	0.56
Plumtree	994	100-YR	351.53	351.36	0.17	0.16	0.00	1609.61	929.08	28.31	277.41	0.61
Plumtree	994	200-YR	352.15	351.96	0.19	0.15	0.01	2009.03	1088.13	51.85	291.89	0.66
Plumtree	911	1-YR	347.79	347.62	0.18	0.55	0.01	146.35	253.65		192.40	0.56
Plumtree	911	2-YR	348.40	348.28	0.12	0.47	0.03	306.97	278.03		213.88	0.43
Plumtree	911	10-YR	349.46	349.34	0.13	0.36	0.01	749.18	407.68	2.14	234.39	0.52
Plumtree	911	50-YR	350.71	350.56	0.15	0.31	0.01	1424.44	580.17	16.39	264.99	0.62
Plumtree	911	100-YR	351.36	351.21	0.16	0.29	0.01	1857.75	677.80	31.45	278.87	0.67
Plumtree	911	200-YR	351.99	351.82	0.17	0.28	0.01	2319.43	777.90	51.67	292.06	0.72
Plumtree	762	1-YR	347.23	346.97	0.27	0.18	0.04	94.93	305.07		60.84	0.72
Plumtree	762	2-YR	347.90	347.53	0.38	0.21	0.07	138.45	443.73	2.82	161.85	0.98
Plumtree	762	10-YR	349.09	348.84	0.26	0.17	0.03	480.91	599.65	78.43	234.67	0.82
Plumtree	762	50-YR	350.39	350.17	0.22	0.15	0.02	975.17	798.36	247.46	270.12	0.80

HEC-RAS Plan: H River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	762	100-YR	351.07	350.84	0.22	0.14	0.02	1285.78	918.34	362.88	288.32	0.83
Plumtree	762	200-YR	351.70	351.47	0.23	0.14	0.02	1618.88	1040.69	489.43	304.56	0.86
Plumtree	658	1-YR	347.00	346.89	0.12	0.14	0.00	7.31	386.06	6.64	171.56	0.23
Plumtree	658	2-YR	347.63	347.49	0.14	0.13	0.02	37.95	506.96	40.09	226.84	0.29
Plumtree	658	10-YR	348.88	348.74	0.15	0.12	0.02	204.86	748.93	205.22	295.79	0.36
Plumtree	658	50-YR	350.22	350.07	0.15	0.12	0.02	509.69	1007.66	503.65	320.86	0.41
Plumtree	658	100-YR	350.90	350.75	0.15	0.12	0.02	708.30	1159.19	699.51	334.11	0.45
Plumtree	658	200-YR	351.54	351.38	0.16	0.12	0.02	927.52	1318.66	902.82	349.22	0.48
Plumtree	526	1-YR	346.86	346.75	0.11	0.26	0.01	18.91	322.97	58.12	263.46	0.27
Plumtree	526	2-YR	347.48	347.39	0.09	0.21	0.01	57.92	368.36	158.72	279.03	0.25
Plumtree	526	10-YR	348.74	348.66	0.08	0.17	0.01	183.10	511.26	464.64	305.99	0.27
Plumtree	526	50-YR	350.08	350.00	0.09	0.16	0.01	385.21	704.11	931.68	333.11	0.32
Plumtree	526	100-YR	350.77	350.67	0.09	0.16	0.01	526.77	817.54	1222.69	344.60	0.35
Plumtree	526	200-YR	351.40	351.30	0.10	0.16	0.01	680.77	935.12	1533.11	355.38	0.38
Plumtree	380	1-YR	346.59	346.35	0.24	1.37	0.09	24.11	374.86	1.04	127.85	0.52
Plumtree	380	2-YR	347.26	347.06	0.20	1.08	0.11	94.63	456.69	33.68	192.28	0.49
Plumtree	380	10-YR	348.56	348.38	0.18	0.80	0.10	319.53	655.36	184.11	215.86	0.52
Plumtree	380	50-YR	349.91	349.72	0.20	0.76	0.12	655.90	920.23	444.87	232.01	0.60
Plumtree	380	100-YR	350.59	350.38	0.21	0.76	0.13	866.65	1078.10	622.25	238.16	0.66
Plumtree	380	200-YR	351.22	350.99	0.23	0.77	0.13	1090.08	1241.62	817.30	242.84	0.73
Plumtree	146	1-YR	345.12	343.95	1.18	0.58	0.28		400.00		19.86	2.66
Plumtree	146	2-YR	346.07	344.81	1.26	0.53	0.29	5.30	578.51	1.19	44.28	2.63
Plumtree	146	10-YR	347.66	346.49	1.17	0.45	0.20	170.15	945.61	43.24	104.60	2.53
Plumtree	146	50-YR	349.04	347.68	1.36	0.45	0.20	508.59	1378.31	134.11	133.43	3.19
Plumtree	146	100-YR	349.70	348.23	1.47	0.46	0.21	753.50	1620.20	193.30	145.68	3.58
Plumtree	146	200-YR	350.32	348.75	1.57	0.46	0.21	1035.95	1856.36	256.69	155.67	3.93
Plumtree	63	1-YR	343.75	343.52	0.23				400.00		43.33	0.51
Plumtree	63	2-YR	344.49	344.19	0.29			0.05	584.92	0.02	50.20	0.61
Plumtree	63	10-YR	346.09	345.60	0.49			14.37	1137.88	6.75	75.92	0.91
Plumtree	63	50-YR	347.78	347.09	0.69			92.49	1873.39	55.12	118.37	1.22
Plumtree	63	100-YR	348.61	347.82	0.78			170.23	2288.11	108.67	132.02	1.38
Plumtree	63	200-YR	349.37	348.50	0.87			268.47	2701.73	178.81	141.79	1.52

Appendix H-10

Plumtree Branch: Option I Hydraulic Modeling

SCS TR-55 RUNOFF CURVE NUMBER

JOB NAME: Valley Mede Flood Study, Howard County
Ultimate Land Use, Fair Conditions - Undeveloped Parcels as Woods in Good Condition
Drainage Area #5

DATE: 09/21/17
JOB NO.: 5635-49

COMPUTED BY: CEL
CHECKED BY: ALH

STUDY POINT: E: Little Plumtree Branch at Michael's Way

CONDITION: X ULTIMATE
EXISTING

RUNOFF CURVE NUMBER COMPUTATION

HYDROLOGIC SOIL GROUP	LAND USE	RUNOFF CURVE NO.	Area (ft^2)	AREA (ac)	RCN x A
B	Impervious	98	405	0.009	0.91
D	Impervious	98	788,820	18.109	1774.66
B	Residential - 1/2 Acre	76	5,163,807	118.545	9009.40
C	Residential - 1/2 Acre	84	1,244,916	28.579	2400.66
D	Residential - 1/2 Acre	88	106,892	2.454	215.94
B	Woods - Good Condition	55	2,789,483	64.038	3522.07
C	Woods - Good Condition	70	977,575	22.442	1570.94
D	Woods - Good Condition	77	228,382	5.243	403.71
		TOTAL	**11,300,280**	**259.419**	**18898.30**
				MI^2	**0.4053**

WEIGHTED RUNOFF CURVE NUMBER = **TOT RCN x AC =** **18898.30** = **72.849**
TOTAL ACRES **259.42**

1

```
 ******************80-80 LIST OF INPUT DATA FOR TR-20
 HYDROLOGY******************

 JOB TR-20                                                    NOPLOTS
 TITLE     Valley Mede Ultimate LU, Fair Cond, Subdivided
 TITLE     2, 10, 50, 100-year 24-hr storms NOAA C Rainfall Distributions
  2 XSECTN   002                  1.0      382.34
  8                             380.31        0.00        0.00
  8                             381.01       17.58        8.61
  8                             381.71       57.72       18.68
  8                             382.41       87.42       30.14
  8                             383.11      104.50       69.28
  8                             383.81      263.75      127.12
  8                             384.51      485.21      191.79
  8                             385.21      756.68      264.06
  8                             385.91     1097.04      343.49
  8                             386.61     1504.59      429.14
  8                             387.31     1935.42      521.71
  8                             388.01     2404.29      624.39
  8                             388.71     3010.65      736.45
  8                             389.41     3695.34      856.11
  8                             390.11     4464.50      983.39
  9 ENDTBL
  2 XSECTN   007                  1.0      368.32
  8                             365.53        0.00        0.00
  8                             366.13        2.41        1.85
  8                             366.73       13.26        5.96
  8                             367.33       32.81       11.12
  8                             367.93       56.86       17.33
  8                             368.53       58.83       27.09
  8                             369.13       87.92       53.94
  8                             369.73      182.33       92.49
  8                             370.33      312.70      139.48
  8                             370.93      486.35      195.36
  8                             371.53      699.83      260.83
  8                             372.13      968.75      336.90
  8                             372.73     1275.43      425.26
  8                             373.33     1614.79      529.26
  8                             373.93     2124.43      651.29
  8                             374.53     2756.14      782.07
  8                             375.13     3501.54      920.13
  8                             375.73     4298.02     1065.04
  9 ENDTBL
  2 XSECTN   010                  1.0      356.35
  8                             348.10        0.00        0.00
  8                             348.70        5.42        4.43
  8                             349.30       24.01       11.59
  8                             349.90       53.17       19.81
  8                             350.50       92.55       29.09
  8                             351.10      142.34       39.42
  8                             351.70      165.15       51.53
  8                             352.90      175.05      116.35
  8                             353.50      306.92      180.56
1


 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************
```

```
  8                          354.10      516.89      254.74
  8                          354.70      768.52      334.49
  8                          355.30     1065.05      420.62
  8                          355.90     1408.22      513.66
  8                          356.50     1807.31      613.67
  8                          357.10     2263.93      719.75
  8                          357.70     2774.44      831.81
  8                          358.30     3358.23      949.51
  9 ENDTBL
  2 XSECTN   014                1.0      379.93
  8                          376.15        0.00        0.00
  8                          377.05        8.36        4.84
  8                          377.95       50.12       15.58
  8                          378.85      120.19       28.42
  8                          380.65      159.08       88.20
  8                          381.55      355.19      161.67
  8                          382.45      675.00      251.36
  8                          383.35     1104.38      349.36
  8                          384.25     1615.02      456.11
  8                          385.15     2234.68      571.32
  8                          386.05     2973.63      693.77
  8                          386.95     3792.19      822.71
  8                          387.85     4704.26      958.82
  8                          388.75     5747.20     1101.81
  8                          389.65     6882.68     1250.71
  8                          390.55     8093.30     1406.32
  8                          391.45     9366.77     1569.98
  8                          392.35    10762.79     1742.42
  9 ENDTBL
  2 XSECTN   019                1.0      357.27
  8                          353.42        0.00        0.00
  8                          354.17        5.09        3.18
  8                          354.92       23.50        9.02
  8                          355.67       54.37       16.42
  8                          357.17       67.66       39.26
  8                          357.92      141.61       78.64
  8                          358.67      290.86      152.96
  8                          359.42      578.12      249.05
  8                          360.17      989.10      363.75
  8                          360.92     1520.99      494.51
  8                          361.67     2178.56      640.80
  8                          362.42     2981.64      802.19
  8                          363.17     3939.75      976.51
  8                          363.92     5049.66     1162.33
  8                          364.67     6325.86     1358.62
  8                          365.42     7734.95     1564.62
  9 ENDTBL
  2 XSECTN   023                1.0      344.26
  8                          340.73        0.00        0.00
  8                          341.48        9.64        6.59
1
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
  8                          342.23       39.11       16.56
  8                          342.98       85.34       28.29
  8                          344.48      146.45       57.99
  8                          345.23      162.66       92.62
  8                          345.98      273.72      148.97
  8                          346.73      453.62      224.13
  8                          347.48      714.72      314.46
```

```
  8                            348.23     1049.51      417.50
  8                            348.98     1470.76      532.23
  8                            349.73     1960.34      657.45
  8                            350.48     2559.41      793.58
  8                            351.23     3222.20      938.75
  8                            351.98     3947.27     1094.98
  9 ENDTBL
  5 RAINFL 5              .1
  8          0.0000      0.0013      0.0023      0.0034      0.0044
  8          0.0055      0.0065      0.0076      0.0087      0.0098
  8          0.0109      0.0121      0.0132      0.0143      0.0155
  8          0.0167      0.0178      0.0190      0.0202      0.0214
  8          0.0226      0.0238      0.0251      0.0263      0.0276
  8          0.0288      0.0301      0.0314      0.0327      0.0340
  8          0.0353      0.0366      0.0379      0.0393      0.0406
  8          0.0420      0.0434      0.0447      0.0461      0.0475
  8          0.0489      0.0504      0.0518      0.0532      0.0547
  8          0.0562      0.0576      0.0591      0.0606      0.0621
  8          0.0636      0.0651      0.0667      0.0682      0.0697
  8          0.0713      0.0729      0.0745      0.0760      0.0776
  8          0.0793      0.0809      0.0826      0.0843      0.0861
  8          0.0879      0.0898      0.0916      0.0936      0.0955
  8          0.0975      0.0996      0.1017      0.1038      0.1060
  8          0.1082      0.1104      0.1127      0.1150      0.1174
  8          0.1198      0.1223      0.1247      0.1273      0.1298
  8          0.1324      0.1351      0.1378      0.1405      0.1432
  8          0.1461      0.1490      0.1521      0.1554      0.1588
  8          0.1623      0.1660      0.1699      0.1739      0.1780
  8          0.1823      0.1868      0.1914      0.1961      0.2010
  8          0.2061      0.2117      0.2179      0.2247      0.2321
  8          0.2400      0.2490      0.2591      0.2702      0.2825
  8          0.2955      0.3157      0.3370      0.3662      0.4067
  8          0.4766      0.5933      0.6338      0.6630      0.6843
  8          0.7045      0.7176      0.7298      0.7409      0.7510
  8          0.7600      0.7679      0.7753      0.7821      0.7883
  8          0.7939      0.7990      0.8039      0.8086      0.8132
  8          0.8177      0.8220      0.8261      0.8301      0.8340
  8          0.8377      0.8412      0.8446      0.8479      0.8510
  8          0.8540      0.8568      0.8595      0.8622      0.8649
  8          0.8676      0.8702      0.8727      0.8753      0.8778
  8          0.8802      0.8826      0.8850      0.8873      0.8896
  8          0.8918      0.8940      0.8962      0.8983      0.9004
  8          0.9025      0.9045      0.9064      0.9084      0.9103
1
```

```
 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************

  8          0.9121      0.9139      0.9157      0.9174      0.9191
  8          0.9208      0.9224      0.9240      0.9256      0.9271
  8          0.9287      0.9303      0.9318      0.9334      0.9349
  8          0.9364      0.9379      0.9394      0.9409      0.9424
  8          0.9439      0.9453      0.9468      0.9482      0.9496
  8          0.9511      0.9525      0.9539      0.9553      0.9566
  8          0.9580      0.9594      0.9607      0.9621      0.9634
  8          0.9647      0.9660      0.9673      0.9686      0.9699
  8          0.9712      0.9724      0.9737      0.9749      0.9762
  8          0.9774      0.9786      0.9798      0.9810      0.9822
  8          0.9834      0.9845      0.9857      0.9868      0.9879
  8          0.9891      0.9902      0.9913      0.9924      0.9935
  8          0.9945      0.9956      0.9967      0.9977      0.9987
  8          1.0000      1.0000      1.0000      1.0000      1.0000
```

```
  9 ENDTBL
  6 RUNOFF 1 001       1 0.4053      72.849       0.444      1         1  DA5
  6 REACH  3  02   1   2 3113                                 1         1
  6 RUNOFF 1 003       3 0.0673      77.021       0.303      1         1  DA6
  6 REACH  3  02   3   4 1954                                 1         1
  6 ADDHYD 4 004   2 4 1                                      1         1
  6 RUNOFF 1 005       2 0.1867      76.388       0.530      1         1  DA4
  6 ADDHYD 4 006   1 2 3                                      1         1
  6 REACH  3  07   3   4 2088                                 1         1
  6 RUNOFF 1 008       2 0.2020      75.944       0.428      1         1  DA3
  6 ADDHYD 4 009   4 2 3                                      1         1
  6 REACH  3  10   3   1 3852                                 1         1
  6 RUNOFF 1 011       2 0.2366      76.760       0.443      1         1  DA2
  6 ADDHYD 4 012   1 2 6                                      1         1
  6 RUNOFF 1 013       1 0.3775      78.713       0.667      1         1  DA10
  6 REACH  3  14   1   2 2484                                 1         1
  6 RUNOFF 1 015       3 0.0886      84.806       0.443      1         1  DA9
  6 ADDHYD 4 016   2 3 4                                      1         1
  6 RUNOFF 1 017       3 0.0693      94.066       0.151      1         1  DA8
  6 ADDHYD 4 018   4 3 2                                      1         1
  6 REACH  3 019   2   1 4092                                 1         1
  6 RUNOFF 1 020       2 0.3284      87.933       0.277      1         1  DA7
  6 ADDHYD 4 021   1 2 7                                      1         1
  6 ADDHYD 4 022   6 7 1                                      1         1
  6 REACH  3  23   1   2 586                                  1         1
  6 RUNOFF 1 024       3 0.0200      72.029       0.277      1         1  DA1
  6 ADDHYD 4 025   2 3 4                                      1         1
    ENDATA
  7 INCREM 6                    0.05
  7 COMPUT 7 001   025           0.0        2.64         1.05 2  1   1
    ENDCMP 1
  7 COMPUT 7 001   025           0.0        3.19         1.05 2  1   2
    ENDCMP 1
  7 COMPUT 7 001   025           0.0        4.91         1.05 2  1   10
    ENDCMP 1
  7 COMPUT 7 001   025           0.0        7.23         1.05 2  1   50
1


 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

    ENDCMP 1
  7 COMPUT 7 001   025           0.0        8.47         1.05 2  1   99
    ENDCMP 1
    ENDJOB 2

 **********END OF 80-80
 LIST**********
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
 Distributions2.04TEST
 07:08:53                   PASS   1   JOB NO.   1                    PAGE
 1


 EXECUTIVE CONTROL INCREM    MAIN TIME INCREMENT =   .050 HOURS
```

```
 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  2.64       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. = 1            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.36                         106.6                       (RUNOFF)
       20.13                           5.3                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .64 WATERSHED INCHES;     167 CFS-HRS;      13.8 ACRE-
                    FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.58                          84.0                        382.33

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .64 WATERSHED INCHES;     167 CFS-HRS;      13.8 ACRE-
                    FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.25                          29.6                        (RUNOFF)
       20.10                           1.0 *                      (RUNOFF)
                                           * FIRST POINT OF FLAT PEAK

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .83 WATERSHED INCHES;      36 CFS-HRS;       3.0 ACRE-
                    FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.40                          24.2                        381.13

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .83 WATERSHED INCHES;      36 CFS-HRS;       3.0 ACRE-
                    FEET.
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
 Distributions2.04TEST
 07:08:53                   PASS   1   JOB NO.   1                    PAGE
 2
```

```
 OPERATION ADDHYD   XSECTION   4

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.54                         104.4                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .67 WATERSHED INCHES;     203 CFS-HRS;      16.8 ACRE-
                    FEET.


 OPERATION RUNOFF   XSECTION   5

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.41                          60.3                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .80 WATERSHED INCHES;      96 CFS-HRS;       8.0 ACRE-
                    FEET.


 OPERATION ADDHYD   XSECTION   6

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.49                         160.9                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .70 WATERSHED INCHES;     299 CFS-HRS;      24.7 ACRE-
                    FEET.


 OPERATION REACH    XSECTION   7

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.78                         129.7                         369.40

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .70 WATERSHED INCHES;     299 CFS-HRS;      24.7 ACRE-
                    FEET.


 OPERATION RUNOFF   XSECTION   8

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.34                          70.2                       (RUNOFF)
       23.13                           2.4                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    .78 WATERSHED INCHES;     101 CFS-HRS;       8.4 ACRE-
                    FEET.


 OPERATION ADDHYD   XSECTION   9
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
 Distributions2.04TEST
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.67	166.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.72 WATERSHED INCHES; 400 CFS-HRS; 33.1 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.93	151.9	351.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.72 WATERSHED INCHES; 400 CFS-HRS; 33.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.35	86.0	(RUNOFF)
20.13	3.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.82 WATERSHED INCHES; 125 CFS-HRS; 10.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.78	187.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.74 WATERSHED INCHES; 525 CFS-HRS; 43.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.50	128.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.92 WATERSHED INCHES; 223 CFS-HRS; 18.5 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.64	121.2	378.90

1

```
TR20 ------------------------------------------------------------------- SCS
-
               Valley Mede Ultimate LU, Fair Cond, Subdivided
               VERSION
09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
Distributions2.04TEST
07:08:53                  PASS   1   JOB NO.   1                      PAGE
4


   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                .92 WATERSHED INCHES;     223 CFS-HRS;      18.5 ACRE-
                FEET.


OPERATION RUNOFF   XSECTION  15

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.33                        53.2                       (RUNOFF)
      20.13                         1.7                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               1.28 WATERSHED INCHES;      73 CFS-HRS;       6.0 ACRE-
               FEET.


OPERATION ADDHYD   XSECTION  16

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.57                       154.5                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                .99 WATERSHED INCHES;     296 CFS-HRS;      24.5 ACRE-
                FEET.


OPERATION RUNOFF   XSECTION  17

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.14                        99.0                       (RUNOFF)
      17.34                         2.2                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               2.00 WATERSHED INCHES;      89 CFS-HRS;       7.4 ACRE-
               FEET.


OPERATION ADDHYD   XSECTION  18

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.17                       166.7                       (NULL)
      12.53                       176.8                       (NULL)
      20.00                         9.7                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               1.10 WATERSHED INCHES;     381 CFS-HRS;      31.5 ACRE-
               FEET.


OPERATION REACH    XSECTION  19
```

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.10                        131.5                       357.82
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
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   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.09 WATERSHED INCHES;     377 CFS-HRS;      31.1 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  20

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.22                       288.1                        (RUNOFF)
      18.66                         7.5                        (RUNOFF)
      21.98                         6.0                        (RUNOFF)
      24.03                         5.2                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.50 WATERSHED INCHES;     317 CFS-HRS;      26.2 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  21

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.22                       317.4                        (NULL)
      12.88                       179.8                        (NULL)
      20.04                        17.1                        (NULL)
      20.58                        16.4                        (NULL)
      23.71                        13.0                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.24 WATERSHED INCHES;     693 CFS-HRS;      57.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  22

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.26                       431.1                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 .95 WATERSHED INCHES;    1209 CFS-HRS;      99.9 ACRE-
                 FEET.


 OPERATION REACH    XSECTION  23

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
```

```
      12.37                          411.2                          346.55

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .95 WATERSHED INCHES;    1206 CFS-HRS;      99.7 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  24
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.24                           6.1                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .60 WATERSHED INCHES;       8 CFS-HRS;        .6 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.37                         416.0                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .95 WATERSHED INCHES;    1214 CFS-HRS;     100.3 ACRE-
                  FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   1


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  3.19       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. = 2            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.35                         173.3                        (RUNOFF)
      20.13                           7.4                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .97 WATERSHED INCHES;     253 CFS-HRS;      20.9 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   2

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
```

```
      12.85                        103.7                        383.08

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                .97 WATERSHED INCHES;     253 CFS-HRS;      20.9 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   3
1
 TR20 ------------------------------------------------------------------- SCS
 -
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   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.24                         44.4                       (RUNOFF)
      24.03                          1.1                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               1.21 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
               FEET.


 OPERATION REACH    XSECTION   2

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.42                         37.7                        381.36
      24.13                          1.0                        380.35

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               1.20 WATERSHED INCHES;      52 CFS-HRS;       4.3 ACRE-
               FEET.


 OPERATION ADDHYD   XSECTION   4

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.76                        123.6                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               1.00 WATERSHED INCHES;     305 CFS-HRS;      25.2 ACRE-
               FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.40                         91.9                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               1.17 WATERSHED INCHES;     141 CFS-HRS;      11.6 ACRE-
               FEET.


 OPERATION ADDHYD   XSECTION   6
```

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.57                        188.5                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.05 WATERSHED INCHES;     446 CFS-HRS;      36.9 ACRE-
                FEET.


 OPERATION REACH    XSECTION   7
1
 TR20 ------------------------------------------------------------------- SCS
 -
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   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.88                        167.7                        369.64

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.05 WATERSHED INCHES;     446 CFS-HRS;      36.9 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   8

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.33                        106.9                      (RUNOFF)
      20.14                          4.0                      (RUNOFF)
      23.13                          3.3                      (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.14 WATERSHED INCHES;     149 CFS-HRS;      12.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.69                        214.5                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.07 WATERSHED INCHES;     595 CFS-HRS;      49.2 ACRE-
                FEET.


 OPERATION REACH    XSECTION  10

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      13.23                        174.4                        352.82

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.07 WATERSHED INCHES;     595 CFS-HRS;      49.1 ACRE-
                FEET.
```

```
 OPERATION RUNOFF   XSECTION  11

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.34                         128.7                       (RUNOFF)
       20.13                           4.8                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.19 WATERSHED INCHES;     182 CFS-HRS;      15.0 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  12
1
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    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       13.04                         208.1                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.10 WATERSHED INCHES;     776 CFS-HRS;      64.1 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  13

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.48                         188.8                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.31 WATERSHED INCHES;     319 CFS-HRS;      26.4 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  14

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.74                         153.2                        380.38

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.31 WATERSHED INCHES;     319 CFS-HRS;      26.4 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  15

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.32                          72.9                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
```

1.73 WATERSHED INCHES; 99 CFS-HRS; 8.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.65	189.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.39 WATERSHED INCHES; 418 CFS-HRS; 34.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

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PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	123.7	(RUNOFF)
15.84	3.5	(RUNOFF)
19.43	2.1	(RUNOFF)
19.74	2.0	(RUNOFF)
20.05	2.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.51 WATERSHED INCHES; 112 CFS-HRS; 9.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	212.0	(NULL)
12.56	213.2	(NULL)
20.00	12.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.50 WATERSHED INCHES; 518 CFS-HRS; 42.8 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.10	169.9	358.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.48 WATERSHED INCHES; 512 CFS-HRS; 42.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	380.2	(RUNOFF)
18.66	9.4	(RUNOFF)
20.66	8.3	(RUNOFF)
21.98	7.6	(RUNOFF)
24.03	6.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.98 WATERSHED INCHES; 420 CFS-HRS; 34.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	436.7	(NULL)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.66 WATERSHED INCHES; 926 CFS-HRS; 76.5 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.26	594.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.32 WATERSHED INCHES; 1670 CFS-HRS; 138.0 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	571.6	347.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.32 WATERSHED INCHES; 1667 CFS-HRS; 137.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	10.0	(RUNOFF)

```
   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  .92 WATERSHED INCHES;      12 CFS-HRS;       1.0 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.35                         579.5                      (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                1.31 WATERSHED INCHES;    1678 CFS-HRS;     138.7 ACRE-
                FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   2
1
 TR20 ------------------------------------------------------------------- SCS
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 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
   STARTING TIME =   .00       RAIN DEPTH =  4.91       RAIN DURATION =  1.00
   ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
   ALTERNATE NO. = 1           STORM NO. =10            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.33                        418.5                      (RUNOFF)
      20.13                         14.1                      (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.20 WATERSHED INCHES;     575 CFS-HRS;      47.5 ACRE-
                FEET.


 OPERATION REACH    XSECTION   2

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.60                        315.3                        383.97

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.20 WATERSHED INCHES;     575 CFS-HRS;      47.5 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   3

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                         96.3                      (RUNOFF)
      21.97                          2.2                      (RUNOFF)
```

```
      23.12                          2.0                        (RUNOFF)
      24.03                          1.9                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.55 WATERSHED INCHES;     111 CFS-HRS;       9.1 ACRE-
                FEET.


 OPERATION REACH    XSECTION   2

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.42                         80.6                         382.25
      20.20                          2.5 *                       380.41
      24.13                          1.9                         380.38
                                        * FIRST POINT OF FLAT PEAK
1
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   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.55 WATERSHED INCHES;     111 CFS-HRS;       9.1 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   4

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.56                         382.0                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.25 WATERSHED INCHES;     685 CFS-HRS;      56.6 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.38                         202.4                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.49 WATERSHED INCHES;     300 CFS-HRS;      24.8 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   6

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.49                         559.4                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.32 WATERSHED INCHES;     986 CFS-HRS;      81.5 ACRE-
                FEET.
```

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.70	498.0	370.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.32 WATERSHED INCHES; 986 CFS-HRS; 81.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	238.2	(RUNOFF)
20.13	7.4	(RUNOFF)
23.13	5.9	(RUNOFF)

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.45 WATERSHED INCHES; 320 CFS-HRS; 26.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	626.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.35 WATERSHED INCHES; 1306 CFS-HRS; 107.9 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.95	516.5	354.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.35 WATERSHED INCHES; 1305 CFS-HRS; 107.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	283.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)

2.53 WATERSHED INCHES; 386 CFS-HRS; 31.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.81	613.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.39 WATERSHED INCHES; 1691 CFS-HRS; 139.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	397.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 658 CFS-HRS; 54.3 ACRE-FEET.

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OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.70	331.9	381.44

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 658 CFS-HRS; 54.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.32	135.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.26 WATERSHED INCHES; 187 CFS-HRS; 15.4 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	403.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 844 CFS-HRS; 69.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	199.4	(RUNOFF)
15.84	5.5	(RUNOFF)
17.34	4.3	(RUNOFF)
20.05	3.2	(RUNOFF)
20.61	3.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.12 WATERSHED INCHES; 184 CFS-HRS; 15.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	397.3	(NULL)
12.56	441.9	(NULL)
19.98	21.9	(NULL)

1
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.87 WATERSHED INCHES; 991 CFS-HRS; 81.9 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.98	361.2	358.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.84 WATERSHED INCHES; 981 CFS-HRS; 81.1 ACRE-FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	670.8	(RUNOFF)
18.66	15.4	(RUNOFF)
20.11	14.2	(RUNOFF)
20.66	13.5	(RUNOFF)
21.98	12.3	(RUNOFF)
23.11	11.3	(RUNOFF)

```
      24.03                          10.5                          (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                3.57 WATERSHED INCHES;     757 CFS-HRS;      62.6 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  21

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                         824.2                         (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                3.08 WATERSHED INCHES;    1716 CFS-HRS;     141.8 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  22

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.27                        1265.3                         (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.62 WATERSHED INCHES;    3319 CFS-HRS;     274.3 ACRE-
                FEET.


 OPERATION REACH    XSECTION  23
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.36                        1244.1                          348.58

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.62 WATERSHED INCHES;    3314 CFS-HRS;     273.9 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  24

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.22                         24.7                          (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.13 WATERSHED INCHES;      27 CFS-HRS;       2.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
```

```
   ELEVATION(FEET)
      12.35                        1262.5                         (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  2.61 WATERSHED INCHES;    3340 CFS-HRS;     276.0 ACRE-
                  FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   3


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  7.23       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. =50            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
      12.32                          790.4                         (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.11 WATERSHED INCHES;    1076 CFS-HRS;      88.9 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   2
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
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    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
      12.51                          634.0                          384.89

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.11 WATERSHED INCHES;    1076 CFS-HRS;      88.9 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
      12.23                          172.1                         (RUNOFF)
      20.12                            4.1                         (RUNOFF)
      23.77                            3.0                         (RUNOFF)
      24.03                            3.0                         (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.57 WATERSHED INCHES;     199 CFS-HRS;      16.4 ACRE-
                  FEET.


 OPERATION REACH    XSECTION   2
```

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.57                        117.9                       383.17

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.57 WATERSHED INCHES;     199 CFS-HRS;      16.4 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   4

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.52                        749.5                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.18 WATERSHED INCHES;    1274 CFS-HRS;     105.3 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.37                        365.2                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.50 WATERSHED INCHES;     542 CFS-HRS;      44.8 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   6
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
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   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.47                       1078.3                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.27 WATERSHED INCHES;    1817 CFS-HRS;     150.1 ACRE-
                FEET.


 OPERATION REACH    XSECTION   7

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.65                        974.3                       372.14

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.27 WATERSHED INCHES;    1817 CFS-HRS;     150.1 ACRE-
                FEET.
```

```
 OPERATION RUNOFF   XSECTION   8

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.31                        432.9                       (RUNOFF)
       20.13                         12.0                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.45 WATERSHED INCHES;     580 CFS-HRS;      47.9 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION   9

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.57                       1218.8                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.31 WATERSHED INCHES;    2397 CFS-HRS;     198.1 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  10

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.85                       1044.0                        355.26

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.31 WATERSHED INCHES;    2397 CFS-HRS;     198.1 ACRE-
                  FEET.


 OPERATION RUNOFF   XSECTION  11

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.32                        509.4                       (RUNOFF)
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
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    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.54 WATERSHED INCHES;     694 CFS-HRS;      57.3 ACRE-
                  FEET.


 OPERATION ADDHYD   XSECTION  12

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
       12.73                       1242.7                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.36 WATERSHED INCHES;    3090 CFS-HRS;     255.4 ACRE-
                  FEET.
```

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.46	698.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.76 WATERSHED INCHES; 1160 CFS-HRS; 95.9 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.65	615.0	382.28

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.76 WATERSHED INCHES; 1160 CFS-HRS; 95.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	222.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.41 WATERSHED INCHES; 309 CFS-HRS; 25.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.58	740.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.84 WATERSHED INCHES; 1455 CFS-HRS; 120.2 ACRE-FEET.

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TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Subdivided
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09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall Distributions2.04TEST
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OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	300.6	(RUNOFF)
15.84	8.2	(RUNOFF)
17.34	6.3	(RUNOFF)
18.61	5.1	(RUNOFF)

```
      18.84                          5.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                6.29 WATERSHED INCHES;     281 CFS-HRS;      23.3 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  18

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.54                        803.4                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.85 WATERSHED INCHES;    1675 CFS-HRS;     138.4 ACRE-
                FEET.


 OPERATION REACH    XSECTION  19

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.92                        690.9                         359.63

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                4.81 WATERSHED INCHES;    1663 CFS-HRS;     137.5 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION  20

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                       1066.0                        (RUNOFF)
      18.66                         23.4                        (RUNOFF)
      20.11                         21.4                        (RUNOFF)
      20.66                         20.5                        (RUNOFF)
      21.98                         18.6                        (RUNOFF)
      23.11                         17.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.72 WATERSHED INCHES;    1213 CFS-HRS;     100.2 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  21
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                       1338.7                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.11 WATERSHED INCHES;    2846 CFS-HRS;     235.2 ACRE-
                FEET.
```

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.29	2250.7	(NULL)
12.65	2147.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.55 WATERSHED INCHES; 5757 CFS-HRS; 475.8 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	2238.6	350.08
12.70	2147.2	349.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.54 WATERSHED INCHES; 5750 CFS-HRS; 475.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	47.3	(RUNOFF)
20.66	1.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.03 WATERSHED INCHES; 52 CFS-HRS; 4.3 ACRE-FEET.

OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	2272.0	(NULL)
12.68	2160.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 5800 CFS-HRS; 479.3 ACRE-FEET.

1
TR20 ---------- SCS -
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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 4

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 25

```
   STARTING TIME =   .00       RAIN DEPTH =  8.47       RAIN DURATION =  1.00
   ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
   ALTERNATE NO. = 1           STORM NO. =99            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.32                         995.7                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.21 WATERSHED INCHES;    1362 CFS-HRS;     112.5 ACRE-
                FEET.


 OPERATION REACH    XSECTION   2

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.50                         814.9                        385.33

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.21 WATERSHED INCHES;    1362 CFS-HRS;     112.5 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   3

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.23                         212.8                       (RUNOFF)
      18.67                           5.3                       (RUNOFF)
      21.98                           4.2                       (RUNOFF)
      24.03                           3.6                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.70 WATERSHED INCHES;     248 CFS-HRS;      20.5 ACRE-
                FEET.


 OPERATION REACH    XSECTION   2

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.51                         154.0                        383.33

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.70 WATERSHED INCHES;     248 CFS-HRS;      20.5 ACRE-
                FEET.
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
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 OPERATION ADDHYD   XSECTION   4
```

```
   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.50                        968.9                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.28 WATERSHED INCHES;    1609 CFS-HRS;     133.0 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   5

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.37                        457.4                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.63 WATERSHED INCHES;     679 CFS-HRS;      56.1 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   6

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.46                       1389.4                       (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.38 WATERSHED INCHES;    2288 CFS-HRS;     189.1 ACRE-
                FEET.


 OPERATION REACH    XSECTION   7

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.63                       1251.6                        372.68

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.38 WATERSHED INCHES;    2288 CFS-HRS;     189.1 ACRE-
                FEET.


 OPERATION RUNOFF   XSECTION   8

   PEAK TIME(HRS)            PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.31                        539.7                       (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.57 WATERSHED INCHES;     727 CFS-HRS;      60.0 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION   9
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
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```

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.56 1566.1 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.42 WATERSHED INCHES; 3014 CFS-HRS; 249.1 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.87 1352.7 355.80

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.42 WATERSHED INCHES; 3013 CFS-HRS; 249.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.32 630.0 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.67 WATERSHED INCHES; 866 CFS-HRS; 71.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.77 1580.7 (NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.47 WATERSHED INCHES; 3879 CFS-HRS; 320.5 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.45 862.2 (RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.91 WATERSHED INCHES; 1440 CFS-HRS; 119.0 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS) PEAK DISCHARGE(CFS) PEAK ELEVATION(FEET)
12.63 771.1 382.65

1
TR20 ---------- SCS -
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.91 WATERSHED INCHES; 1439 CFS-HRS; 118.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.31	270.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.56 WATERSHED INCHES; 375 CFS-HRS; 31.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.57	926.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.94 WATERSHED INCHES; 1787 CFS-HRS; 147.7 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.14	353.6	(RUNOFF)
15.84	9.7	(RUNOFF)
17.34	7.4	(RUNOFF)
20.84	5.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.47 WATERSHED INCHES; 334 CFS-HRS; 27.6 ACRE-FEET.

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.54	1002.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.95 WATERSHED INCHES; 2057 CFS-HRS; 170.0 ACRE-FEET.

OPERATION REACH XSECTION 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.85	872.5	359.96

1

TR20 ---------- SCS
-
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.92 WATERSHED INCHES; 2044 CFS-HRS; 168.9 ACRE-
FEET.

OPERATION RUNOFF XSECTION 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.21	1270.7	(RUNOFF)
18.66	27.6	(RUNOFF)
20.11	25.3	(RUNOFF)
20.66	24.2	(RUNOFF)
21.98	22.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.87 WATERSHED INCHES; 1456 CFS-HRS; 120.3 ACRE-
FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	1683.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.23 WATERSHED INCHES; 3470 CFS-HRS; 286.8 ACRE-
FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	2787.2	(NULL)
12.69	2727.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.62 WATERSHED INCHES; 7120 CFS-HRS; 588.4 ACRE-
FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.36	2776.0	350.73
12.75	2726.0	350.67

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.62 WATERSHED INCHES; 7111 CFS-HRS; 587.7 ACRE-
FEET.

```
 OPERATION RUNOFF   XSECTION  24
1
 TR20 ------------------------------------------------------------------- SCS
 -
                Valley Mede Ultimate LU, Fair Cond, Subdivided
                VERSION
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   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.21                          59.9                        (RUNOFF)
      24.03                           1.0                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.11 WATERSHED INCHES;      66 CFS-HRS;       5.4 ACRE-
                FEET.


 OPERATION ADDHYD   XSECTION  25

   PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
   ELEVATION(FEET)
      12.36                       2818.2                        (NULL)
      12.74                       2740.7                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                5.61 WATERSHED INCHES;    7174 CFS-HRS;     592.9 ACRE-
                FEET.


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   5
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   SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
   A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
 F-FLAT TOP HYDROGRAPH   T-TRUNCATED HYDROGRAPH   R-RISING TRUNCATED
 HYDROGRAPH

 XSECTION/  STANDARD                                    PEAK DISCHARGE
 STRUCTURE   CONTROL    DRAINAGE   RUNOFF
 ------------------------------------
   ID      OPERATION     AREA     AMOUNT   ELEVATION   TIME     RATE    RATE
                        (SQ MI)    (IN)      (FT)      (HR)     (CFS)   (CSM)

 RAINFALL OF   2.64 inches AND  24.00 hr DURATION, BEGINS AT    .0 hrs.
 RAINTABLE NUMBER  5,    ARC 2
 MAIN TIME INCREMENT   .050 HOURS
```

ALTERNATE 1 STORM 1

XSECTION	1	RUNOFF	.41	.64	---	12.36	107	261.0
XSECTION	2	REACH	.41	.64	382.33	12.58	84	204.9
XSECTION	3	RUNOFF	.07	.83	---	12.25	30	428.6
XSECTION	2	REACH	.07	.83	381.13	12.40	24	342.9
XSECTION	4	ADDHYD	.47	.67	---	12.54	104	221.3
XSECTION	5	RUNOFF	.19	.80	---	12.41	60	315.8
XSECTION	6	ADDHYD	.66	.70	---	12.49	161	243.9
XSECTION	7	REACH	.66	.70	369.40	12.78	130	197.0
XSECTION	8	RUNOFF	.20	.78	---	12.34	70	350.0
XSECTION	9	ADDHYD	.86	.72	---	12.67	167	194.2
XSECTION	10	REACH	.86	.72	351.35	12.93	152	176.7
XSECTION	11	RUNOFF	.24	.82	---	12.35	86	358.3
XSECTION	12	ADDHYD	1.10	.74	---	12.78	188	170.9
XSECTION	13	RUNOFF	.38	.92	---	12.50	129	339.5
XSECTION	14	REACH	.38	.92	378.90	12.64	121	318.4
XSECTION	15	RUNOFF	.09	1.28	---	12.33	53	588.9
XSECTION	16	ADDHYD	.47	.99	---	12.57	154	327.7
XSECTION	17	RUNOFF	.07	2.00	---	12.14	99	1414.3
XSECTION	18	ADDHYD	.54	1.10	---	12.53	177	327.8
XSECTION	19	REACH	.54	1.09	357.82	13.10	132	244.4
XSECTION	20	RUNOFF	.33	1.50	---	12.22	288	872.7
XSECTION	21	ADDHYD	.86	1.24	---	12.22	317	368.6
XSECTION	22	ADDHYD	1.96	.95	---	12.26	431	219.9
XSECTION	23	REACH	1.96	.95	346.55	12.37	411	209.7
XSECTION	24	RUNOFF	.02	.60	---	12.24	6	300.0
XSECTION	25	ADDHYD	1.98	.95	---	12.37	416	210.1

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A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 3.19 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 2

XSECTION	1	RUNOFF	.41	.97	---	12.35	173	422.0
XSECTION	2	REACH	.41	.97	383.08	12.85	104	253.7

XSECTION	3	RUNOFF	.07	1.21	---	12.24	44	628.6
XSECTION	2	REACH	.07	1.20	381.36	12.42	38	542.9
XSECTION	4	ADDHYD	.47	1.00	---	12.76	124	263.8
XSECTION	5	RUNOFF	.19	1.17	---	12.40	92	484.2
XSECTION	6	ADDHYD	.66	1.05	---	12.57	188	284.8
XSECTION	7	REACH	.66	1.05	369.64	12.88	168	254.5
XSECTION	8	RUNOFF	.20	1.14	---	12.33	107	535.0
XSECTION	9	ADDHYD	.86	1.07	---	12.69	214	248.8
XSECTION	10	REACH	.86	1.07	352.82	13.23	174	202.3
XSECTION	11	RUNOFF	.24	1.19	---	12.34	129	537.5
XSECTION	12	ADDHYD	1.10	1.10	---	13.04	208	189.1
XSECTION	13	RUNOFF	.38	1.31	---	12.48	189	497.4
XSECTION	14	REACH	.38	1.31	380.38	12.74	153	402.6
XSECTION	15	RUNOFF	.09	1.73	---	12.32	73	811.1
XSECTION	16	ADDHYD	.47	1.39	---	12.65	190	404.3
XSECTION	17	RUNOFF	.07	2.51	---	12.14	124	1771.4
XSECTION	18	ADDHYD	.54	1.50	---	12.56	213	394.4
XSECTION	19	REACH	.54	1.48	358.06	13.10	170	314.8
XSECTION	20	RUNOFF	.33	1.98	---	12.21	380	1151.5
XSECTION	21	ADDHYD	.86	1.66	---	12.23	437	508.1
XSECTION	22	ADDHYD	1.96	1.32	---	12.26	594	303.1
XSECTION	23	REACH	1.96	1.32	347.07	12.36	572	291.8

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A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 24	RUNOFF	.02	.92	---	12.23	10	500.0
XSECTION 25	ADDHYD	1.98	1.31	---	12.35	580	292.9

RAINFALL OF 4.91 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE	1	STORM	10					
XSECTION	1	RUNOFF	.41	2.20	---	12.33	418	1019.5
XSECTION	2	REACH	.41	2.20	383.97	12.60	315	768.3
XSECTION	3	RUNOFF	.07	2.55	---	12.23	96	1371.4

XSECTION	2	REACH	.07	2.55	382.25	12.42	81	1157.1
XSECTION	4	ADDHYD	.47	2.25	---	12.56	382	812.8
XSECTION	5	RUNOFF	.19	2.49	---	12.38	202	1063.2
XSECTION	6	ADDHYD	.66	2.32	---	12.49	559	847.0
XSECTION	7	REACH	.66	2.32	370.96	12.70	498	754.5
XSECTION	8	RUNOFF	.20	2.45	---	12.32	238	1190.0
XSECTION	9	ADDHYD	.86	2.35	---	12.61	626	727.9
XSECTION	10	REACH	.86	2.35	354.10	12.95	516	600.0
XSECTION	11	RUNOFF	.24	2.53	---	12.32	283	1179.2
XSECTION	12	ADDHYD	1.10	2.39	---	12.81	613	557.3
XSECTION	13	RUNOFF	.38	2.70	---	12.47	397	1044.7
XSECTION	14	REACH	.38	2.70	381.44	12.70	332	873.7
XSECTION	15	RUNOFF	.09	3.26	---	12.32	136	1511.1
XSECTION	16	ADDHYD	.47	2.81	---	12.62	403	857.4
XSECTION	17	RUNOFF	.07	4.12	---	12.14	199	2842.9
XSECTION	18	ADDHYD	.54	2.87	---	12.56	442	818.5
XSECTION	19	REACH	.54	2.84	358.85	12.98	361	668.5
XSECTION	20	RUNOFF	.33	3.57	---	12.21	671	2033.3
XSECTION	21	ADDHYD	.86	3.08	---	12.23	824	958.1
XSECTION	22	ADDHYD	1.96	2.62	---	12.27	1265	645.4
XSECTION	23	REACH	1.96	2.62	348.58	12.36	1244	634.7

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 10							
XSECTION 24	RUNOFF	.02	2.13	---	12.22	25	1250.0
XSECTION 25	ADDHYD	1.98	2.61	---	12.35	1263	637.9

RAINFALL OF 7.23 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE	1	STORM	50					
XSECTION	1	RUNOFF	.41	4.11	---	12.32	790	1926.8
XSECTION	2	REACH	.41	4.11	384.89	12.51	634	1546.3
XSECTION	3	RUNOFF	.07	4.57	---	12.23	172	2457.1
XSECTION	2	REACH	.07	4.57	383.17	12.57	118	1685.7

XSECTION	4	ADDHYD	.47	4.18	---	12.52	750	1595.7
XSECTION	5	RUNOFF	.19	4.50	---	12.37	365	1921.1
XSECTION	6	ADDHYD	.66	4.27	---	12.47	1078	1633.3
XSECTION	7	REACH	.66	4.27	372.14	12.65	974	1475.8
XSECTION	8	RUNOFF	.20	4.45	---	12.31	433	2165.0
XSECTION	9	ADDHYD	.86	4.31	---	12.57	1219	1417.4
XSECTION	10	REACH	.86	4.31	355.26	12.85	1044	1214.0
XSECTION	11	RUNOFF	.24	4.54	---	12.32	509	2120.8
XSECTION	12	ADDHYD	1.10	4.36	---	12.73	1243	1130.0
XSECTION	13	RUNOFF	.38	4.76	---	12.46	698	1836.8
XSECTION	14	REACH	.38	4.76	382.28	12.65	615	1618.4
XSECTION	15	RUNOFF	.09	5.41	---	12.31	223	2477.8
XSECTION	16	ADDHYD	.47	4.84	---	12.58	741	1576.6
XSECTION	17	RUNOFF	.07	6.29	---	12.14	301	4300.0
XSECTION	18	ADDHYD	.54	4.85	---	12.54	803	1487.0
XSECTION	19	REACH	.54	4.81	359.63	12.92	691	1279.6
XSECTION	20	RUNOFF	.33	5.72	---	12.21	1066	3230.3
XSECTION	21	ADDHYD	.86	5.11	---	12.23	1339	1557.0
XSECTION	22	ADDHYD	1.96	4.55	---	12.29	2251	1148.5
XSECTION	23	REACH	1.96	4.54	350.08	12.36	2239	1142.3

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 50							
XSECTION 24	RUNOFF	.02	4.03	---	12.21	47	2350.0
XSECTION 25	ADDHYD	1.98	4.53	---	12.36	2272	1147.5

RAINFALL OF 8.47 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE	1	STORM	99					
XSECTION	1	RUNOFF	.41	5.21	---	12.32	996	2429.3
XSECTION	2	REACH	.41	5.21	385.33	12.50	815	1987.8
XSECTION	3	RUNOFF	.07	5.70	---	12.23	213	3042.9
XSECTION	2	REACH	.07	5.70	383.33	12.51	154	2200.0
XSECTION	4	ADDHYD	.47	5.28	---	12.50	969	2061.7

XSECTION	5	RUNOFF	.19	5.63	---	12.37	457	2405.3
XSECTION	6	ADDHYD	.66	5.38	---	12.46	1389	2104.5
XSECTION	7	REACH	.66	5.38	372.68	12.63	1252	1897.0
XSECTION	8	RUNOFF	.20	5.57	---	12.31	540	2700.0
XSECTION	9	ADDHYD	.86	5.42	---	12.56	1566	1820.9
XSECTION	10	REACH	.86	5.42	355.80	12.87	1353	1573.3
XSECTION	11	RUNOFF	.24	5.67	---	12.32	630	2625.0
XSECTION	12	ADDHYD	1.10	5.47	---	12.77	1581	1437.3
XSECTION	13	RUNOFF	.38	5.91	---	12.45	862	2268.4
XSECTION	14	REACH	.38	5.91	382.65	12.63	771	2028.9
XSECTION	15	RUNOFF	.09	6.56	---	12.31	271	3011.1
XSECTION	16	ADDHYD	.47	5.94	---	12.57	927	1972.3
XSECTION	17	RUNOFF	.07	7.47	---	12.14	354	5057.1
XSECTION	18	ADDHYD	.54	5.95	---	12.54	1002	1855.6
XSECTION	19	REACH	.54	5.92	359.96	12.85	872	1614.8
XSECTION	20	RUNOFF	.33	6.87	---	12.21	1271	3851.5
XSECTION	21	ADDHYD	.86	6.23	---	12.23	1684	1958.1
XSECTION	22	ADDHYD	1.96	5.62	---	12.30	2787	1421.9
XSECTION	23	REACH	1.96	5.62	350.73	12.36	2776	1416.3

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SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 99

XSECTION	24	RUNOFF	.02	5.11	---	12.21	60	3000.0
XSECTION	25	ADDHYD	1.98	5.61	---	12.36	2818	1423.2

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION: INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS: Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 1 STORM 1											
2	3113		106	12.4	84	12.6	.88	1.34	.104	.789	.21
2	1954		30	12.3	24	12.4	.64	1.53	.073	.816	.30
7	2088		161	12.5	130	12.8	.91	1.16	.125	.806	.17
10	3852		167	12.6	152	12.9	.72	1.40	.059	.911	.20
14	2484		129	12.5	121	12.6	.81	1.47	.033	.940	.35
19	4092		176	12.6	132	13.1	1.06	1.12	.247	.746	.09
23	586		430	12.3	409	12.4	.94	1.14	.018	.952	.52
ALTERNATE 1 STORM 2											
2	3113		173	12.4	104	12.9	.84	1.14	.318	.598	.10
2	1954		44	12.3	37	12.4	.64	1.53	.062	.844	.33
7	2088		188	12.6	168	12.9	.72	1.22	.077	.890	.19
10	3852		214	12.7	174	13.3	.45	1.27	.155	.813	.09
14	2484		189	12.5	153	12.8	.75	1.23	.133	.812	.17
19	4092		213	12.6	170	13.1	1.08	1.11	.215	.797	.09
23	586		593	12.3	571	12.4	.75	1.19	.013	.963	.57
ALTERNATE 1 STORM 10											
2	3113		417	12.4	315	12.6	.31	1.40	.154	.757	.18
2	1954		96	12.3	80	12.4	.87	1.35	.084	.838	.31
7	2088		559	12.5	498	12.7	.58	1.28	.073	.890	.25

10	3852	626	12.6	516	12.9	.25	1.38	.137	.825	.13
14	2484	397	12.4	332	12.7	.57	1.27	.118	.836	.19
19	4092	442	12.6	361	13.0	.88	1.16	.192	.817	.10
23	586	1258	12.3	1244	12.4	.47	1.28	.008	.989	.68?

ALTERNATE 1 STORM 50

2	3113	787	12.3	634	12.5	.29	1.41	.117	.805	.21
2	1954	171	12.3	117	12.6	.75	1.17	.223	.688	.17

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1 STORM 50											
7	2088		1074	12.4	974	12.6	.62	1.26	.067	.907	.27
10	3852		1217	12.6	1044	12.9	.22	1.40	.109	.858	.16
14	2484		698	12.4	615	12.6	.37	1.36	.078	.881	.24
19	4092		803	12.6	690	12.9	.47	1.30	.135	.859	.14
23	586		2250	12.3	2236	12.4	.36	1.33	.006	.994	.77?
ALTERNATE 1 STORM 99											
2	3113		992	12.3	815	12.5	.29	1.41	.106	.822	.22
2	1954		211	12.3	154	12.5	.60	1.24	.181	.730	.19
7	2088		1389	12.4	1250	12.6	.71	1.24	.070	.900	

```
   .28
  10   3852          1566  12.6    1352  12.9    .22   1.40   .102   .863
  .17
  14   2484           862  12.4     770  12.6    .33   1.38   .067   .893
  .25

  19   4092          1002  12.6     872  12.9    .40   1.32   .121   .871
  .15
  23    586          2787  12.3    2774  12.4    .33   1.34   .005   .995
  .81?
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                            SUMMARY TABLE 3
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     STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
     QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.........
   ID               (SQ MI)          1         2        10        50        99


 XSECTION    1          .41
 ---------------------------
    ALTERNATE    1                107       173       418       790
    996

 XSECTION    2          .07
 ---------------------------
    ALTERNATE    1                 24        38        81       118
    154

 XSECTION    3          .07
 ---------------------------
    ALTERNATE    1                 30        44        96       172
    213

 XSECTION    4          .47
 ---------------------------
    ALTERNATE    1                104       124       382       750
    969

 XSECTION    5          .19
 ---------------------------
    ALTERNATE    1                 60        92       202       365
    457

 XSECTION    6          .66
 ---------------------------
    ALTERNATE    1                161       188       559      1078
    1389

 XSECTION    7          .66
 ---------------------------
    ALTERNATE    1                130       168       498       974
```

1252

XSECTION 8 .20

ALTERNATE 1 70 107 238 433
540

XSECTION 9 .86

ALTERNATE 1 167 214 626 1219
1566

XSECTION 10 .86

ALTERNATE 1 152 174 516 1044
1353

XSECTION 11 .24

ALTERNATE 1 86 129 283 509
630

XSECTION 12 1.10

ALTERNATE 1 188 208 613 1243
1581

XSECTION 13 .38

ALTERNATE 1 129 189 397 698
862

XSECTION 14 .38

1
TR20 ---------- SCS
-
Valley Mede Ultimate LU, Fair Cond, Subdivided
VERSION
09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
Distributions2.04TEST
07:08:53 SUMMARY, JOB NO. 1 PAGE
38

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	10	50	99
XSECTION 14	.38					
ALTERNATE 1		121	153	332	615	771
XSECTION 15	.09					
ALTERNATE 1		53	73	136	223	271

```
 XSECTION   16          .47
 ---------------------------
    ALTERNATE    1                154       190       403       741
    927

 XSECTION   17          .07
 ---------------------------
    ALTERNATE    1                 99       124       199       301
    354

 XSECTION   18          .54
 ---------------------------
    ALTERNATE    1                177       213       442       803
    1002

 XSECTION   19          .54
 ---------------------------
    ALTERNATE    1                132       170       361       691
    872

 XSECTION   20          .33
 ---------------------------
    ALTERNATE    1                288       380       671      1066
    1271

 XSECTION   21          .86
 ---------------------------
    ALTERNATE    1                317       437       824      1339
    1684

 XSECTION   22         1.96
 ---------------------------
    ALTERNATE    1                431       594      1265      2251
    2787

 XSECTION   23         1.96
 ---------------------------
    ALTERNATE    1                411       572      1244      2239
    2776

 XSECTION   24          .02
 ---------------------------
    ALTERNATE    1                  6        10        25        47
    60

 XSECTION   25         1.98
 ---------------------------
    ALTERNATE    1                416       580      1263      2272
    2818
1
 TR20 ------------------------------------------------------------------------ SCS
 -
                 Valley Mede Ultimate LU, Fair Cond, Subdivided
                 VERSION
 09/21/** 2, 10, 50, 100-year 24-hr storms NOAA C Rainfall
 Distributions2.04TEST



 END OF  1 JOBS IN THIS RUN
```

SCS TR-20, VERSION 2.04TEST
FILES

```
INPUT  = woods.dat                                , GIVEN DATA FILE
OUTPUT = woods.OUT                                , DATED 09/21/
**,07:08:53
```

FILES GENERATED - DATED 09/21/**,07:08:53

NONE!

TOTAL NUMBER OF WARNINGS = 0, MESSAGES = 0

*** TR-20 RUN COMPLETED ***

1

```
 ******************80-80 LIST OF INPUT DATA FOR TR-20
 HYDROLOGY******************

 JOB TR-20                                                        NOPLOTS
 TITLE     Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
 TITLE     July 30, 2016 storm
  2 XSECTN   002                  1.0      382.34
  8                            380.31        0.00        0.00
  8                            381.01       17.58        8.61
  8                            381.71       57.72       18.68
  8                            382.41       87.42       30.14
  8                            383.11      104.50       69.28
  8                            383.81      263.75      127.12
  8                            384.51      485.21      191.79
  8                            385.21      756.68      264.06
  8                            385.91     1097.04      343.49
  8                            386.61     1504.59      429.14
  8                            387.31     1935.42      521.71
  8                            388.01     2404.29      624.39
  8                            388.71     3010.65      736.45
  8                            389.41     3695.34      856.11
  8                            390.11     4464.50      983.39
  9 ENDTBL
  2 XSECTN   007                  1.0      368.32
  8                            365.53        0.00        0.00
  8                            366.13        2.41        1.85
  8                            366.73       13.26        5.96
  8                            367.33       32.81       11.12
  8                            367.93       56.86       17.33
  8                            368.53       58.83       27.09
  8                            369.13       87.92       53.94
  8                            369.73      182.33       92.49
  8                            370.33      312.70      139.48
  8                            370.93      486.35      195.36
  8                            371.53      699.83      260.83
  8                            372.13      968.75      336.90
  8                            372.73     1275.43      425.26
  8                            373.33     1614.79      529.26
  8                            373.93     2124.43      651.29
  8                            374.53     2756.14      782.07
  8                            375.13     3501.54      920.13
  8                            375.73     4298.02     1065.04
  9 ENDTBL
  2 XSECTN   010                  1.0      356.35
  8                            348.10        0.00        0.00
  8                            348.70        5.42        4.43
  8                            349.30       24.01       11.59
  8                            349.90       53.17       19.81
  8                            350.50       92.55       29.09
  8                            351.10      142.34       39.42
  8                            351.70      165.15       51.53
  8                            352.90      175.05      116.35
  8                            353.50      306.92      180.56
1

 **********************80-80 LIST OF INPUT DATA
 (CONTINUED)**********************
```

```
  8                          354.10      516.89      254.74
  8                          354.70      768.52      334.49
  8                          355.30     1065.05      420.62
  8                          355.90     1408.22      513.66
  8                          356.50     1807.31      613.67
  8                          357.10     2263.93      719.75
  8                          357.70     2774.44      831.81
  8                          358.30     3358.23      949.51
  9 ENDTBL
  2 XSECTN   014               1.0      379.93
  8                          376.15        0.00        0.00
  8                          377.05        8.36        4.84
  8                          377.95       50.12       15.58
  8                          378.85      120.19       28.42
  8                          380.65      159.08       88.20
  8                          381.55      355.19      161.67
  8                          382.45      675.00      251.36
  8                          383.35     1104.38      349.36
  8                          384.25     1615.02      456.11
  8                          385.15     2234.68      571.32
  8                          386.05     2973.63      693.77
  8                          386.95     3792.19      822.71
  8                          387.85     4704.26      958.82
  8                          388.75     5747.20     1101.81
  8                          389.65     6882.68     1250.71
  8                          390.55     8093.30     1406.32
  8                          391.45     9366.77     1569.98
  8                          392.35    10762.79     1742.42
  9 ENDTBL
  2 XSECTN   019               1.0      357.27
  8                          353.42        0.00        0.00
  8                          354.17        5.09        3.18
  8                          354.92       23.50        9.02
  8                          355.67       54.37       16.42
  8                          357.17       67.66       39.26
  8                          357.92      141.61       78.64
  8                          358.67      290.86      152.96
  8                          359.42      578.12      249.05
  8                          360.17      989.10      363.75
  8                          360.92     1520.99      494.51
  8                          361.67     2178.56      640.80
  8                          362.42     2981.64      802.19
  8                          363.17     3939.75      976.51
  8                          363.92     5049.66     1162.33
  8                          364.67     6325.86     1358.62
  8                          365.42     7734.95     1564.62
  9 ENDTBL
  2 XSECTN   023               1.0      344.26
  8                          340.73        0.00        0.00
  8                          341.48        9.64        6.59
1
```

**********80-80 LIST OF INPUT DATA
(CONTINUED)**********

```
  8                          342.23       39.11       16.56
  8                          342.98       85.34       28.29
  8                          344.48      146.45       57.99
  8                          345.23      162.66       92.62
  8                          345.98      273.72      148.97
  8                          346.73      453.62      224.13
  8                          347.48      714.72      314.46
```

```
  8                            348.23     1049.51      417.50
  8                            348.98     1470.76      532.23
  8                            349.73     1960.34      657.45
  8                            350.48     2559.41      793.58
  8                            351.23     3222.20      938.75
  8                            351.98     3947.27     1094.98
  9 ENDTBL
  5 RAINFL 5              0.05
  8               0.0000       0.0061      0.0061      0.0061      0.0061
  8               0.0061       0.0121      0.0242      0.0364      0.0424
  8               0.0424       0.0424      0.0424      0.0485      0.0606
  8               0.0667       0.0727      0.0727      0.0727      0.0727
  8               0.0788       0.0848      0.1030      0.1212      0.1333
  8               0.1576       0.1818      0.1879      0.2000      0.2182
  8               0.2242       0.2303      0.2424      0.2606      0.2909
  8               0.3212       0.3576      0.4061      0.4667      0.5394
  8               0.6061       0.6606      0.7030      0.7394      0.7576
  8               0.7758       0.7939      0.8182      0.8424      0.8788
  8               0.9091       0.9212      0.9333      0.9455      0.9515
  8               0.9576       0.9697      0.9758      0.9818      0.9818
  8               0.9818       0.9818      0.9818      0.9879      0.9879
  8               0.9879       0.9879      0.9939      0.9939      0.9939
  8               0.9939       0.9939      1.0000      1.0000      1.0000
  9 ENDTBL
  6 RUNOFF 1 001       1 0.4053      72.849       0.444      1         1  DA5
  6 REACH  3  02   1   2 3113                                  1         1
  6 RUNOFF 1 003       3 0.0673      77.021       0.303      1         1  DA6
  6 REACH  3  02   3   4 1954                                  1         1
  6 ADDHYD 4 004   2 4 1                                       1         1
  6 RUNOFF 1 005       2 0.1867      76.388       0.530      1         1  DA4
  6 ADDHYD 4 006   1 2 3                                       1         1
  6 REACH  3  07   3   4 2088                                  1         1
  6 RUNOFF 1 008       2 0.2020      75.944       0.428      1         1  DA3
  6 ADDHYD 4 009   4 2 3                                       1         1
  6 REACH  3  10   3   1 3852                                  1         1
  6 RUNOFF 1 011       2 0.2366      76.760       0.443      1         1  DA2
  6 ADDHYD 4 012   1 2 6                                       1         1
  6 RUNOFF 1 013       1 0.3775      78.713       0.667      1         1  DA10
  6 REACH  3  14   1   2 2484                                  1         1
  6 RUNOFF 1 015       3 0.0886      84.806       0.443      1         1  DA9
  6 ADDHYD 4 016   2 3 4                                       1         1
  6 RUNOFF 1 017       3 0.0693      94.066       0.151      1 1       1  DA8
  6 ADDHYD 4 018   4 3 2                                       1 1       1
1


 **********80-80 LIST OF INPUT DATA
 (CONTINUED)**********

  6 REACH  3 019   2   1 4092                                  1 1       1
  6 RUNOFF 1 020       2 0.3284      87.933       0.277      1         1  DA7
  6 ADDHYD 4 021   1 2 7                                       1         1
  6 ADDHYD 4 022   6 7 1                                       1         1
  6 REACH  3  23   1   2 586                                   1         1
  6 RUNOFF 1 024       3 0.0200      72.029       0.277      1         1  DA1
  6 ADDHYD 4 025   2 3 4                                       1         1
    ENDATA
  7 INCREM 6           0.06
  7 COMPUT 7 001   025   0.0                6.60         1.05 2  1   01
    ENDCMP 1
    ENDJOB 2

 **********END OF 80-80
```

```
 LIST*******************************
1
 TR20 ------------------------------------------------------------------- SCS
 -
          Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
          VERSION
 09/05/**                      July 30, 2016 storm
 2.04TEST
 20:30:52                    PASS   1   JOB NO.   1                      PAGE
 1



 EXECUTIVE CONTROL INCREM    MAIN TIME INCREMENT =   .060 HOURS


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  25
    STARTING TIME =   .00       RAIN DEPTH =  6.60       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .060 HOURS
    ALTERNATE NO. = 1           STORM NO. = 1            RAIN TABLE NO. = 5


 OPERATION RUNOFF   XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
        2.27                         1040.7                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   3.57 WATERSHED INCHES;     935 CFS-HRS;      77.3 ACRE-
                   FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
        2.47                          861.6                        385.43

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   3.57 WATERSHED INCHES;     935 CFS-HRS;      77.3 ACRE-
                   FEET.


 OPERATION RUNOFF   XSECTION   3

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
        2.17                          223.2                       (RUNOFF)
        2.56                          131.6                       (RUNOFF)
        3.73                            7.1                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   4.01 WATERSHED INCHES;     174 CFS-HRS;      14.4 ACRE-
                   FEET.


 OPERATION REACH    XSECTION   2

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
        2.42                          167.8                        383.39

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
```

4.01 WATERSHED INCHES; 174 CFS-HRS; 14.4 ACRE-FEET.

1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided VERSION
09/05/** July 30, 2016 storm
2.04TEST
20:30:52 PASS 1 JOB NO. 1 PAGE 2

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.46	1026.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.64 WATERSHED INCHES; 1109 CFS-HRS; 91.6 ACRE-FEET.

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.31	488.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.94 WATERSHED INCHES; 475 CFS-HRS; 39.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.42	1479.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.72 WATERSHED INCHES; 1584 CFS-HRS; 130.9 ACRE-FEET.

OPERATION REACH XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.65	1355.8	372.87

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.72 WATERSHED INCHES; 1584 CFS-HRS; 130.9 ACRE-FEET.

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.25	575.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.89 WATERSHED INCHES; 508 CFS-HRS; 42.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 9

1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
VERSION
09/05/** July 30, 2016 storm
2.04TEST
20:30:52 PASS 1 JOB NO. 1 PAGE
3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.61	1745.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.76 WATERSHED INCHES; 2091 CFS-HRS; 172.8 ACRE-FEET.

OPERATION REACH XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.87	1553.9	356.12

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.76 WATERSHED INCHES; 2091 CFS-HRS; 172.8 ACRE-FEET.

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.26	673.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.98 WATERSHED INCHES; 608 CFS-HRS; 50.2 ACRE-FEET.

OPERATION ADDHYD XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.75	1910.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.81 WATERSHED INCHES; 2699 CFS-HRS; 223.0 ACRE-FEET.

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.41	945.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.19 WATERSHED INCHES; 1021 CFS-HRS; 84.3 ACRE-FEET.

OPERATION REACH XSECTION 14

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.63	862.4	382.84

1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
VERSION
09/05/** July 30, 2016 storm
2.04TEST
20:30:52 PASS 1 JOB NO. 1 PAGE 4

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.19 WATERSHED INCHES; 1021 CFS-HRS; 84.3 ACRE-FEET.

OPERATION RUNOFF XSECTION 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.25	301.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.85 WATERSHED INCHES; 277 CFS-HRS; 22.9 ACRE-FEET.

OPERATION ADDHYD XSECTION 16

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
2.59	1058.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.31 WATERSHED INCHES; 1298 CFS-HRS; 107.2 ACRE-FEET.

OPERATION RUNOFF XSECTION 17

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
.49	8.2	(RUNOFF)
.80	20.8	(RUNOFF)
1.34	93.0	(RUNOFF)
1.48	71.9	(RUNOFF)
2.05	363.6	(RUNOFF)
2.52	170.1	(RUNOFF)
3.22	12.6	(RUNOFF)
3.42	13.2	(RUNOFF)
3.67	13.1	(RUNOFF)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1

HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .07 SQ.MI.

.36 CFS	.34	3.70	8.09	6.18	2.58	3.37	12.62	20.16
.84 CFS	19.12	11.34	4.62	6.70	16.84	38.93	59.43	70.83
1.32 CFS	92	85	69	71	56	49	69	110
1.80 CFS	148	190	252	325	363	341	287	220
2.28 CFS	156	127	129	147	170	146	103	79
2.76 CFS	57.59	51.06	50.69	40.06	22.20	8.57	3.79	10.38
3.24 CFS	12.18	5.25	7.26	13.23	7.41	2.76	4.96	12.95
3.72 CFS	8.46	3.14	1.18	.44				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.89 WATERSHED INCHES; 263 CFS-HRS; 21.8 ACRE-FEET.

1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
VERSION
09/05/** July 30, 2016 storm
2.04TEST
20:30:52 PASS 1 JOB NO. 1 PAGE 5

OPERATION ADDHYD XSECTION 18

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
.49	8.2	(NULL)
.80	21.0	(NULL)
1.39	118.5	(NULL)
2.54	1218.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
HRS MAIN TIME INCREMENT = .060 hr, DRAINAGE AREA = .54 SQ.MI.

.36 CFS	.34	3.70	8.09	6.18	2.58	3.37	12.65	20.31
.84 CFS	19.52	12.08	5.66	7.96	18.57	42.17	66.00	83.38
1.32 CFS	114	118	116	132	132	139	174	233
1.80 CFS	297	373	486	628	756	842	904	951
2.28 CFS	990	1043	1105	1166	1216	1204	1157	1110
2.76 CFS	1053	999	945	877	797	718	645	582
3.24 CFS	517	447	391	345	294	248	215	193
3.72 CFS	164	138	119	102	89	76	65	55
4.20 CFS	46.71	39.07	32.30	26.45	21.48	17.33	13.90	11.08
4.68 CFS	8.79	6.95	5.48	4.31	3.36	2.61	2.04	

```
     1.60
     5.16 CFS      1.25     .97     .76     .58     .45

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.52 WATERSHED INCHES;    1561 CFS-HRS;     129.0 ACRE-
                  FEET.


 OPERATION REACH    XSECTION  19

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
         .95                         10.2                         354.38
        2.80                       1044.1                         360.25

                    HYDROGRAPH POINTS FOR   ALTERNATE = 1,   STORM = 1
     HRS      MAIN TIME INCREMENT =  .060 hr,      DRAINAGE AREA =    .54
     SQ.MI.
      .42 CFS       .06     .73    2.09    2.85    2.80    2.90    4.70
      7.58
      .90 CFS      9.79   10.21    9.37    9.11   10.85   16.64   25.75
      36.39
     1.38 CFS        51      63      73      84      93     101     115
     136
     1.86 CFS       166     204     256     325     405     485     563
     635
     2.34 CFS       700     763     826     889     950     996    1026
     1042
     2.82 CFS      1044    1035    1019     992     956     913     863
     811
     3.30 CFS       757     700     643     588     533     481     432
     388
     3.78 CFS       346     308     273     241     213     188     165
     145
     4.26 CFS       127     111      96      83      72      62      53
     45
     4.74 CFS     38.48   32.66   27.64   23.33   19.64   16.50   13.83
     11.57
     5.22 CFS      9.66    8.06    6.71    5.58    4.63    3.84    3.18
     2.63
     5.70 CFS      2.17    1.79    1.47    1.21     .99     .81     .66
     .54
     6.18 CFS       .44

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  4.52 WATERSHED INCHES;    1561 CFS-HRS;     129.0 ACRE-
                  FEET.
1
 TR20 ------------------------------------------------------------------- SCS
 -
          Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
          VERSION
 09/05/**                     July 30, 2016 storm
 2.04TEST
 20:30:52                   PASS   1   JOB NO.   1                     PAGE
 6


 OPERATION RUNOFF   XSECTION  20

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK
    ELEVATION(FEET)
         .90                         19.9                        (RUNOFF)
```

1.47	247.5	(RUNOFF)
2.14	1387.6	(RUNOFF)
2.56	724.2	(RUNOFF)
3.44	44.6	(RUNOFF)
3.73	39.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.19 WATERSHED INCHES; 1101 CFS-HRS; 91.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 21

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
.91	29.8	(NULL)
1.53	320.3	(NULL)
2.17	1865.5	(NULL)
2.60	1673.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.77 WATERSHED INCHES; 2662 CFS-HRS; 220.0 ACRE-FEET.

OPERATION ADDHYD XSECTION 22

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
.91	29.8	(NULL)
2.28	3035.1	(NULL)
2.65	3511.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.23 WATERSHED INCHES; 5361 CFS-HRS; 443.0 ACRE-FEET.

OPERATION REACH XSECTION 23

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
.97	29.5	341.98
2.35	3033.3	351.02
2.71	3507.7	351.53

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.23 WATERSHED INCHES; 5361 CFS-HRS; 443.0 ACRE-FEET.

1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
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09/05/** July 30, 2016 storm
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OPERATION RUNOFF XSECTION 24

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK

ELEVATION(FEET)		
2.16	60.0	(RUNOFF)
2.57	36.3	(RUNOFF)
3.44	2.4	(RUNOFF)
3.73	2.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.49 WATERSHED INCHES; 45 CFS-HRS; 3.7 ACRE-FEET.

OPERATION ADDHYD XSECTION 25

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
.97	29.5	(NULL)
2.34	3073.9	(NULL)
2.71	3534.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.23 WATERSHED INCHES; 5406 CFS-HRS; 446.8 ACRE-FEET.

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1
1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
VERSION
09/05/** July 30, 2016 storm
2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 6.60 inches AND 3.60 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 5, ARC 2							
MAIN TIME INCREMENT .060 HOURS							
ALTERNATE 1 STORM 1							
XSECTION 1	RUNOFF	.41	3.57	---	2.27	1041	2539.0
XSECTION 2	REACH	.41	3.57	385.43	2.47	862	2102.4
XSECTION 3	RUNOFF	.07	4.01	---	2.17	223	3185.7
XSECTION 2	REACH	.07	4.01	383.39	2.42	168	2400.0
XSECTION 4	ADDHYD	.47	3.64	---	2.46	1027	2185.1
XSECTION 5	RUNOFF	.19	3.94	---	2.31	488	2568.4
XSECTION 6	ADDHYD	.66	3.72	---	2.42	1479	2240.9
XSECTION 7	REACH	.66	3.72	372.87	2.65	1356	2054.5

XSECTION	8	RUNOFF	.20	3.89	---	2.25	575	2875.0
XSECTION	9	ADDHYD	.86	3.76	---	2.61	1746	2030.2
XSECTION	10	REACH	.86	3.76	356.12	2.87	1554	1807.0
XSECTION	11	RUNOFF	.24	3.98	---	2.26	674	2808.3
XSECTION	12	ADDHYD	1.10	3.81	---	2.75	1910	1736.4
XSECTION	13	RUNOFF	.38	4.19	---	2.41	945	2486.8
XSECTION	14	REACH	.38	4.19	382.84	2.63	862	2268.4
XSECTION	15	RUNOFF	.09	4.85	---	2.25	302	3355.6
XSECTION	16	ADDHYD	.47	4.31	---	2.59	1058	2251.1
XSECTION	17	RUNOFF	.07	5.89	---	2.05	364	5200.0
XSECTION	18	ADDHYD	.54	4.52	---	2.54	1219	2257.4
XSECTION	19	REACH	.54	4.52	360.25	2.80	1044	1933.3
XSECTION	20	RUNOFF	.33	5.19	---	2.14	1388	4206.1
XSECTION	21	ADDHYD	.86	4.77	---	2.17	1865	2168.6
XSECTION	22	ADDHYD	1.96	4.23	---	2.65	3511	1791.3
XSECTION	23	REACH	1.96	4.23	351.53	2.71	3508	1789.8
XSECTION	24	RUNOFF	.02	3.49	---	2.16	60	3000.0
XSECTION	25	ADDHYD	1.98	4.23	---	2.71	3535	1785.4

1
TR20 ---------- SCS -
Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
VERSION
09/05/** July 30, 2016 storm
2.04TEST
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

			HYDROGRAPH INFORMATION				ROUTING PARAMETERS					
		FLOOD	INFLOW		OUTFLOW		Q-A EQ.				PEAK	ATT-
XSEC ID	REACH LENGTH	PLAIN LENGTH	PEAK	TIME	PEAK	TIME	COEFF	POWER	LENGTH FACTOR		RATIO Q/I	KIN COEFF
	(FT)	(FT)	(CFS)	(HR)	(CFS)	(HR)	(X)	(M)	(k*)		(Q*)	(C)
BASEFLOW IS .0 CFS												
ALTERNATE 1 STORM 1												
2	3113		1039	2.3	861	2.5	.29	1.41	.188		.829	.27
2	1954		223	2.2	167	2.4	.55	1.26	.284		.751	.23
7	2088		1477	2.4	1356	2.6	.74	1.23	.121		.918	.32
10	3852		1743	2.6	1554	2.9	.22	1.40	.190		.891	.21
14	2484		945	2.4	862	2.6	.32	1.39	.116		.913	

```
  .31

  19   4092          1216   2.5    1044   2.8    .38   1.34   .206   .858
  .18
  23    586          3511   2.6    3506   2.7    .33   1.34   .009   .999
  .93?
1
 TR20 ------------------------------------------------------------------- SCS
 -
          Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
          VERSION
 09/05/**                     July 30, 2016 storm
 2.04TEST
 20:30:52                     SUMMARY, JOB NO.   1                      PAGE
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                             SUMMARY TABLE 3
                             ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.........
   ID               (SQ MI)          1


 XSECTION    1          .41
 ---------------------------
    ALTERNATE    1                1041

 XSECTION    2          .07
 ---------------------------
    ALTERNATE    1                 168

 XSECTION    3          .07
 ---------------------------
    ALTERNATE    1                 223

 XSECTION    4          .47
 ---------------------------
    ALTERNATE    1                1027

 XSECTION    5          .19
 ---------------------------
    ALTERNATE    1                 488

 XSECTION    6          .66
 ---------------------------
    ALTERNATE    1                1479

 XSECTION    7          .66
 ---------------------------
    ALTERNATE    1                1356

 XSECTION    8          .20
 ---------------------------
    ALTERNATE    1                 575

 XSECTION    9          .86
 ---------------------------
    ALTERNATE    1                1746

 XSECTION   10          .86
```

```
 ---------------------------
    ALTERNATE    1                1554

 XSECTION   11          .24
 ---------------------------
    ALTERNATE    1                 674

 XSECTION   12         1.10
 ---------------------------
    ALTERNATE    1                1910

 XSECTION   13          .38
 ---------------------------
    ALTERNATE    1                 945

 XSECTION   14          .38
 ---------------------------
1
 TR20 ------------------------------------------------------------------------ SCS
 -
          Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
          VERSION
 09/05/**                      July 30, 2016 storm
 2.04TEST
 20:30:52                      SUMMARY, JOB NO.   1                        PAGE
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                              SUMMARY TABLE 3
                              ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.........
   ID               (SQ MI)          1


 XSECTION   14          .38
 ---------------------------
    ALTERNATE    1                 862

 XSECTION   15          .09
 ---------------------------
    ALTERNATE    1                 302

 XSECTION   16          .47
 ---------------------------
    ALTERNATE    1                1058

 XSECTION   17          .07
 ---------------------------
    ALTERNATE    1                 364

 XSECTION   18          .54
 ---------------------------
    ALTERNATE    1                1219

 XSECTION   19          .54
 ---------------------------
    ALTERNATE    1                1044

 XSECTION   20          .33
 ---------------------------
```

```
    ALTERNATE    1                1388

 XSECTION   21          .86
 ---------------------------
    ALTERNATE    1                1865

 XSECTION   22         1.96
 ---------------------------
    ALTERNATE    1                3511

 XSECTION   23         1.96
 ---------------------------
    ALTERNATE    1                3508

 XSECTION   24          .02
 ---------------------------
    ALTERNATE    1                  60

 XSECTION   25         1.98
 ---------------------------
    ALTERNATE    1                3535
1
 TR20 ---------------------------------------------------------------------- SCS
 -
          Valley Mede Ultimate LU, Fair Cond, Parcel WOODS Subdivided
          VERSION
 09/05/**                     July 30, 2016 storm
 2.04TEST




 END OF  1 JOBS IN THIS RUN
```

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = vmjulyw.dat , GIVEN DATA FILE
OUTPUT = vmjulyw.OUT , DATED 09/05/**,20:30:52

FILES GENERATED - DATED 09/05/**,20:30:52

NONE!

TOTAL NUMBER OF WARNINGS = 0, MESSAGES = 0

*** TR-20 RUN COMPLETED ***

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017

Plumtree Plumtree

Elevation (ft)

400
390
380
370
360
350
340

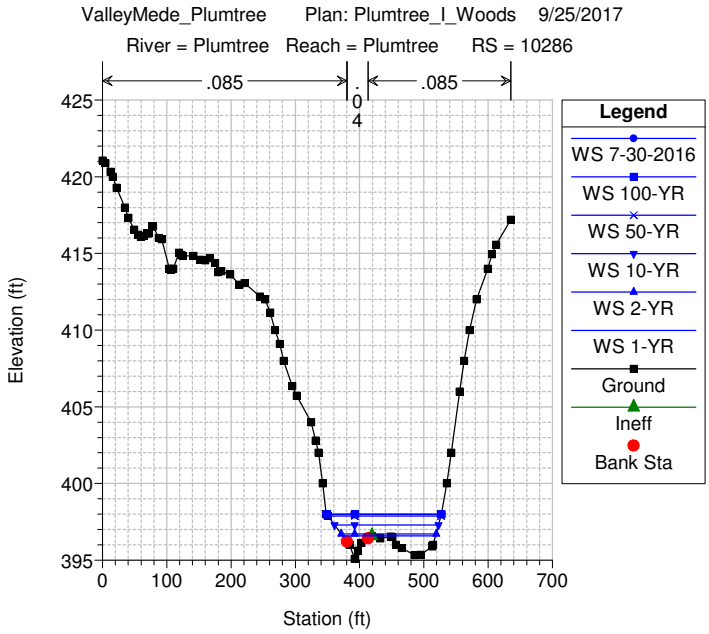
0
2000
4000
6000
8000
10000
12000

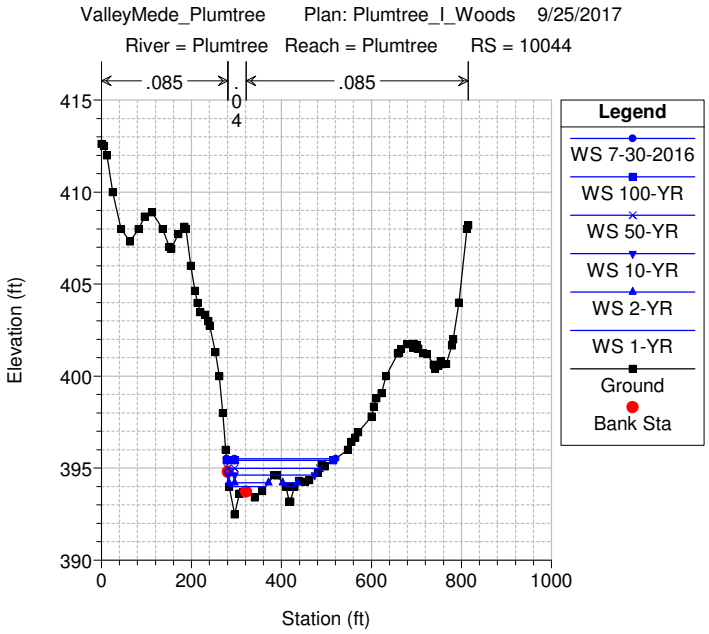
Main Channel Distance (ft)

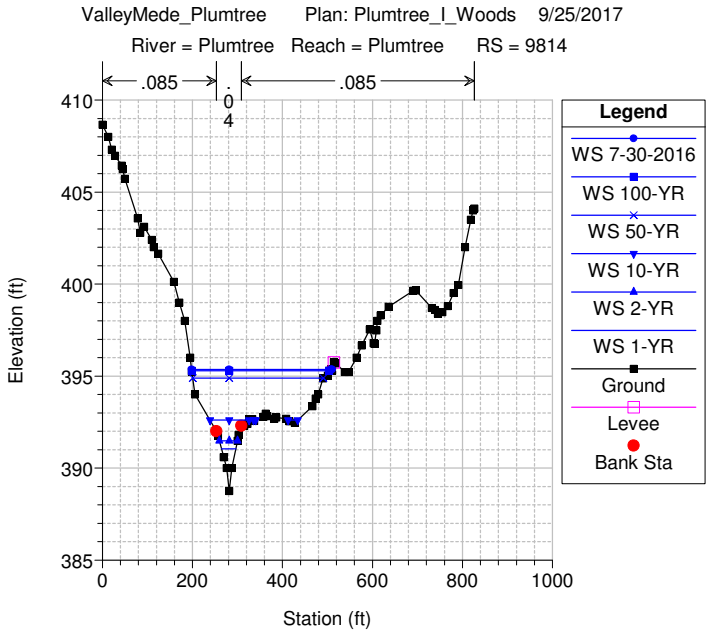
380 526 762 911 1124 1291 1463 1641 1830 1994 2153 2331 2485 2589 2759 2900 Frederick Rd 2978 3077 3179 3296 3428 3550 3688 3816 3930 4033 4185 4289 4400 US 40 4636 4745 4845 5000 Longview Dr 5107 5209 5323 5419 5560 5650 Brookmede Rd 5824 5926 6028 6122 6250 Hearthstone Rd 6350 6454 6568 6663 6766 6893 7030 7216 7367 7548 7800 7954 8094 8229 8374 8579 8753 8987 9196 9301 9398 9499 9650 Michaels Way 9814 10044 10286

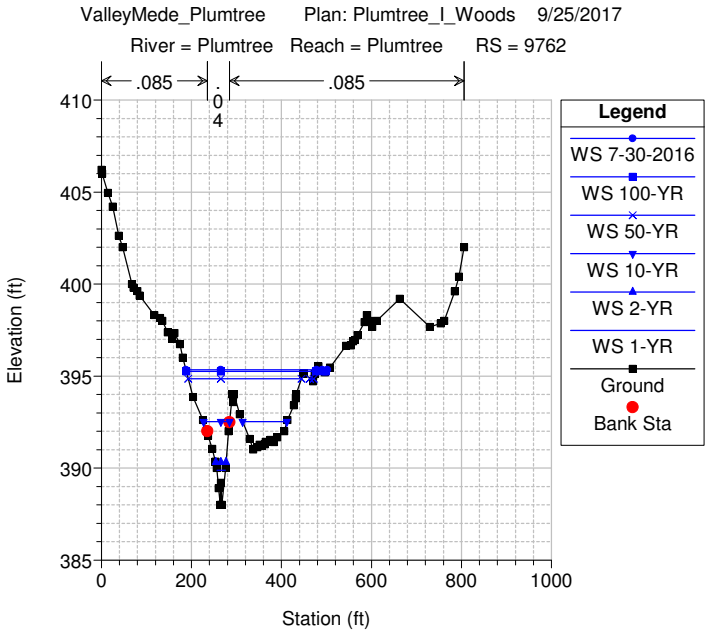
Legend

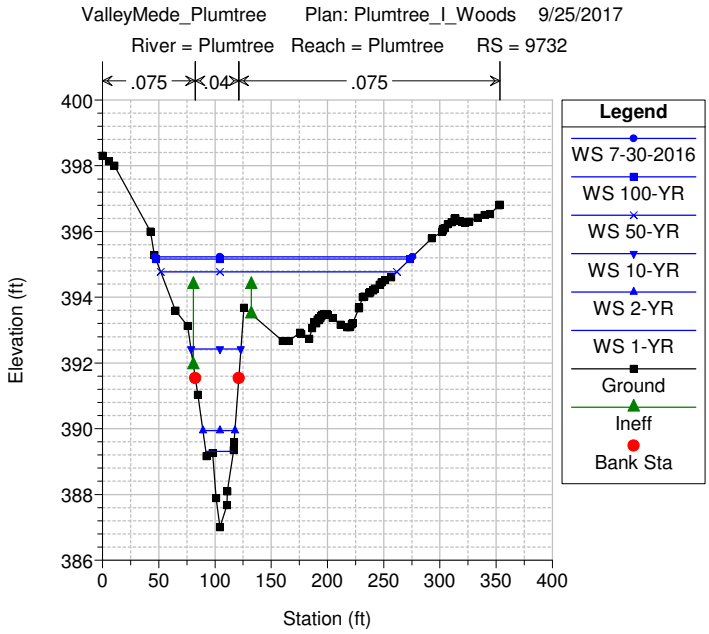
- WS 7-30-2016
- WS 100-YR
- WS 50-YR
- WS 10-YR
- WS 2-YR
- WS 1-YR
- Ground
- LOB
- ROB
- Right Levee

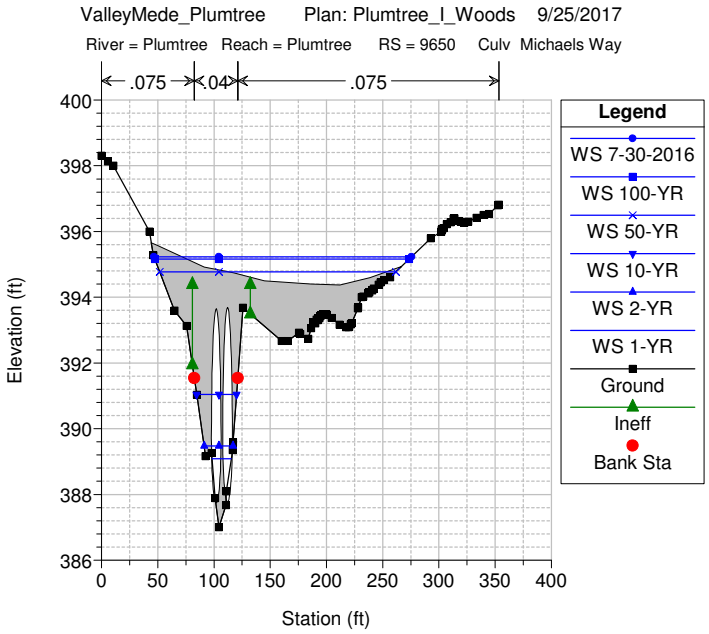

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 10286
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

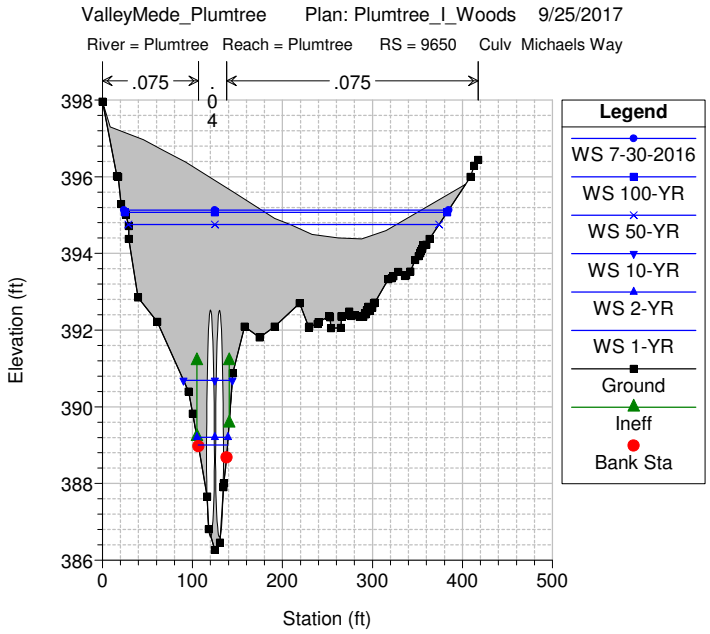

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 10044
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

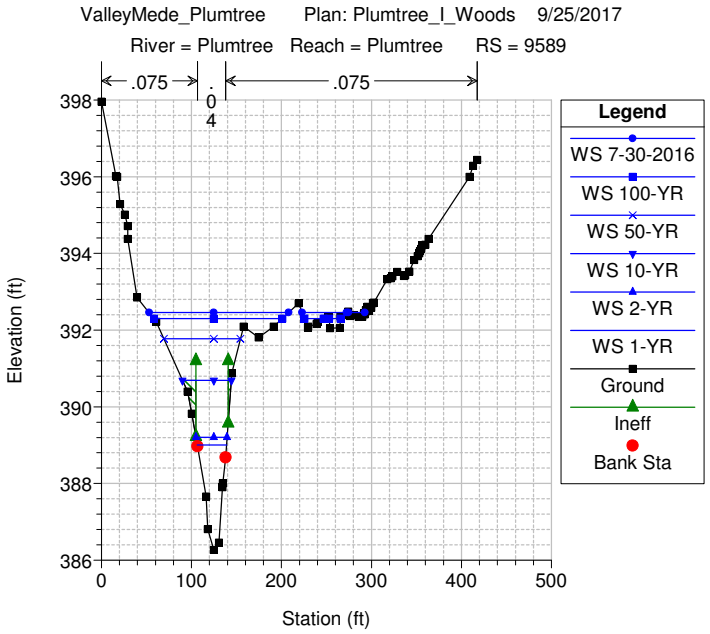

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 9814
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

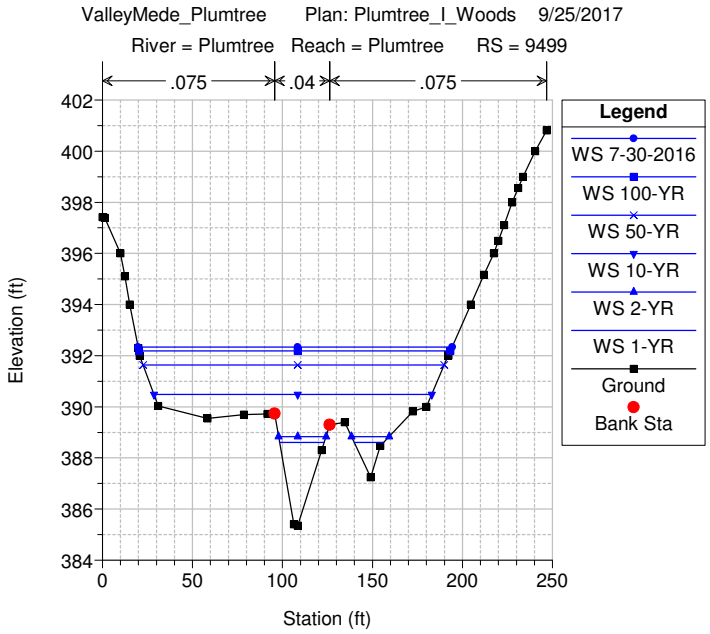

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 9762
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

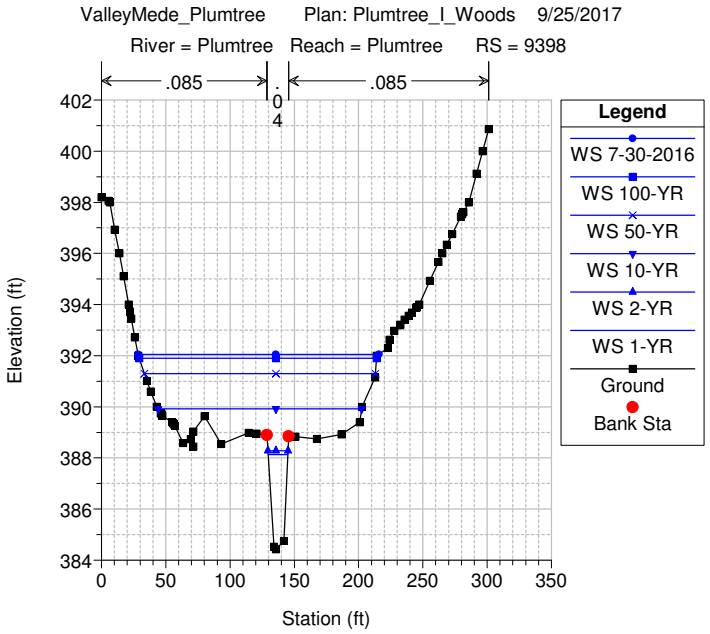

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 9732
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

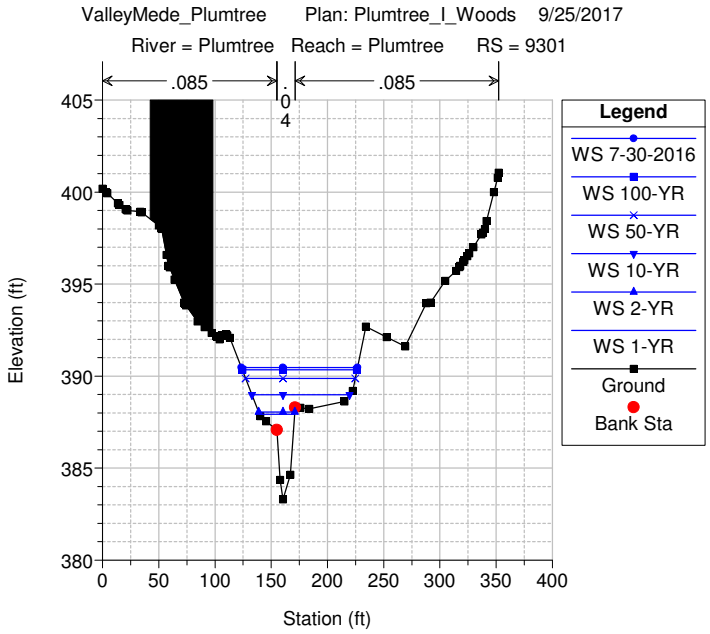

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

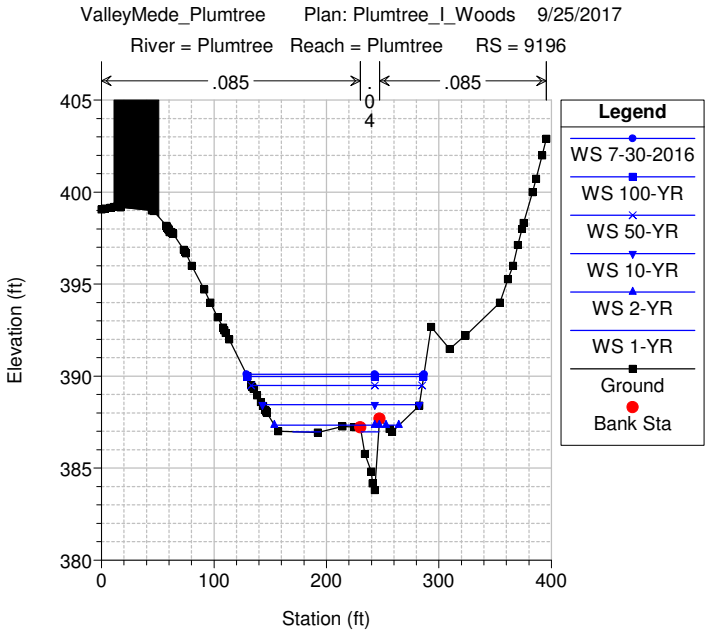

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 9650 Culv Michaels Way
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 9589
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 9499
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 9398
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 9301
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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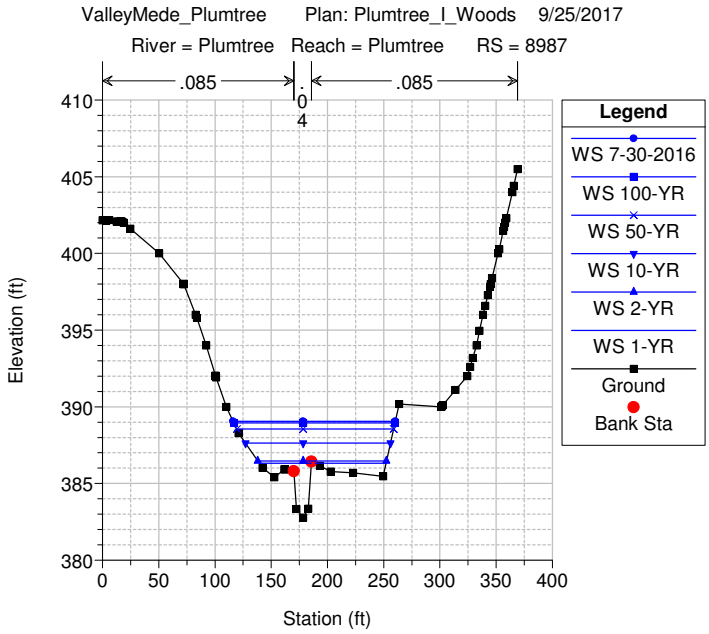
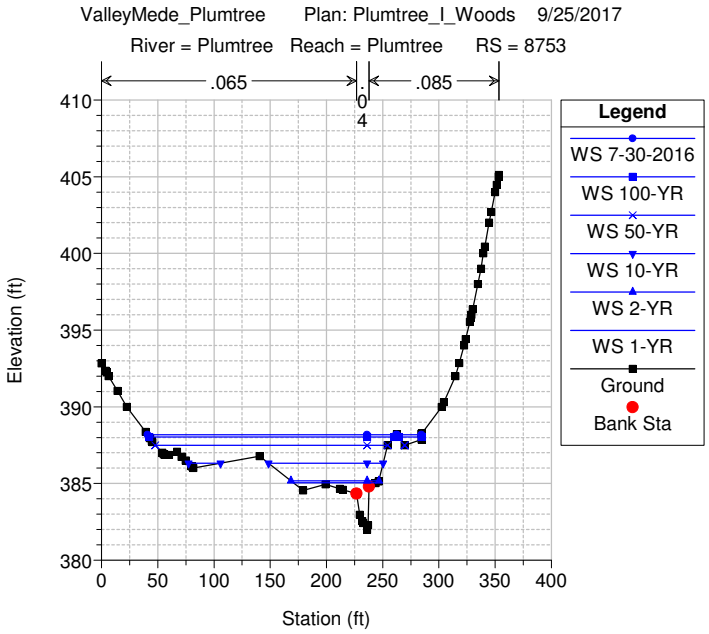
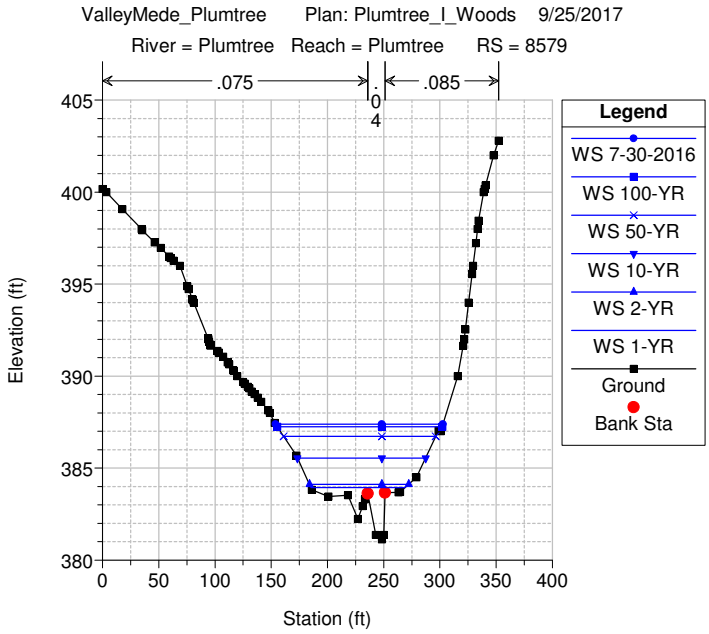
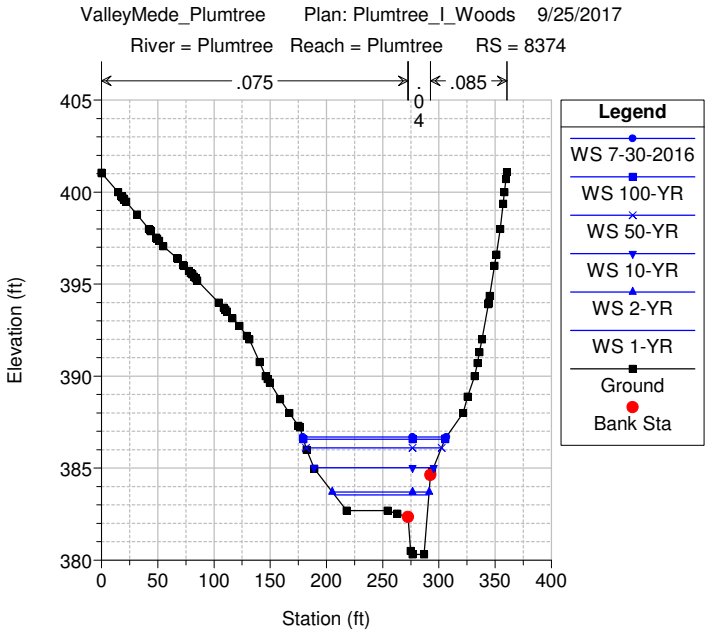
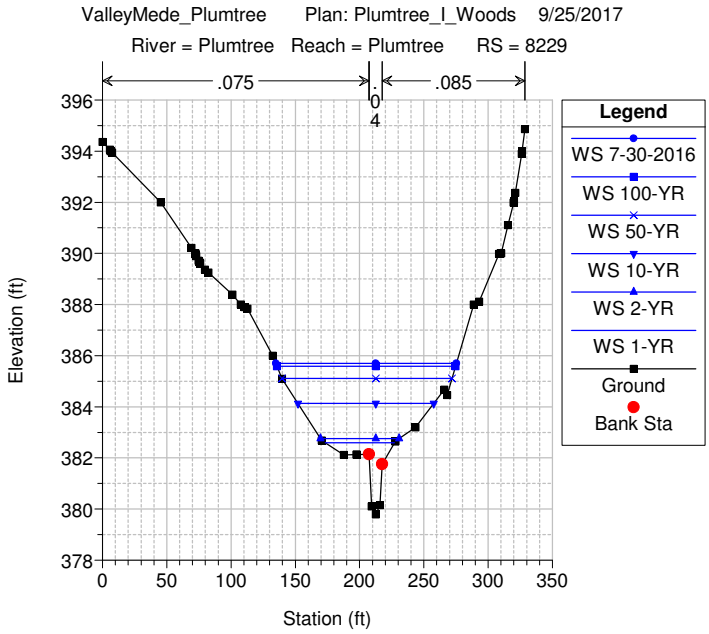
River = Plumtree Reach = Plumtree RS = 9196
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

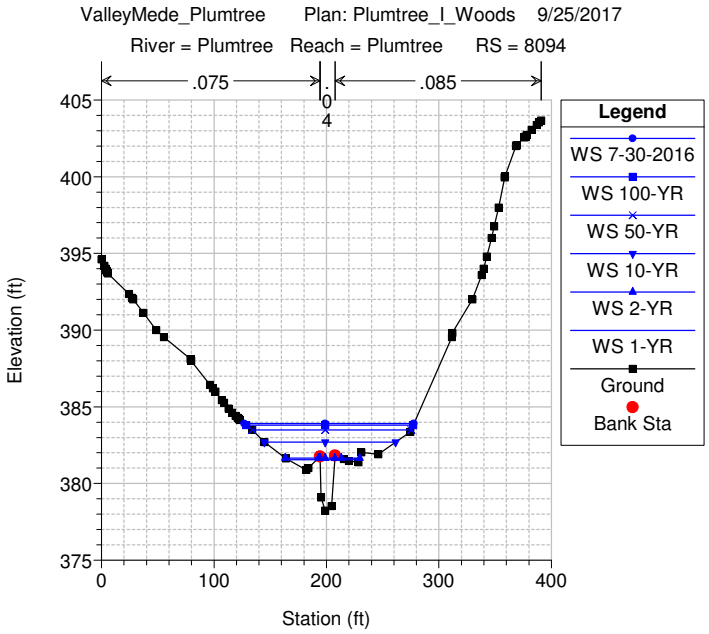

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 8987
.085
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

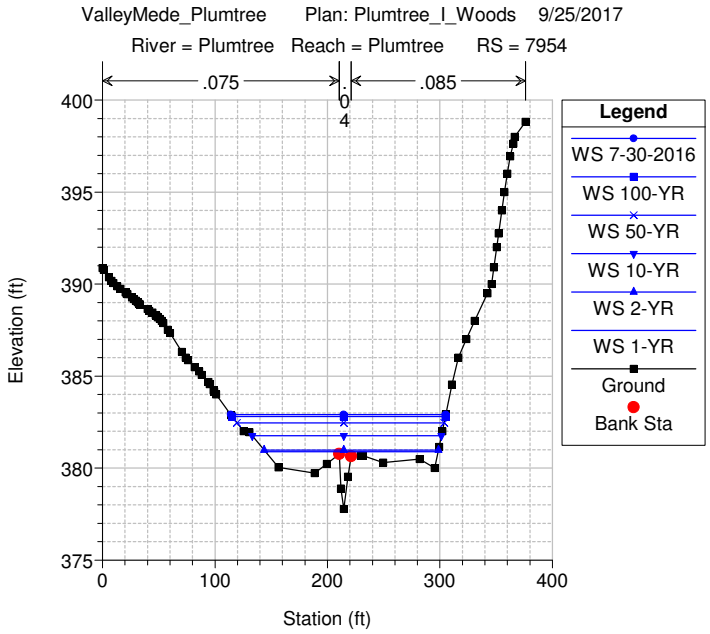

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 8753
.065
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

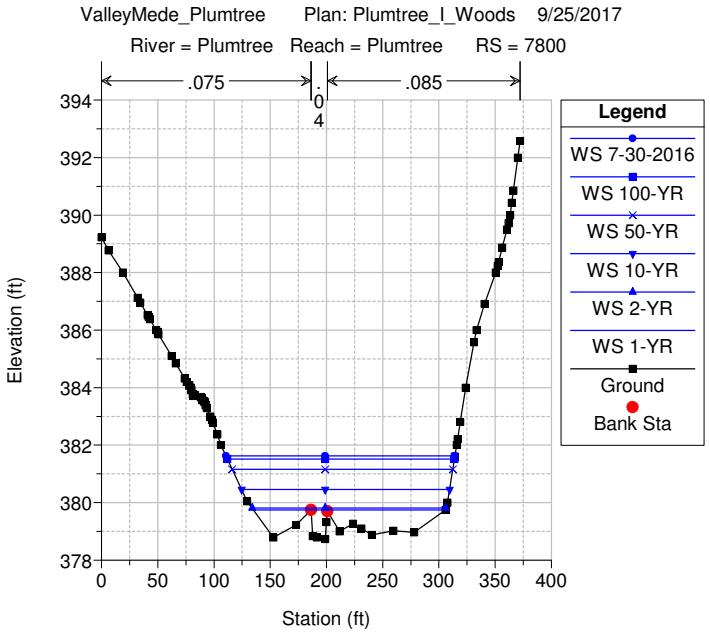

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 8579
.075
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

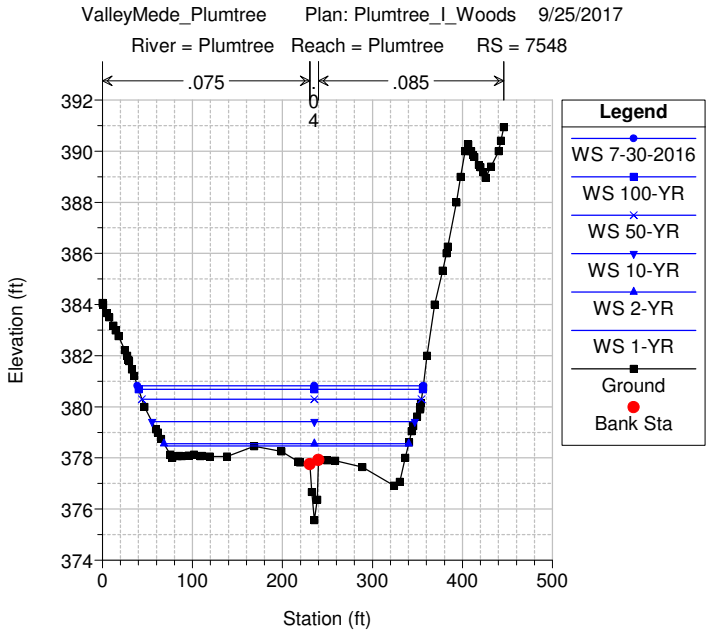

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 8374
.075
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

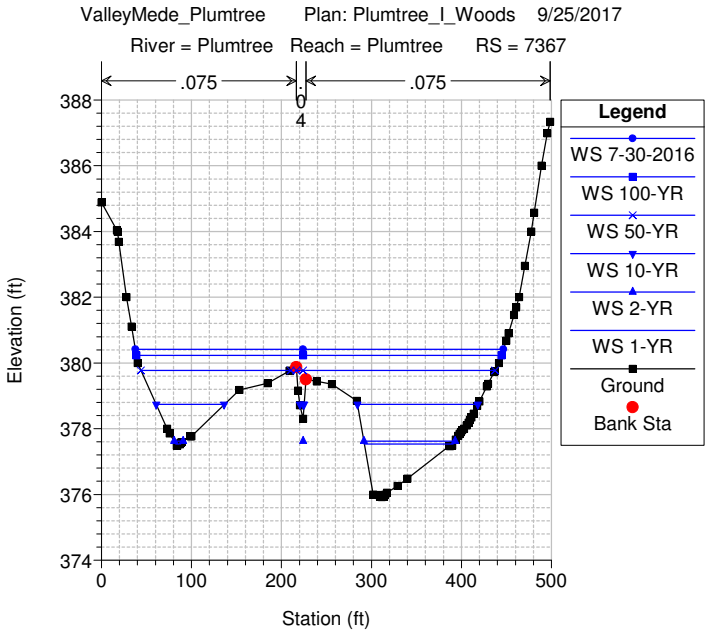

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 8229
.075
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

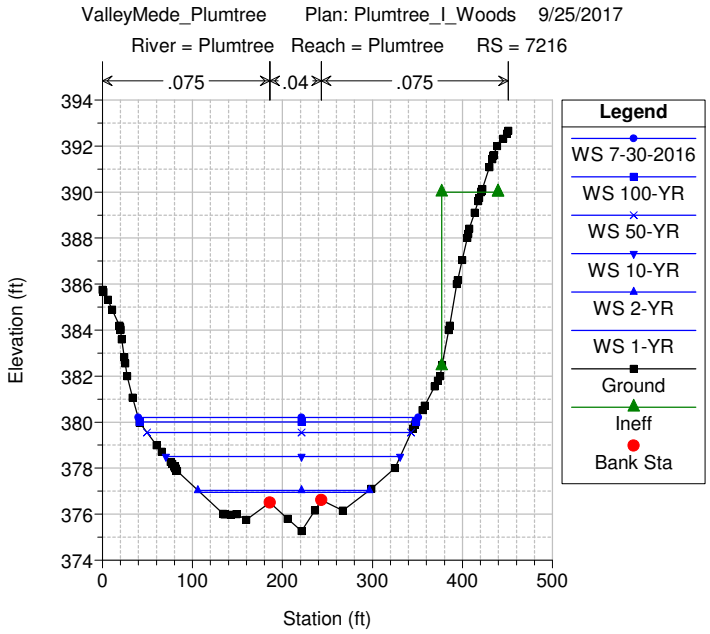

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 8094
.075
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

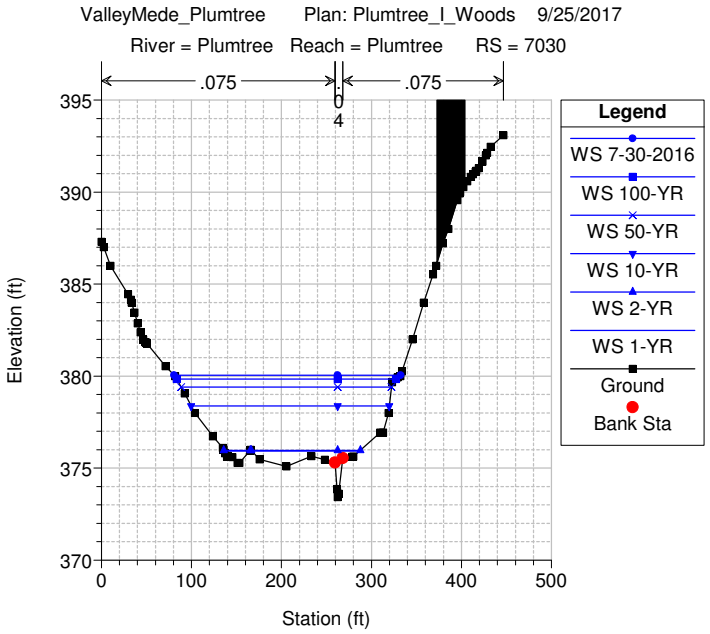

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 7954
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

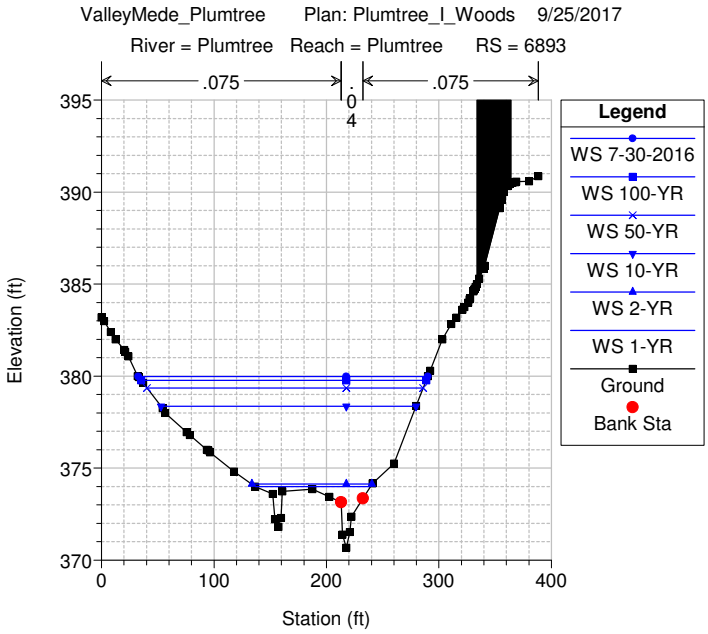

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 7800
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

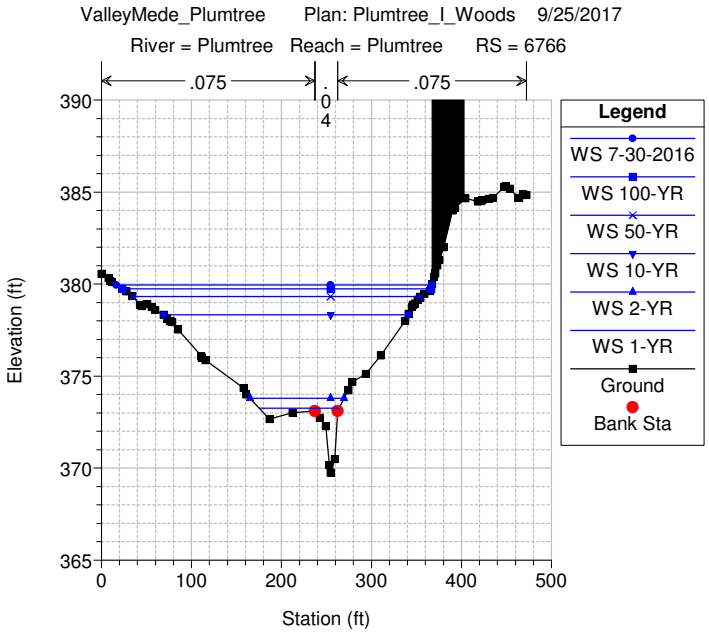

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 7548
.075
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

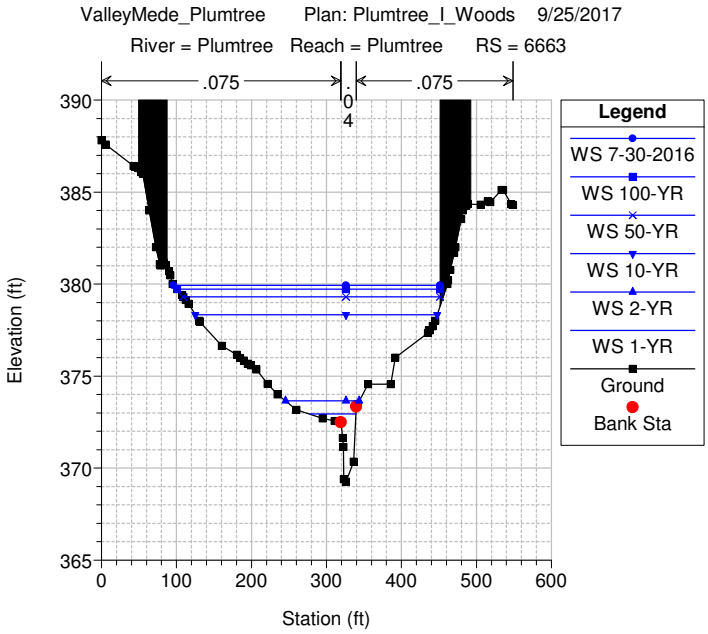

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 7367
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

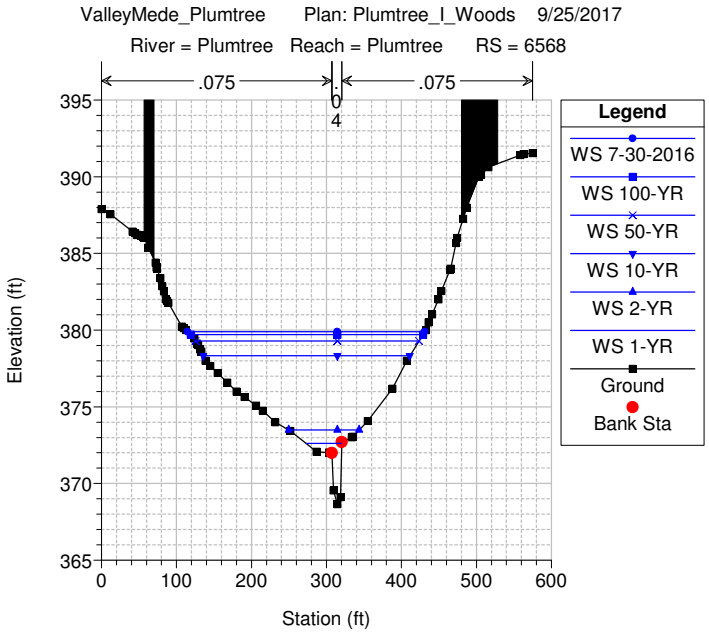

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 7216
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

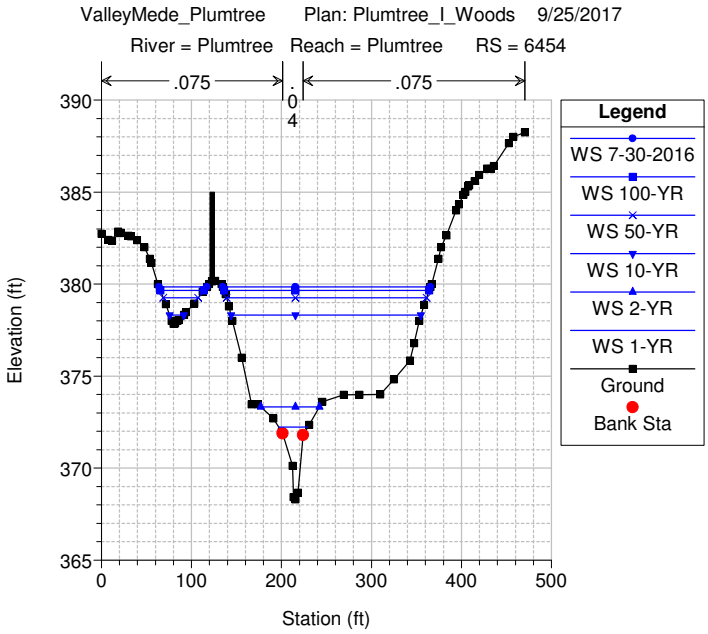

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 7030
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

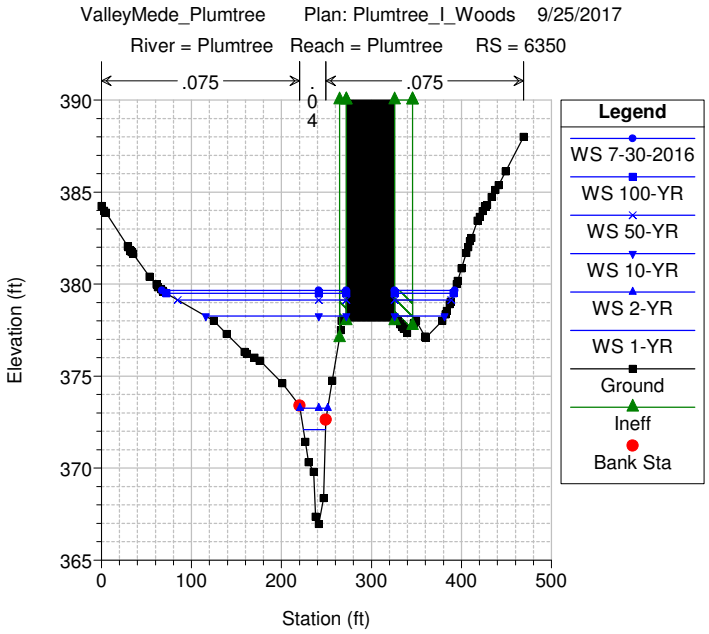

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6893
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

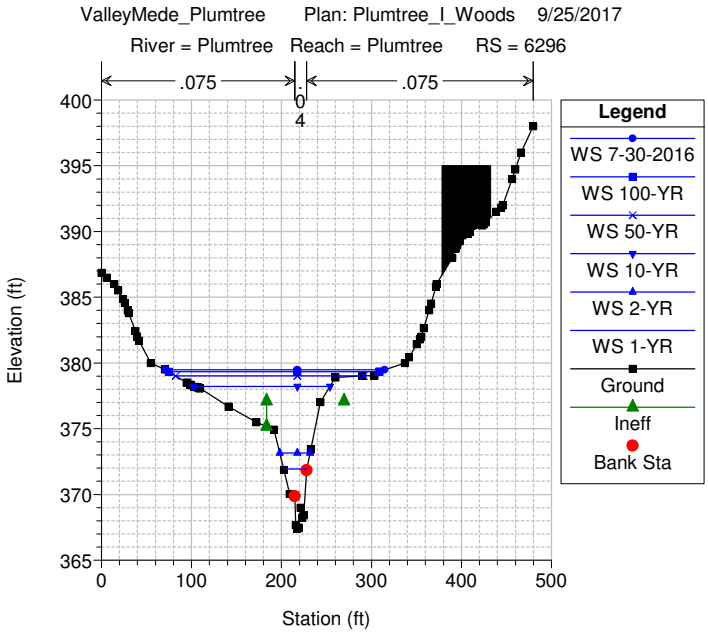

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6766
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

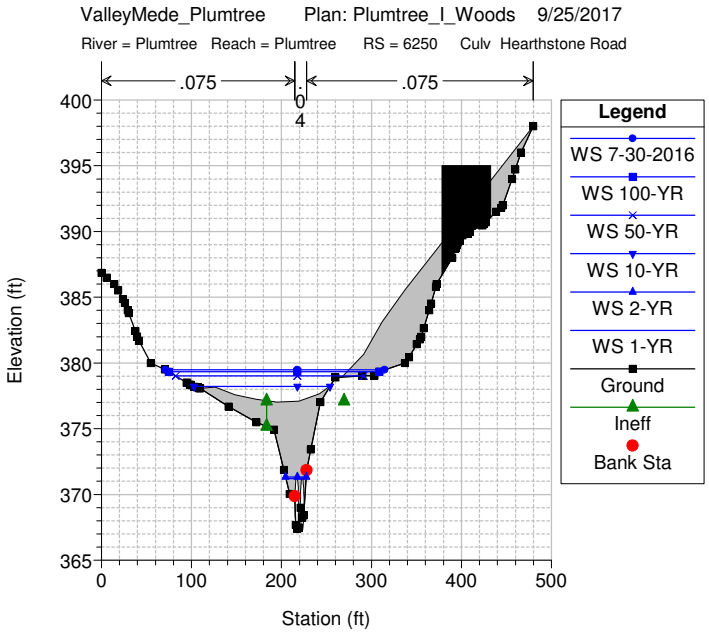

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6663
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

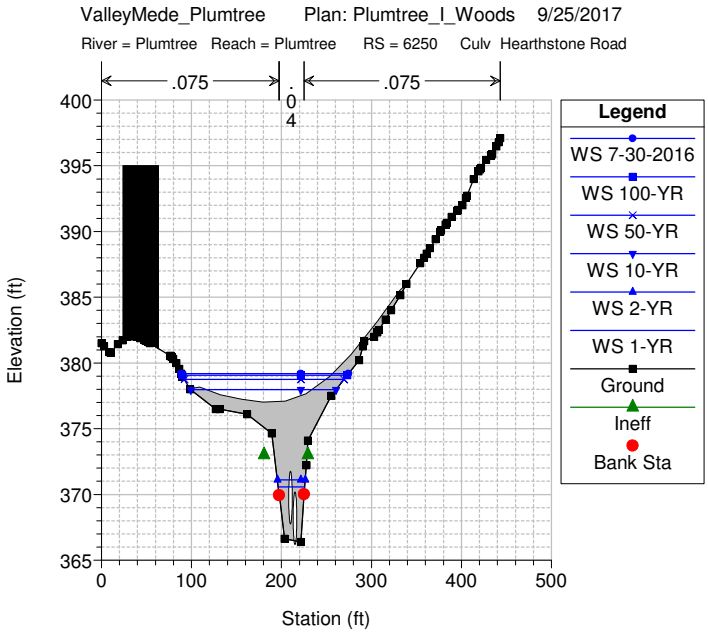

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6568
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

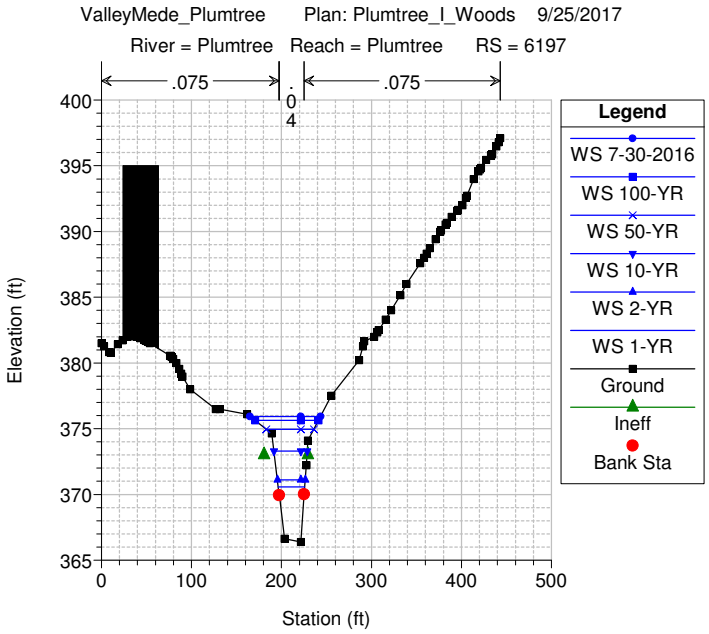

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6454
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

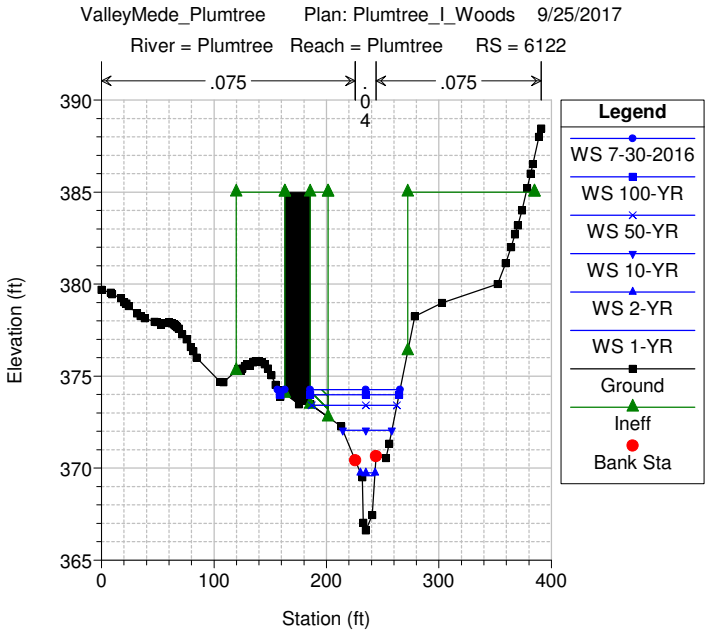

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6350
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

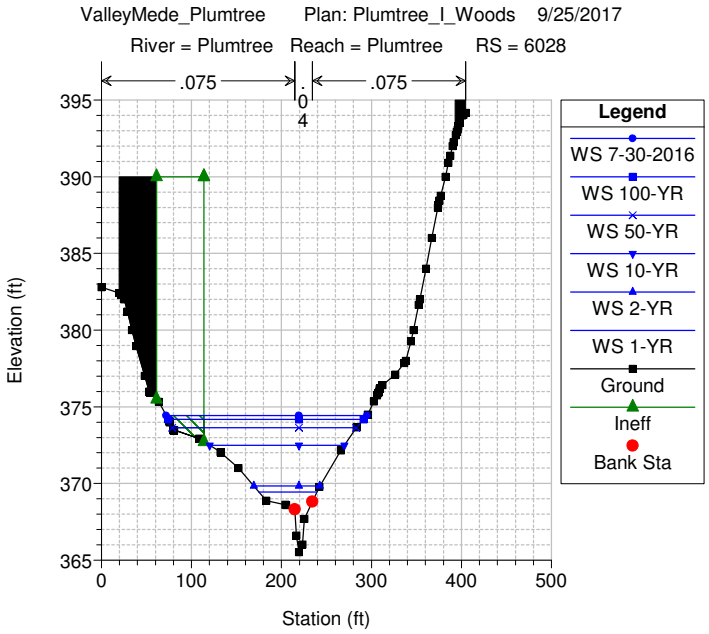

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6296
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

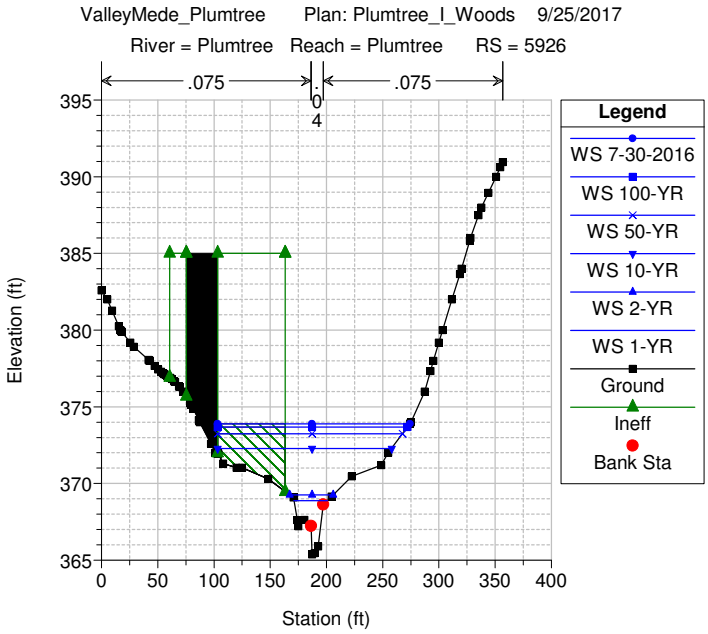

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

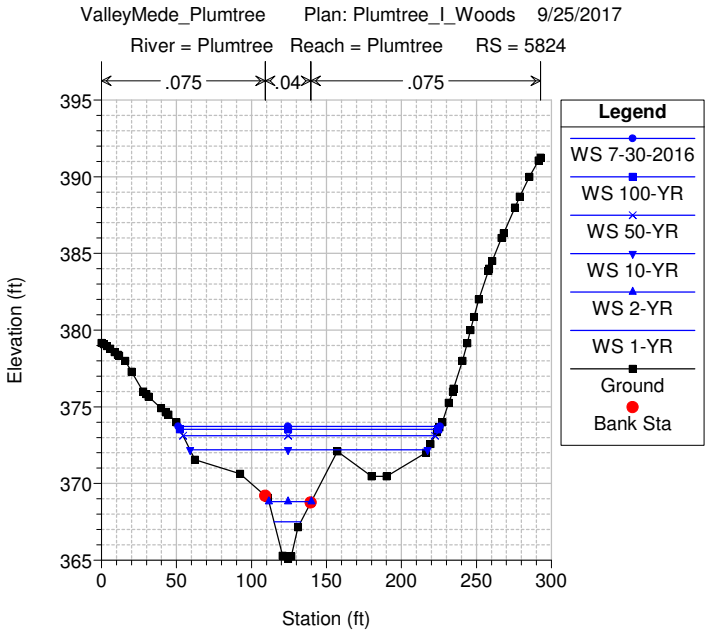

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6250 Culv Hearthstone Road
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

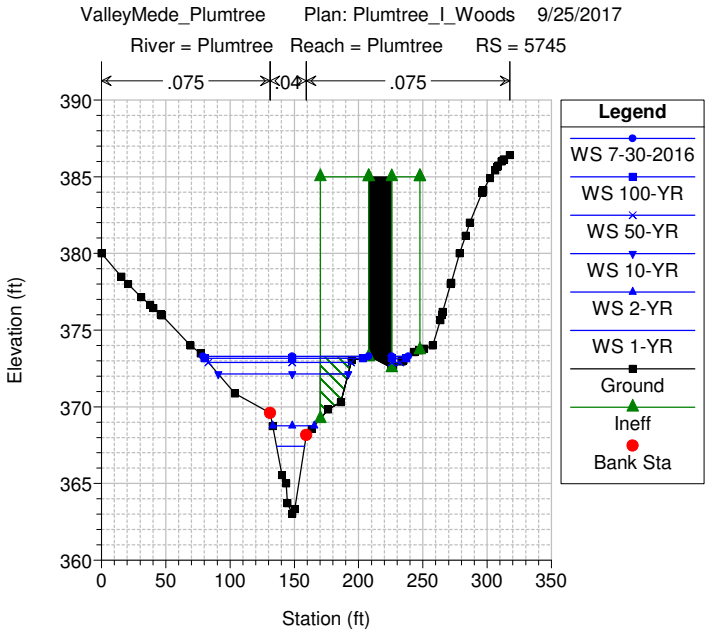

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6197
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

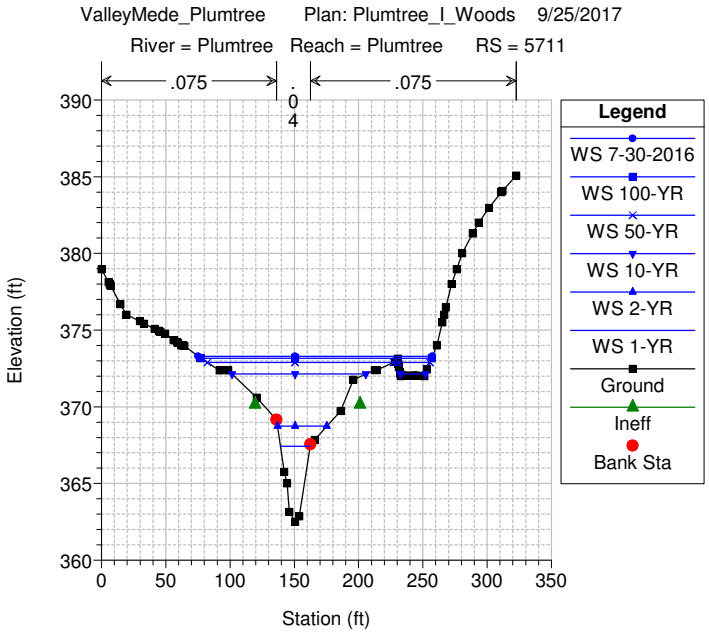

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6122
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

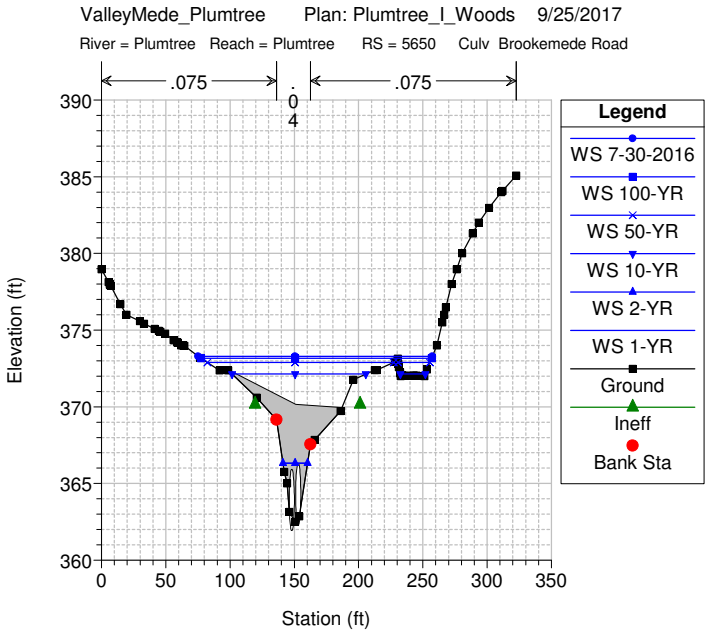

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 6028
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

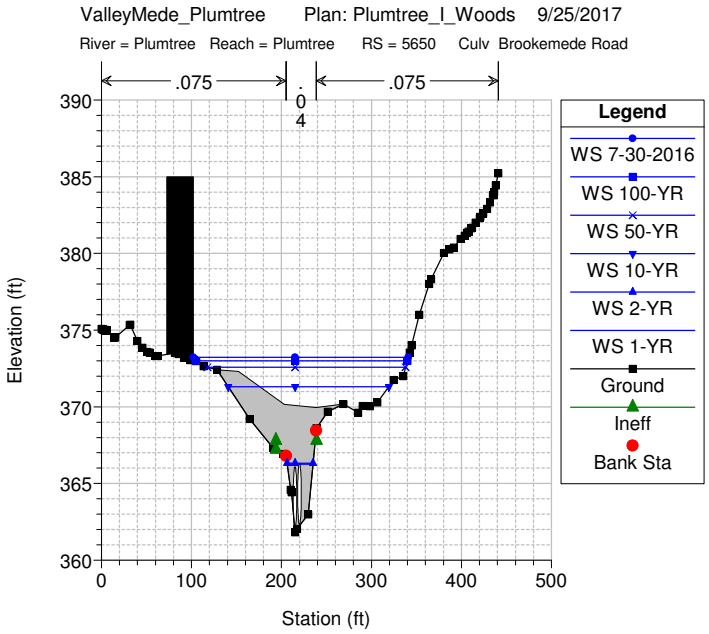

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5926
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

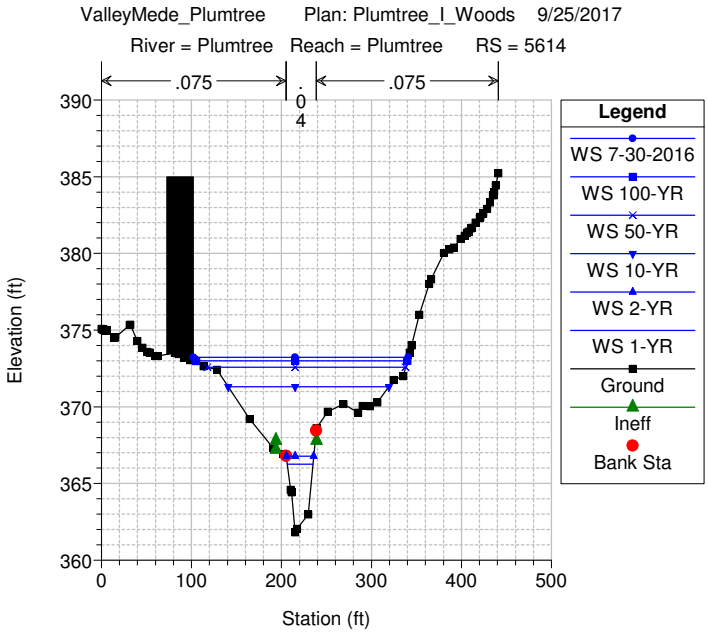

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5824
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

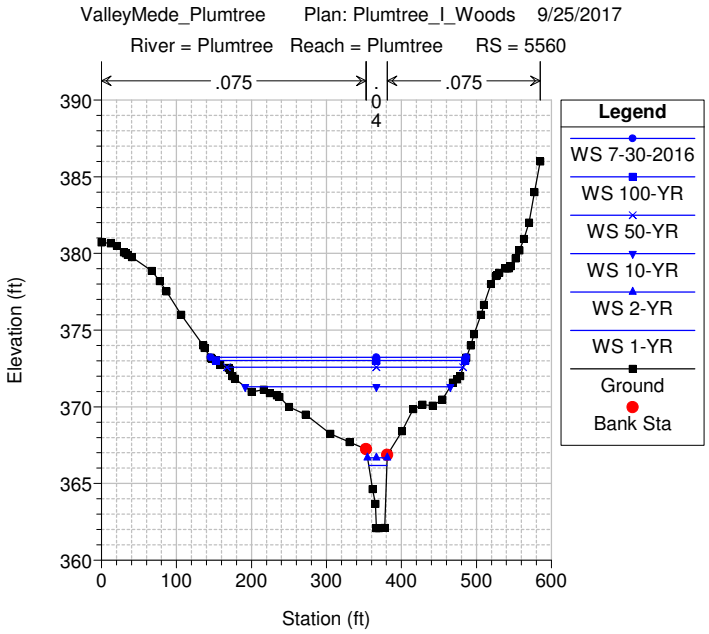

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5745
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

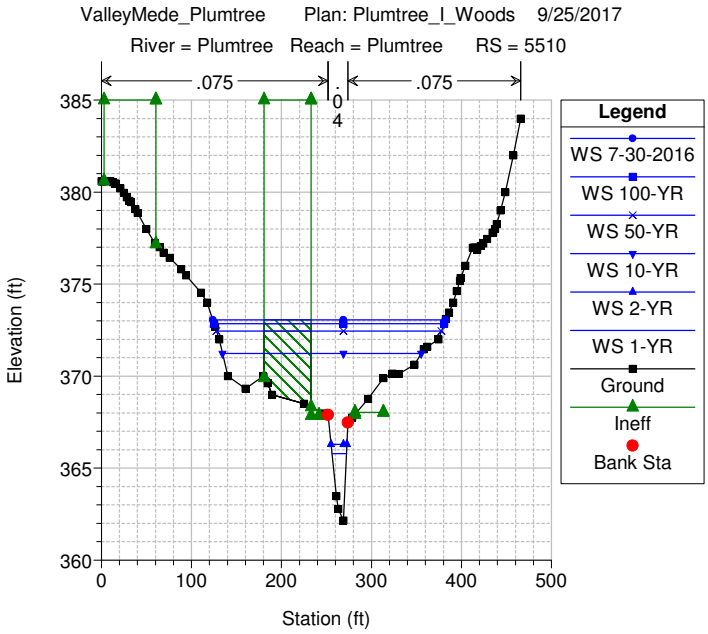

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5711
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

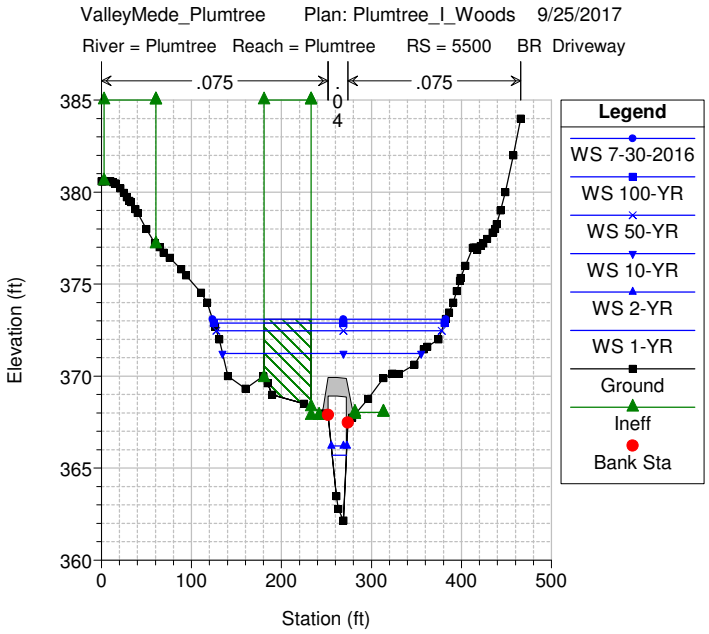

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

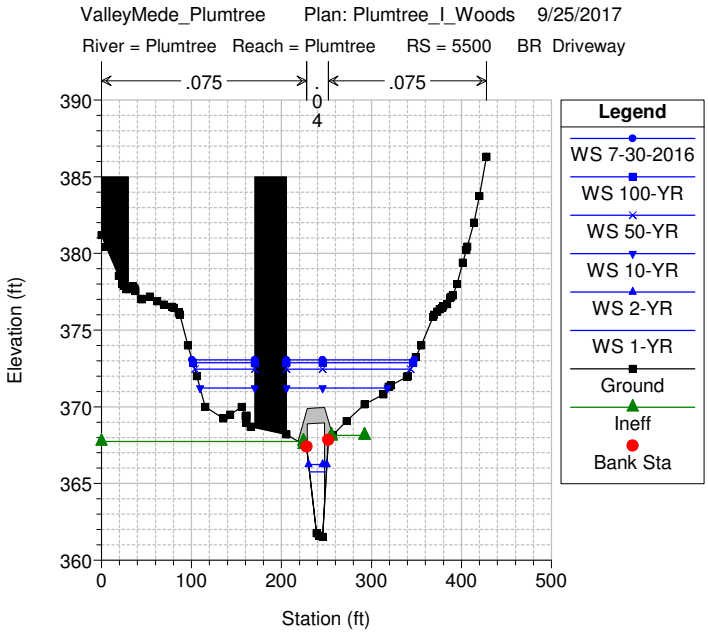

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5650 Culv Brookemede Road
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

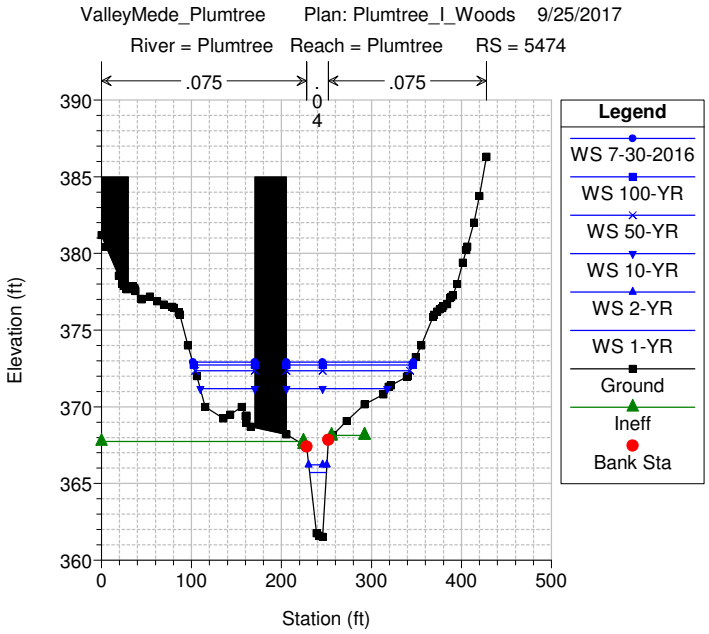

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5614
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

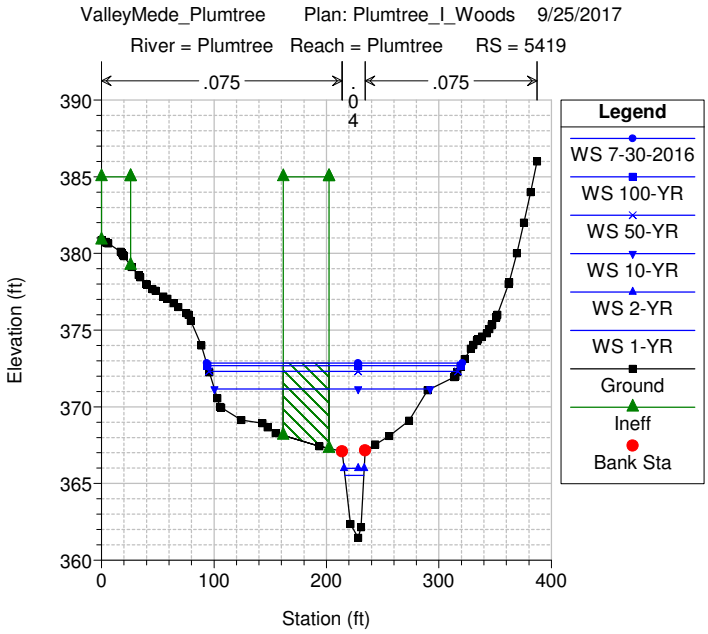

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5560
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

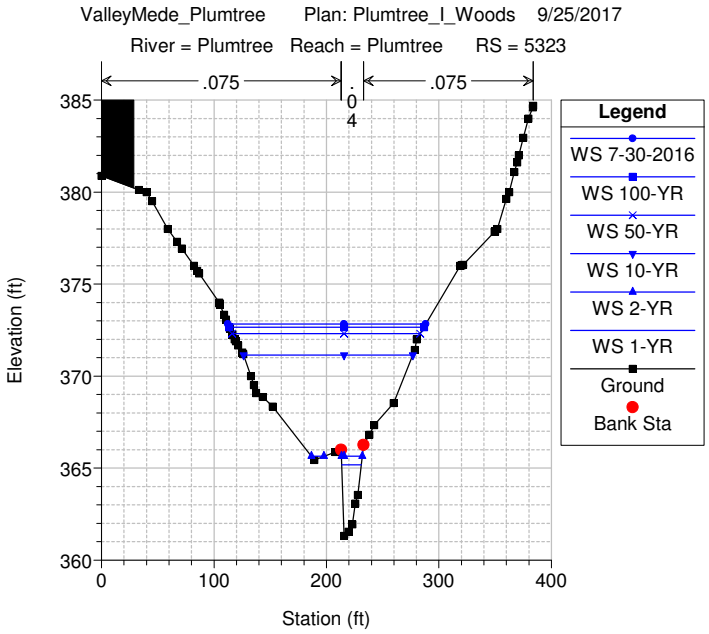

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5510
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

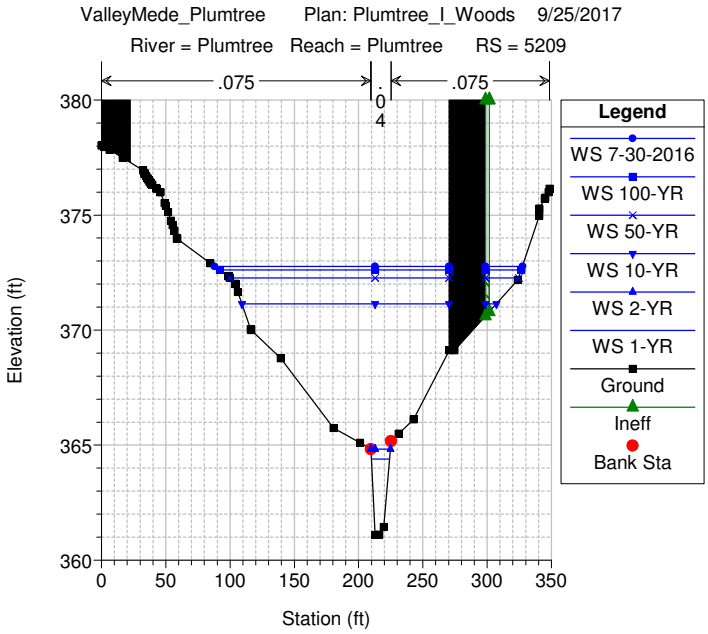

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

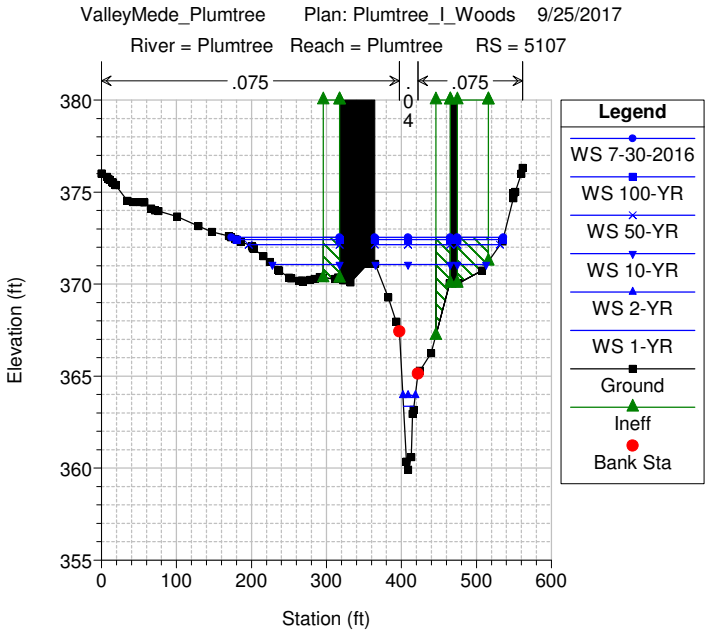

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5500 BR Driveway
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

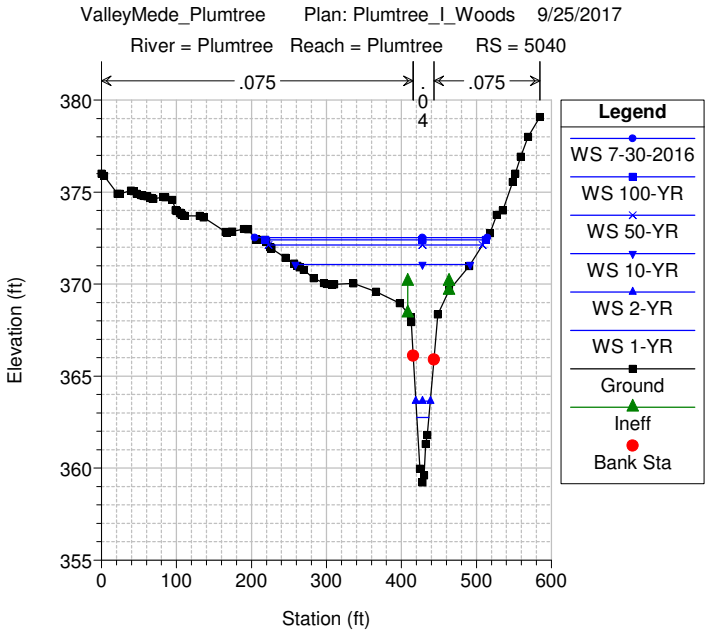

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5474
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

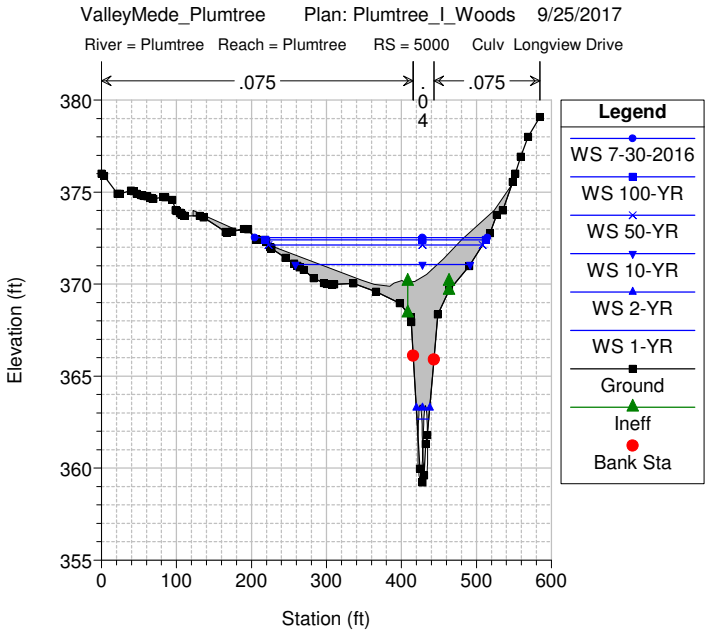

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5419
.075
.075
0.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

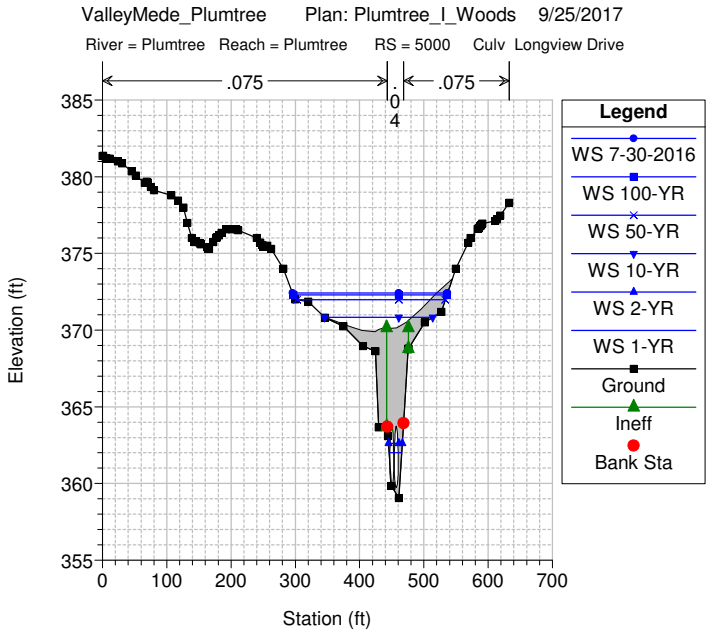

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5323
.075
.075
0.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

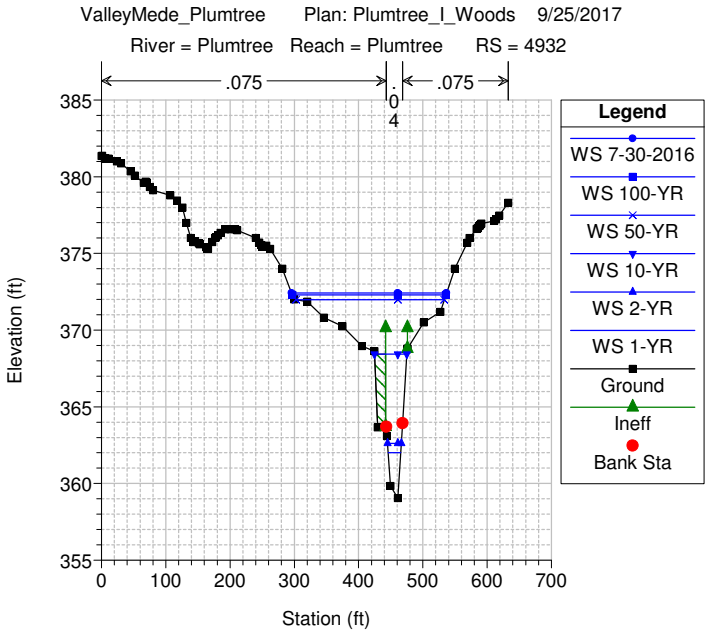

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5209
.075
.075
0.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

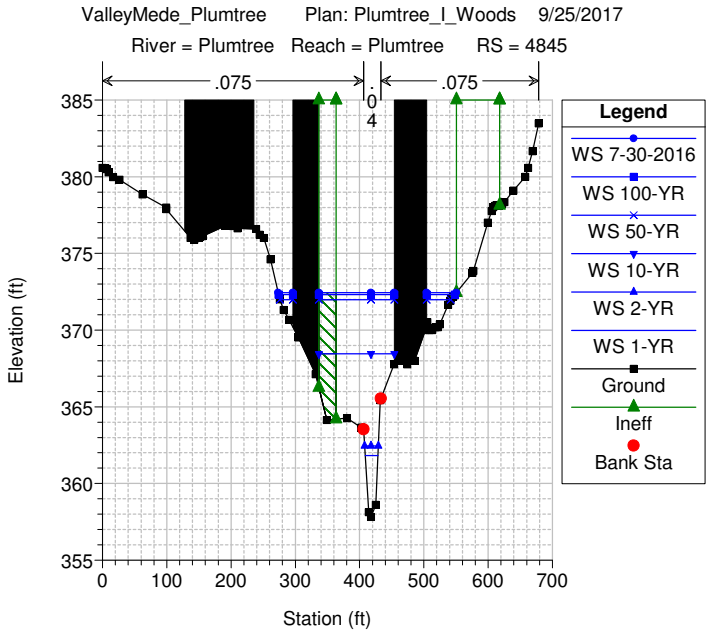

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5107
.075
.075
0.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

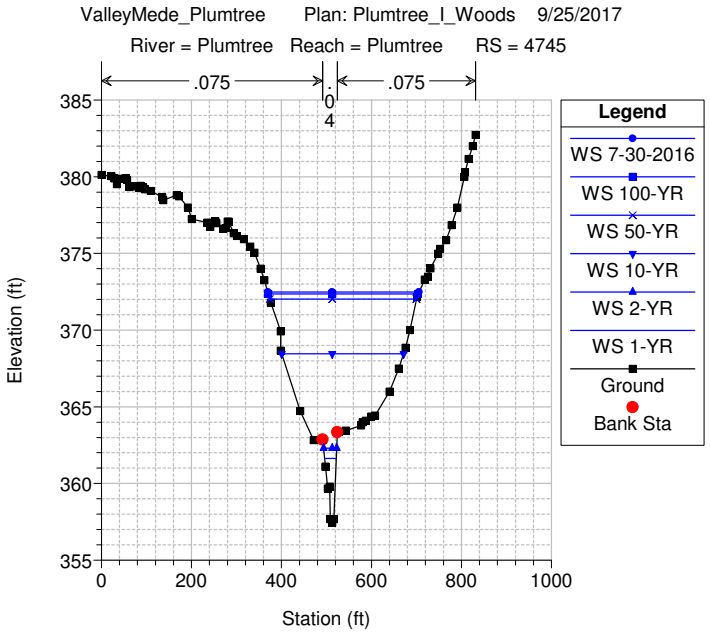

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5040
.075
.075
0.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

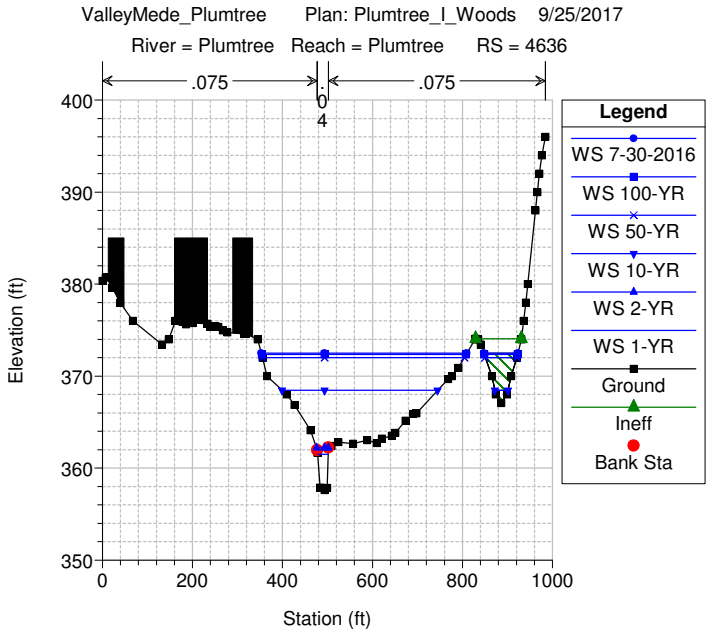

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
0.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

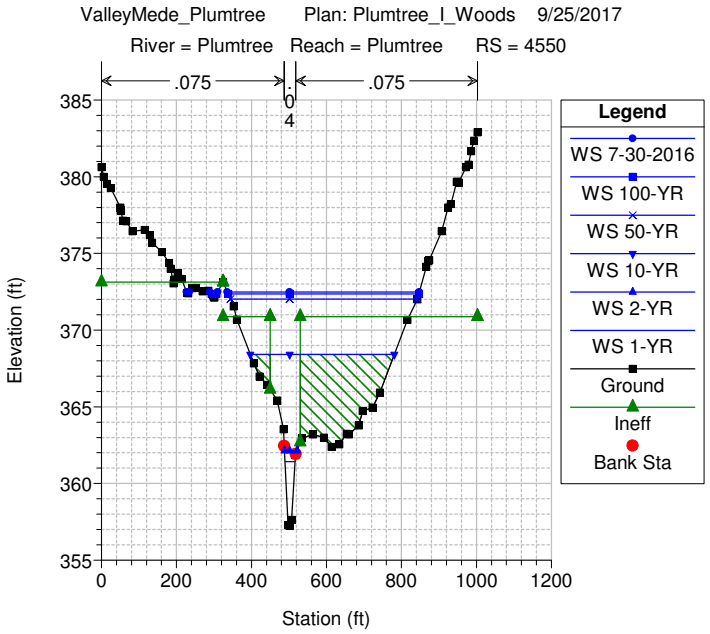

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 5000 Culv Longview Drive
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

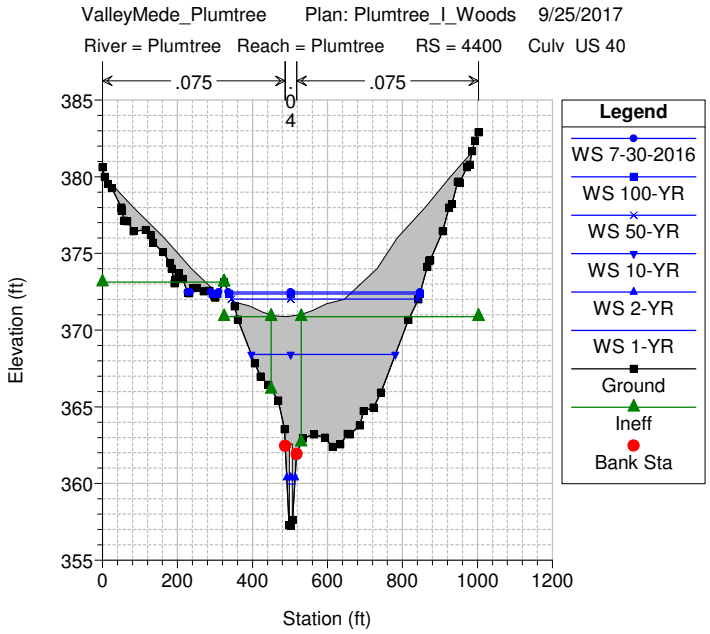

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4932
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

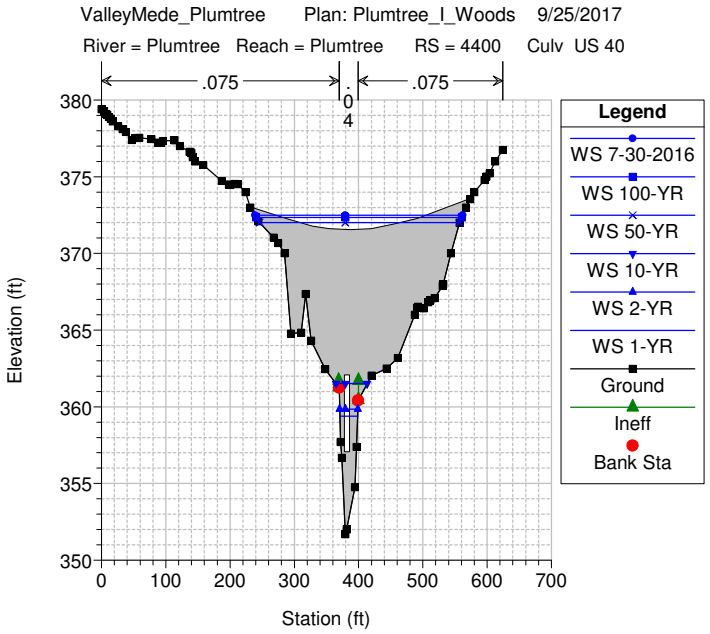

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4845
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

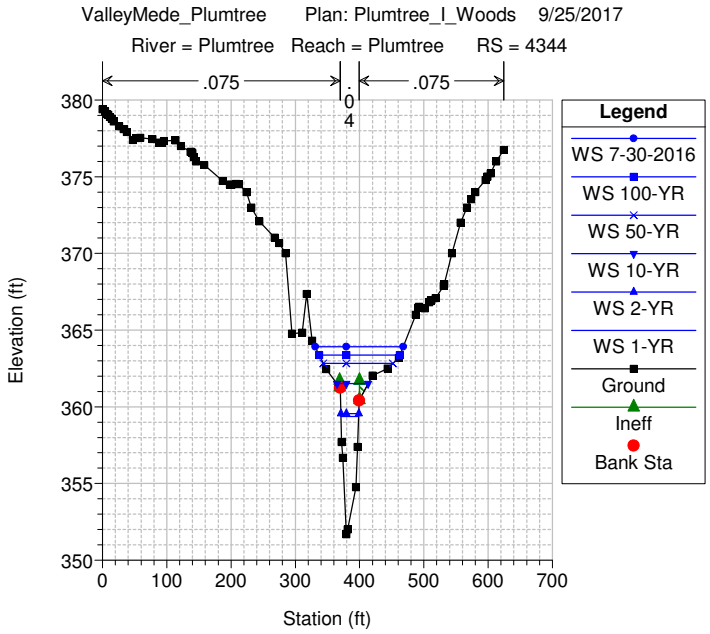

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4745
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

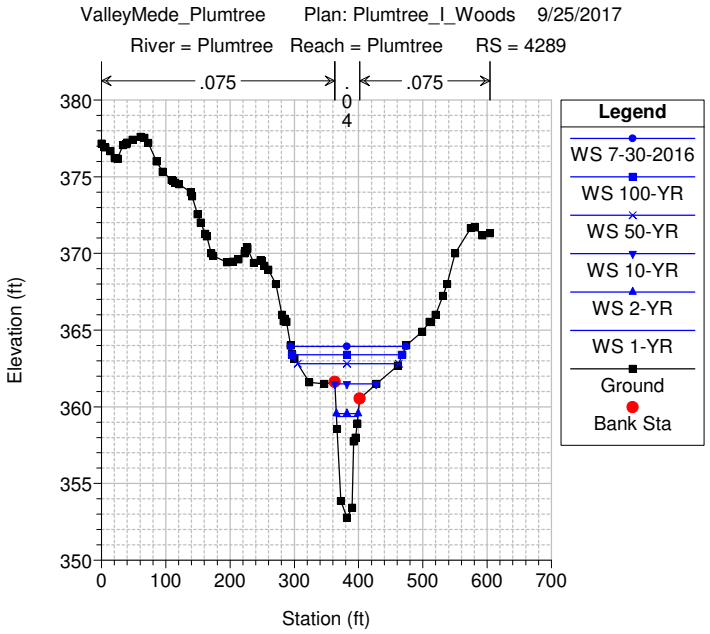

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4636
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

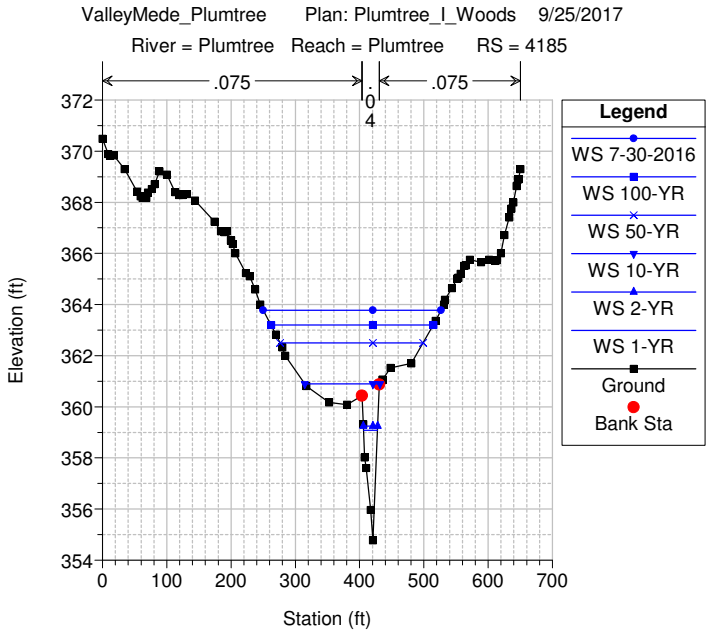

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4550
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

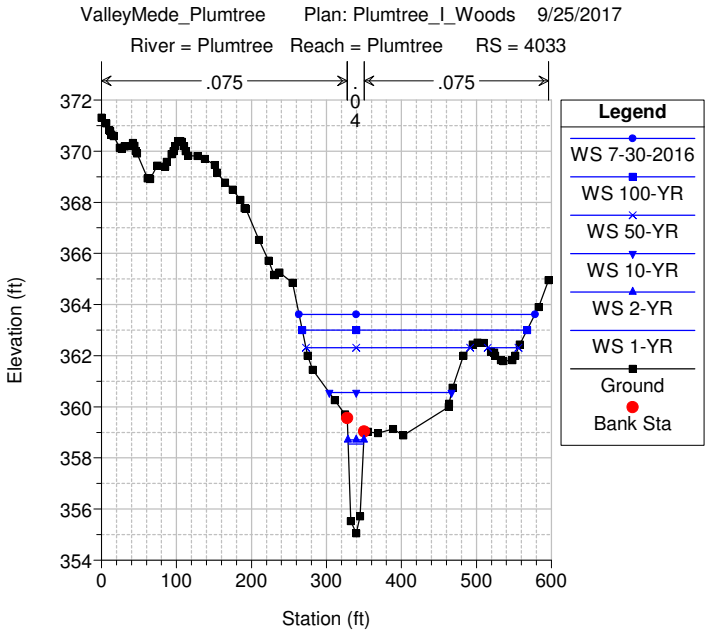

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

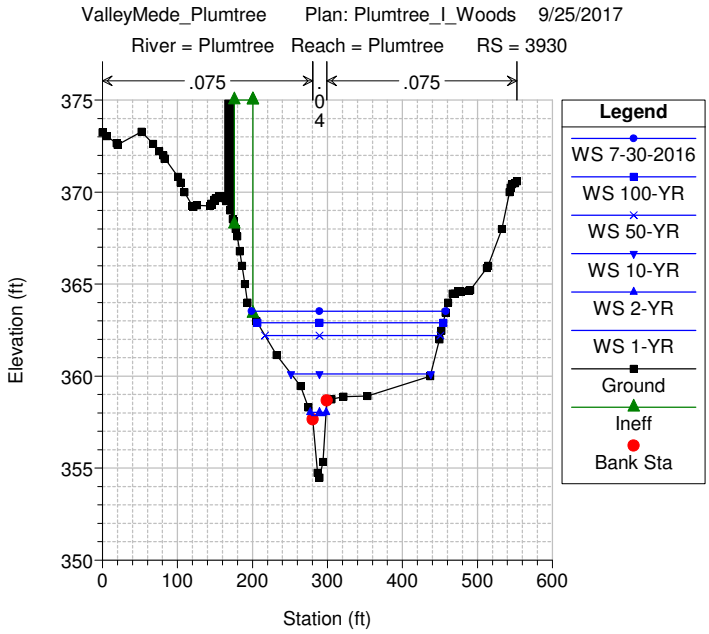

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4400 Culv US 40
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

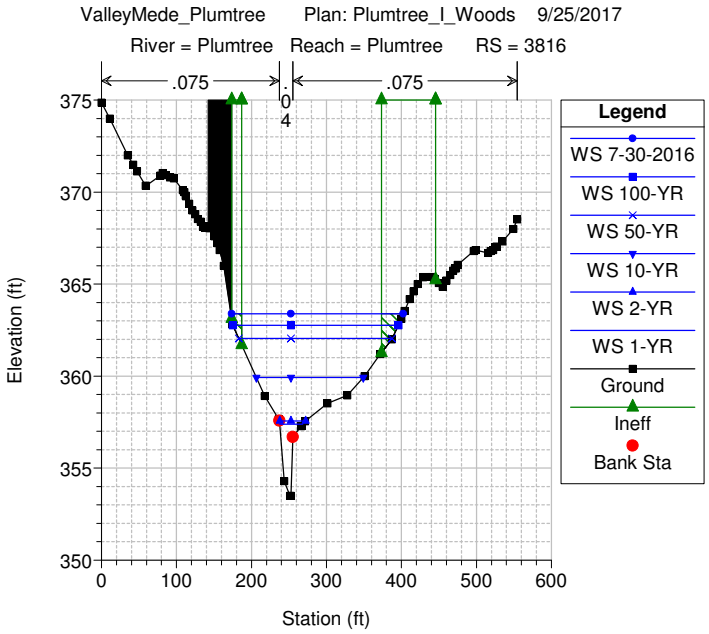

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4344
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

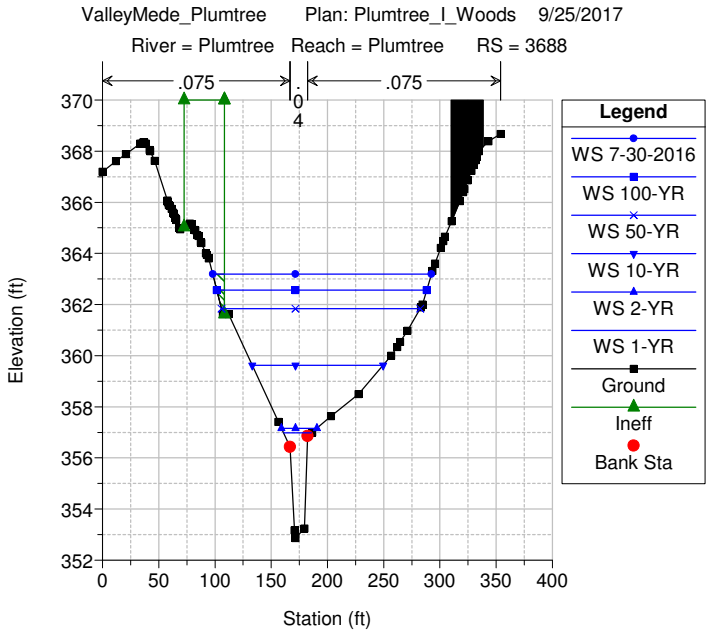

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4289
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

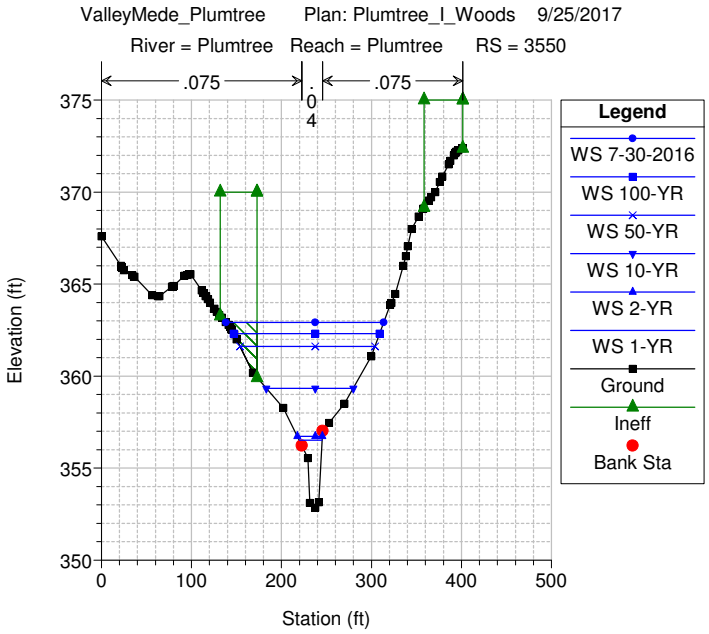

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4185
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

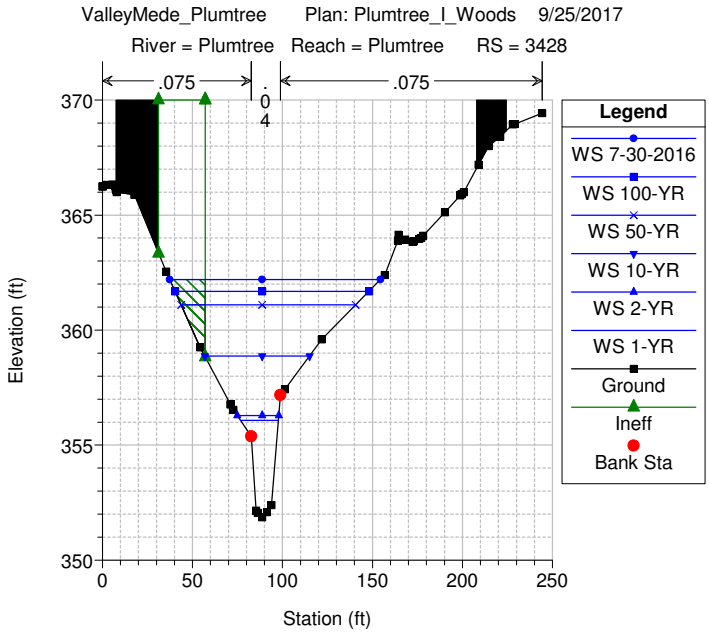

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 4033
.075
.075
0.4
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

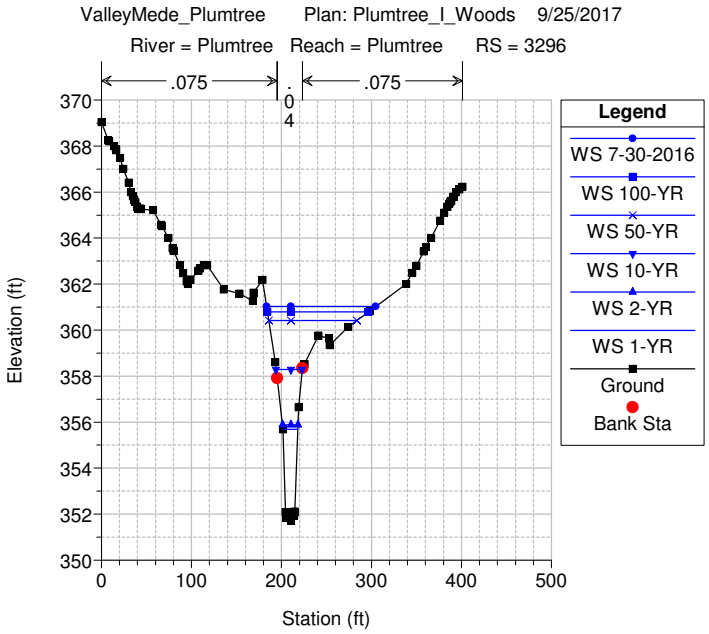

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 3930
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

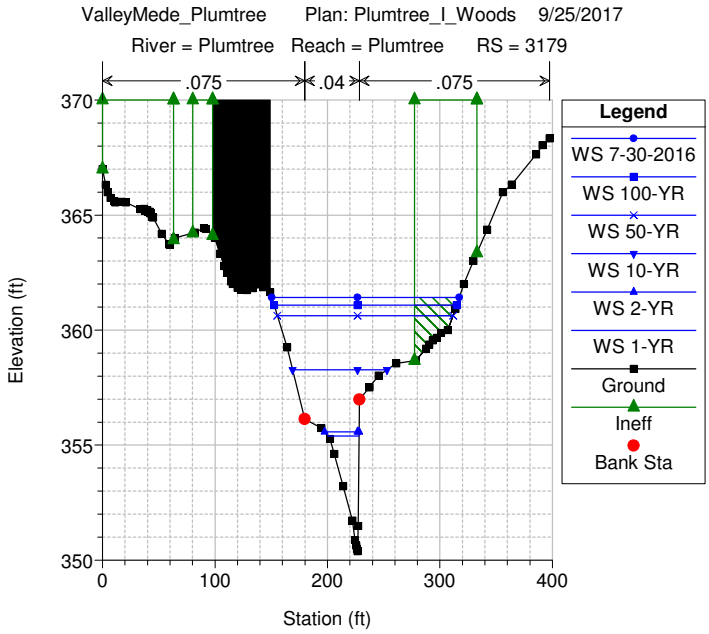

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 3816
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

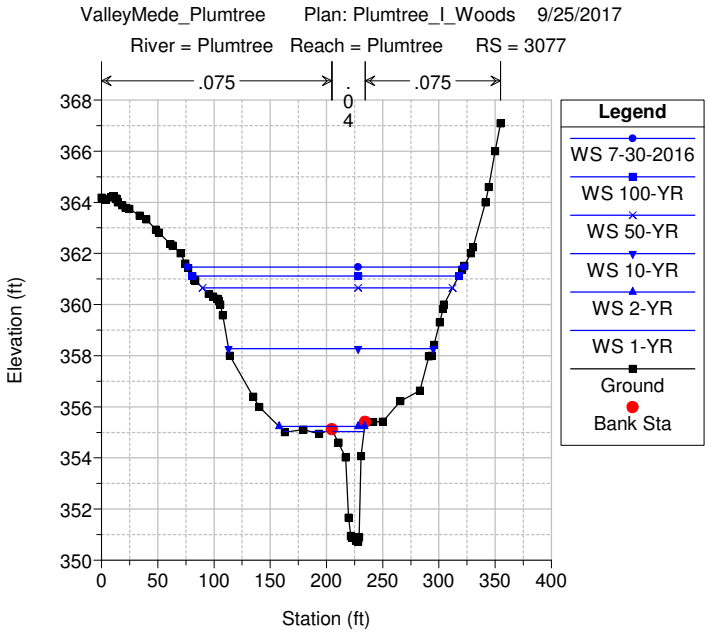

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 3688
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

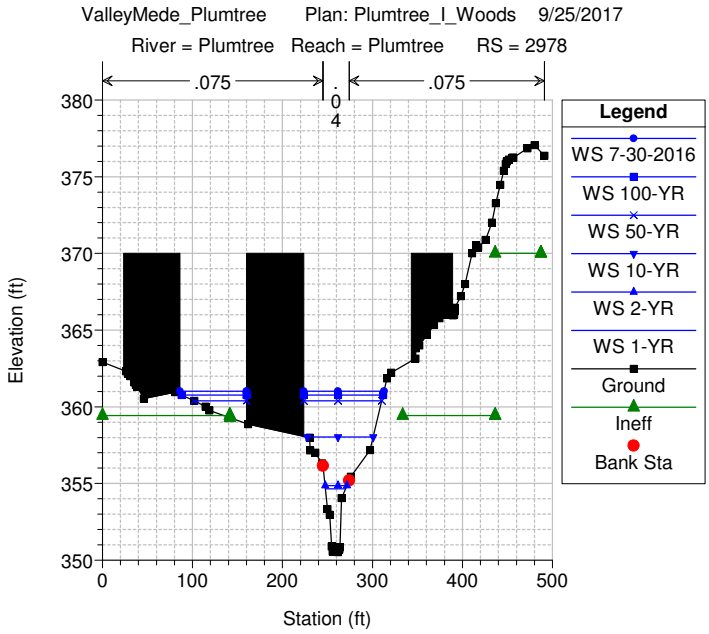

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 3550
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

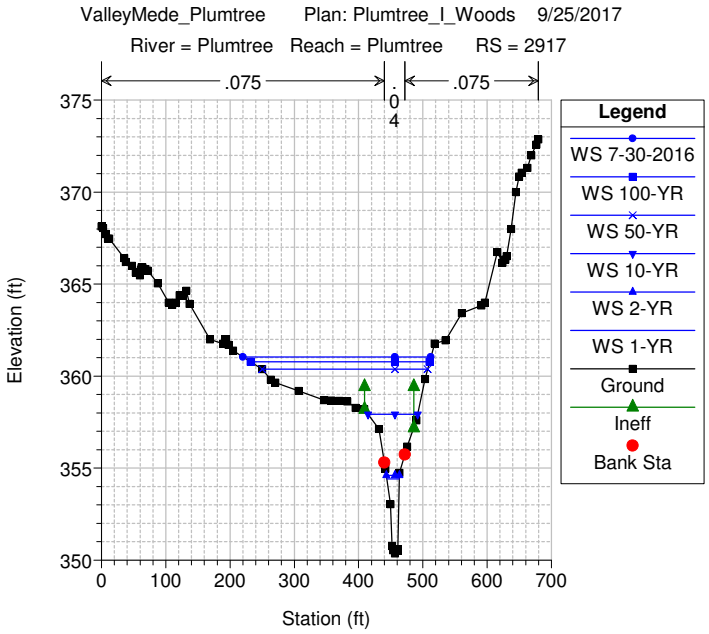

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 3428
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

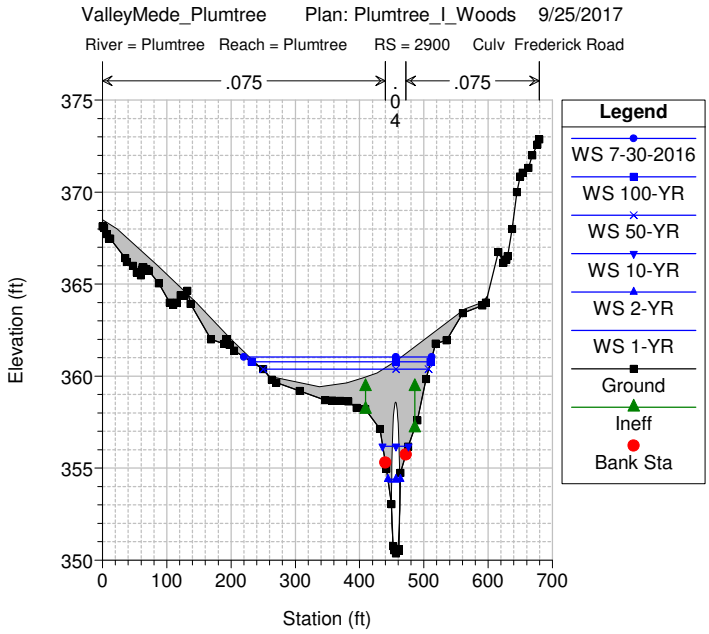

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 3296
.075
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

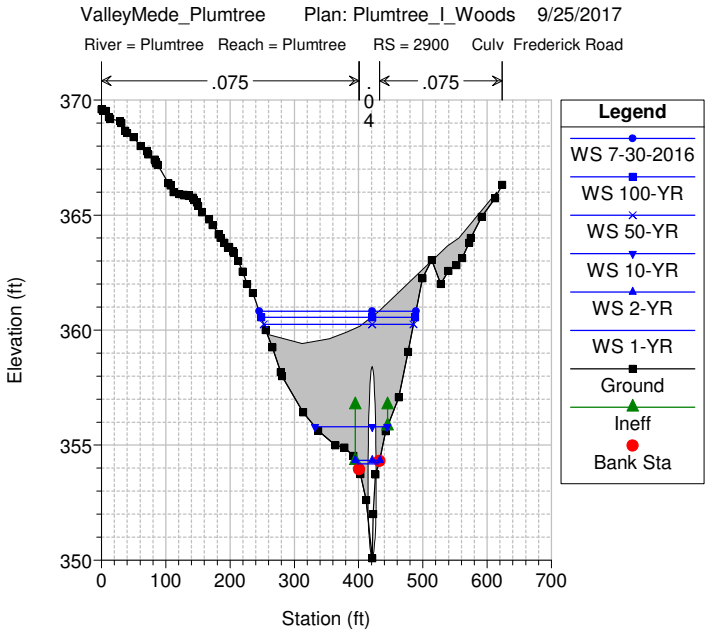

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 3179
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

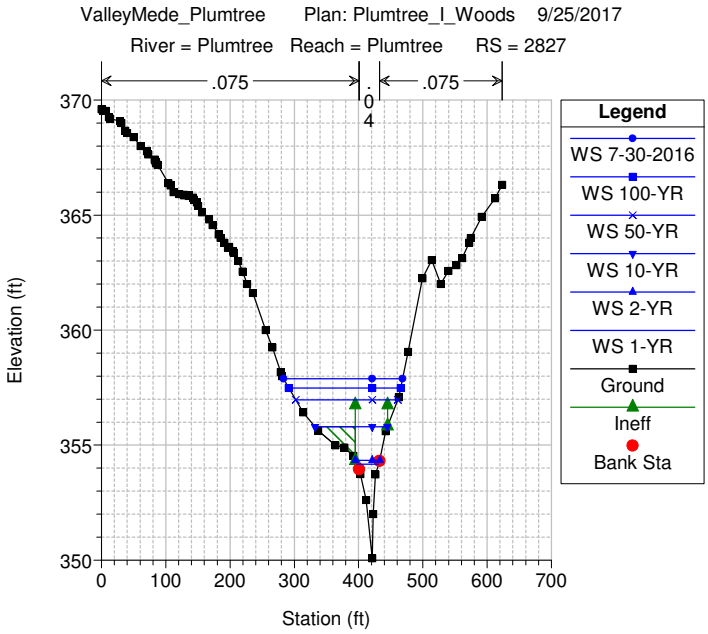

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 3077
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta

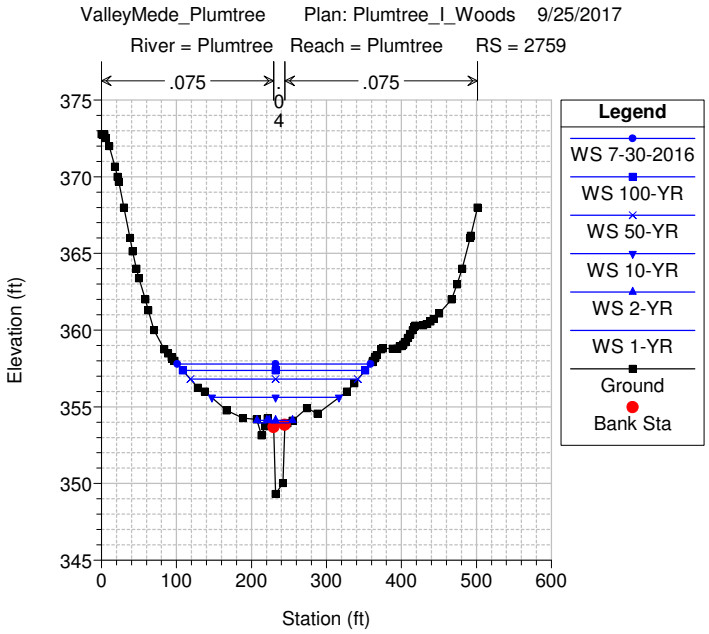

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 2978
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

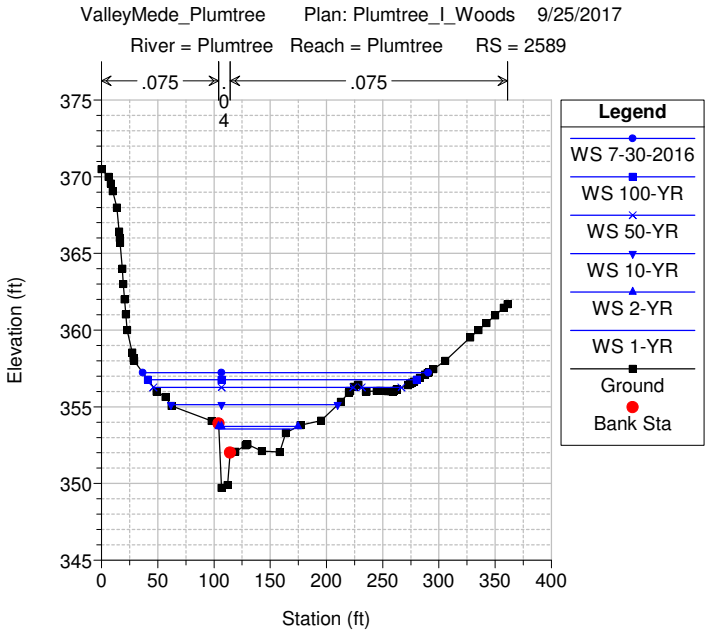

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 2917
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

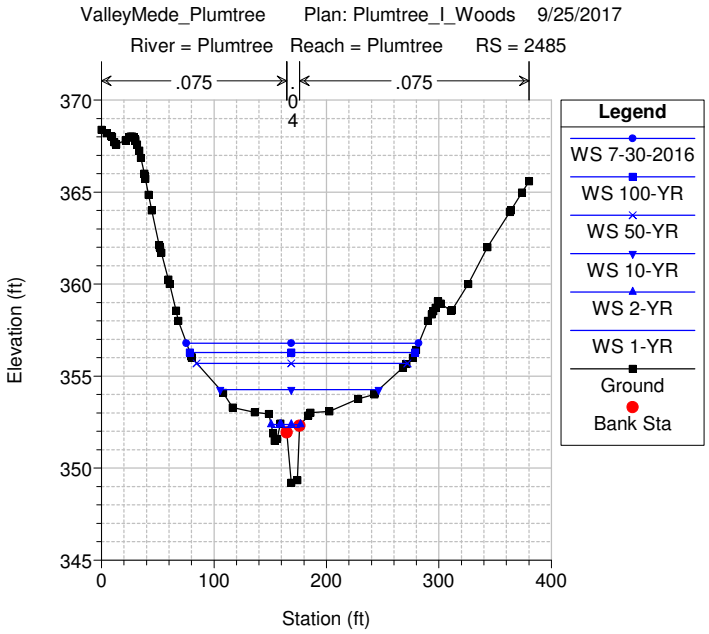

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

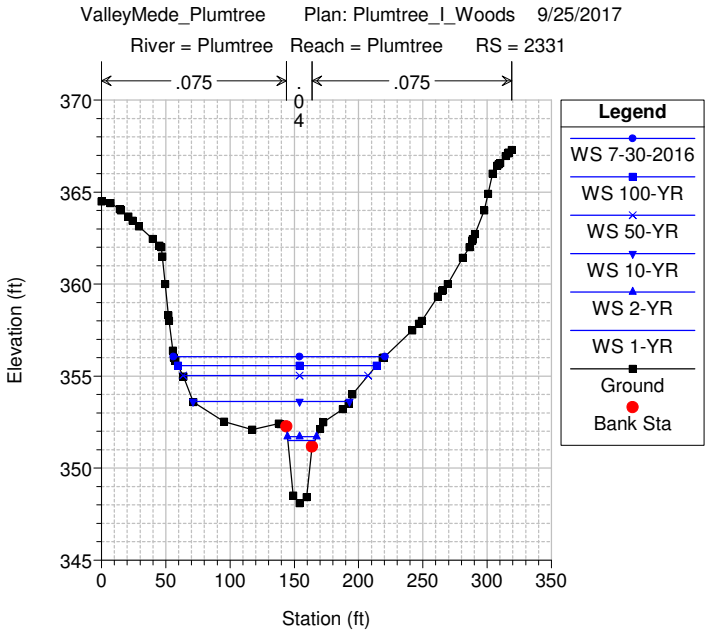

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 2900 Culv Frederick Road
.075
.04
.075
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta

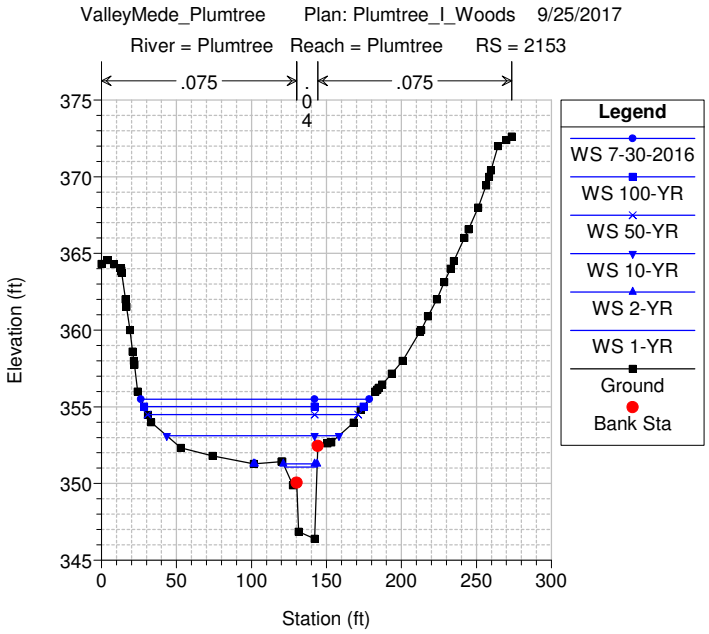

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 2827
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

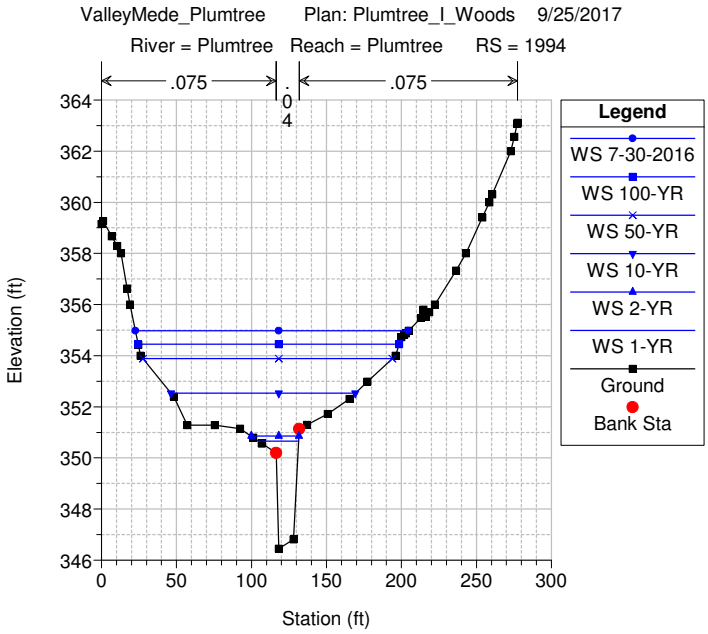

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 2759
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

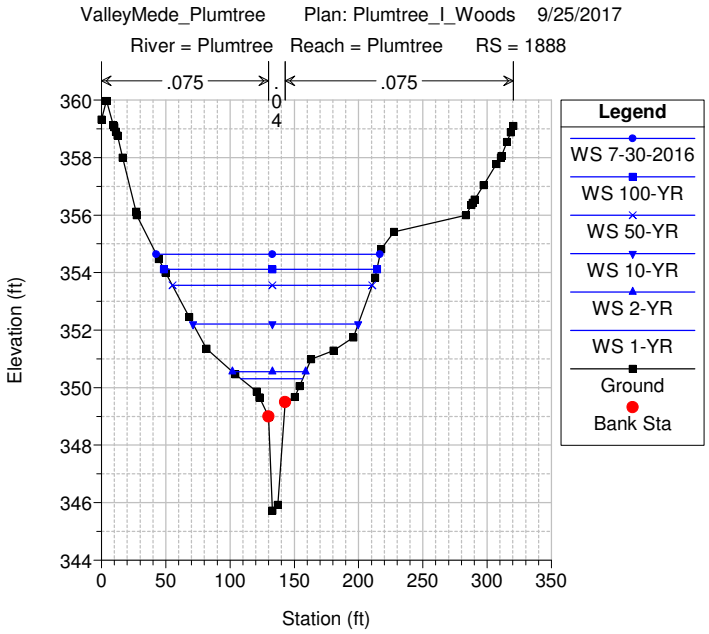

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 2589
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

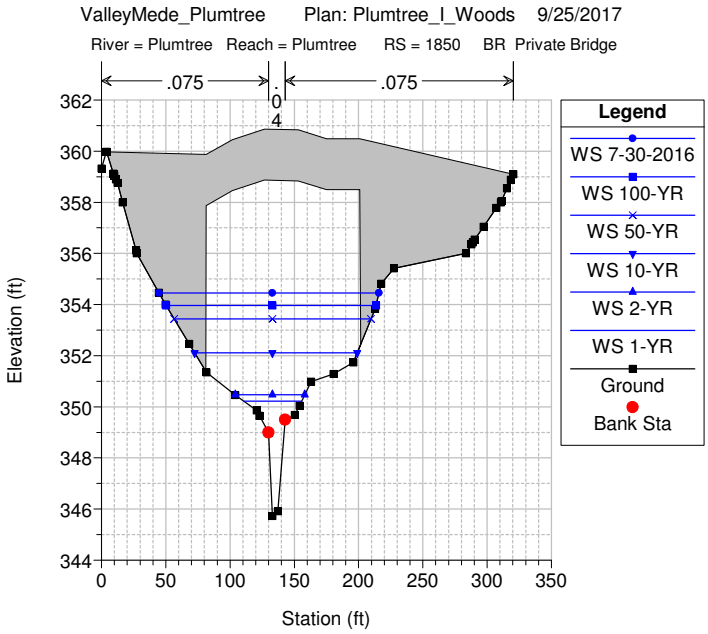

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 2485
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

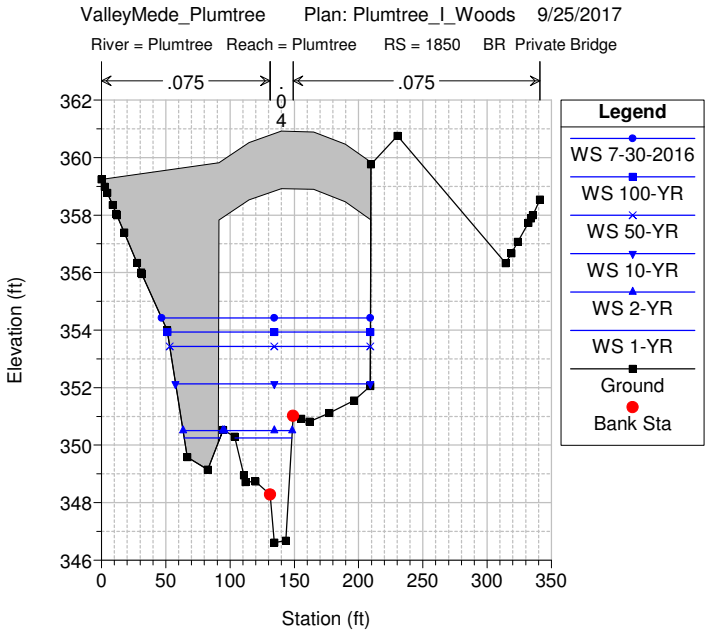

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 2331
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

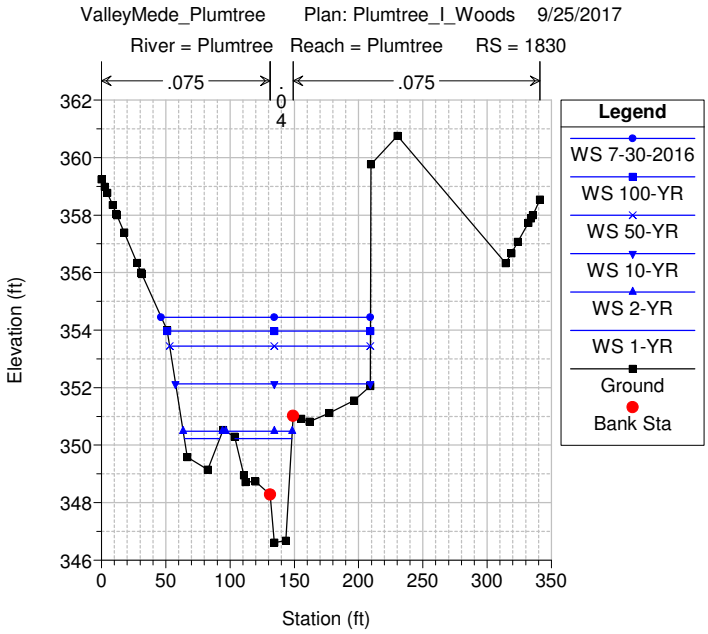

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 2153
.075
.075
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

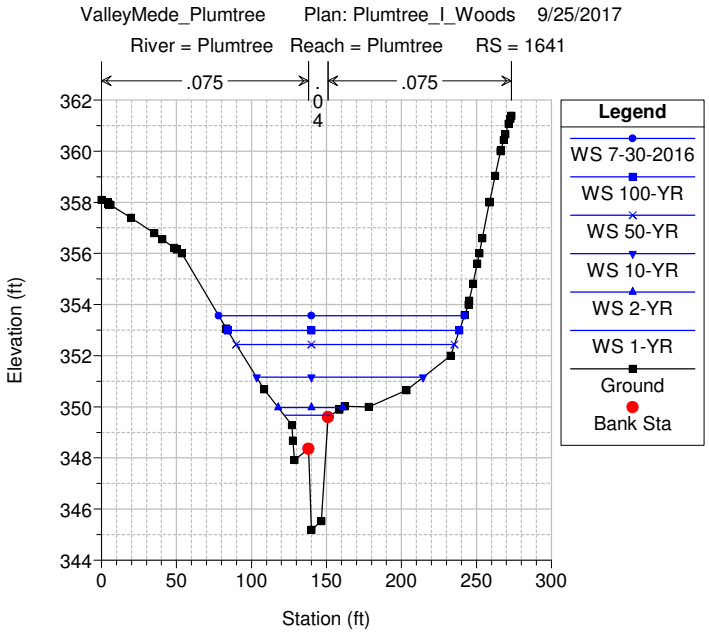

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 1994
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

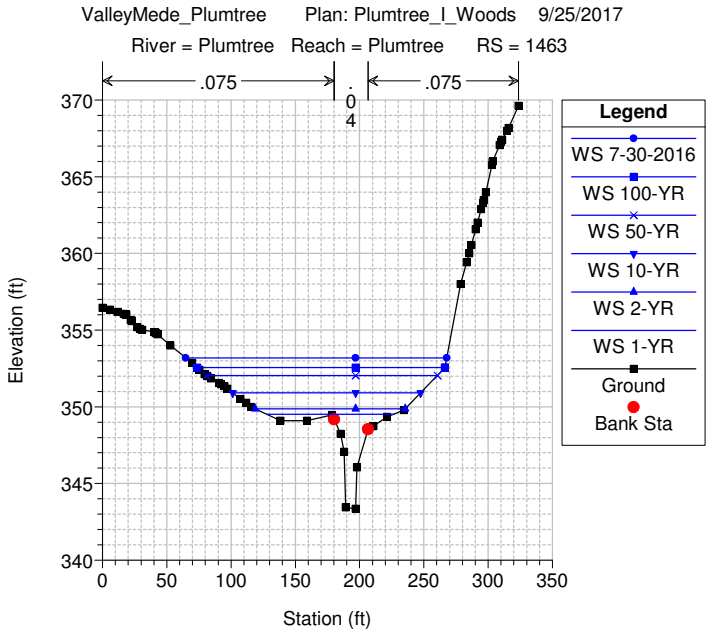

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 1888
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

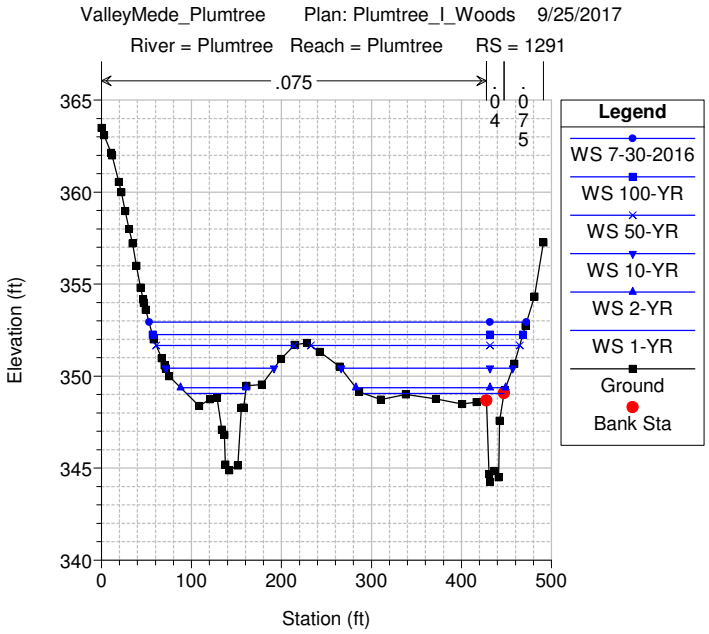

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

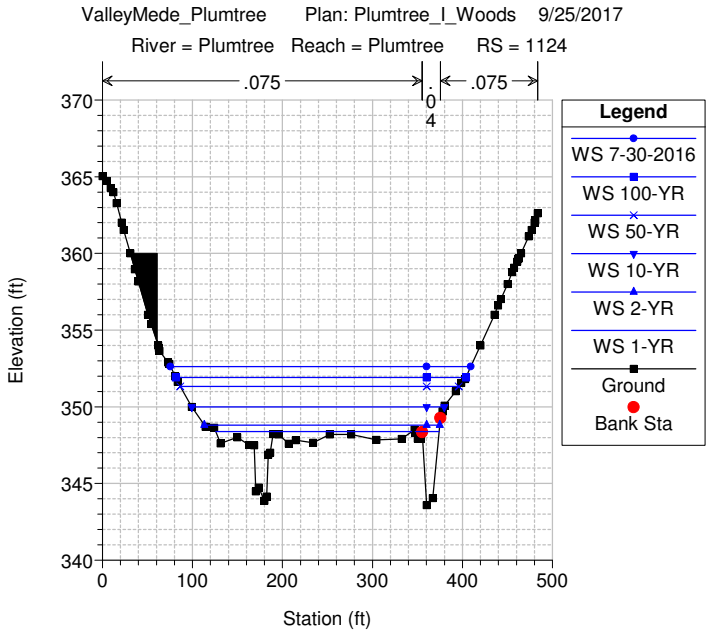

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 1850 BR Private Bridge
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

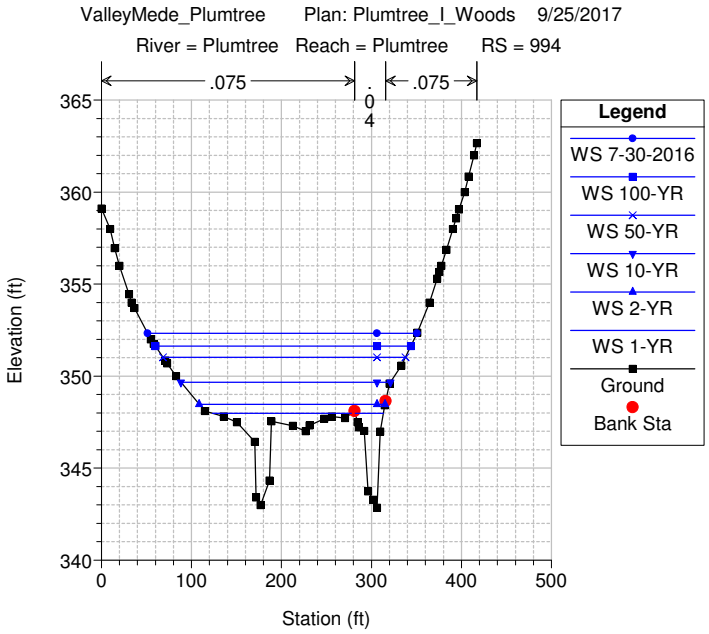

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 1830
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

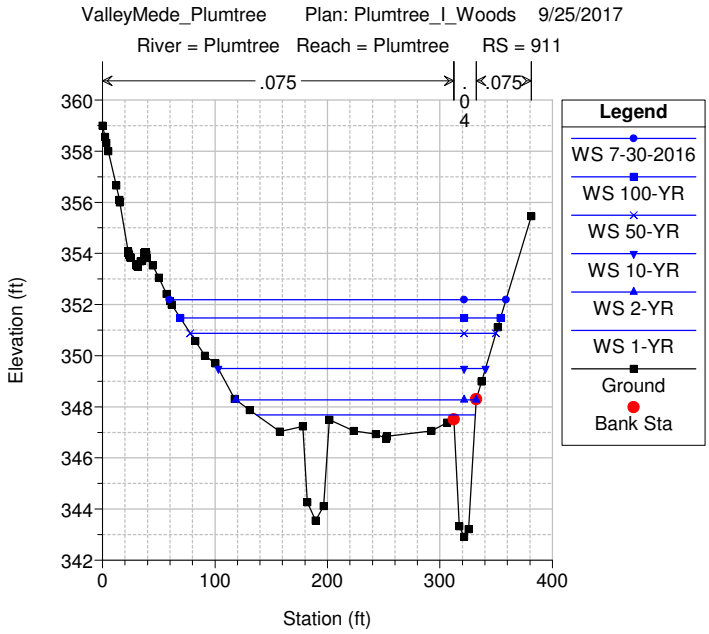

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 1641
.075
.075
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

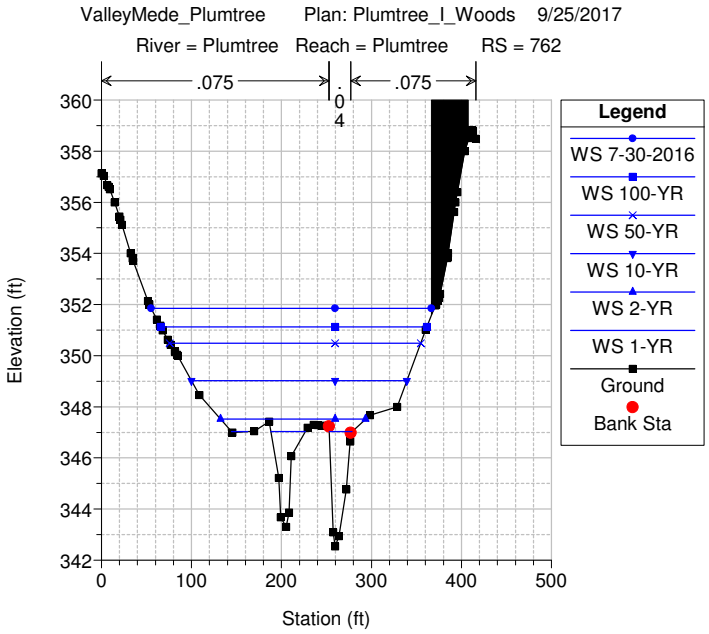

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 1463
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

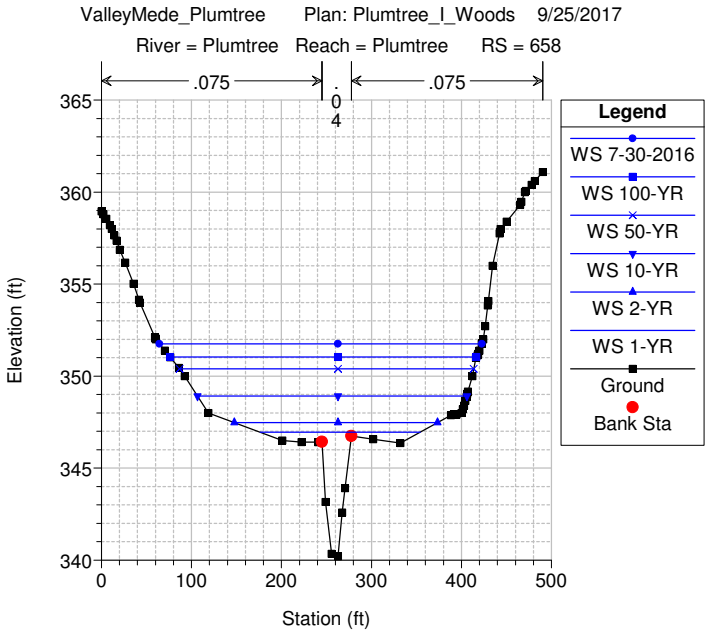

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 1291
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

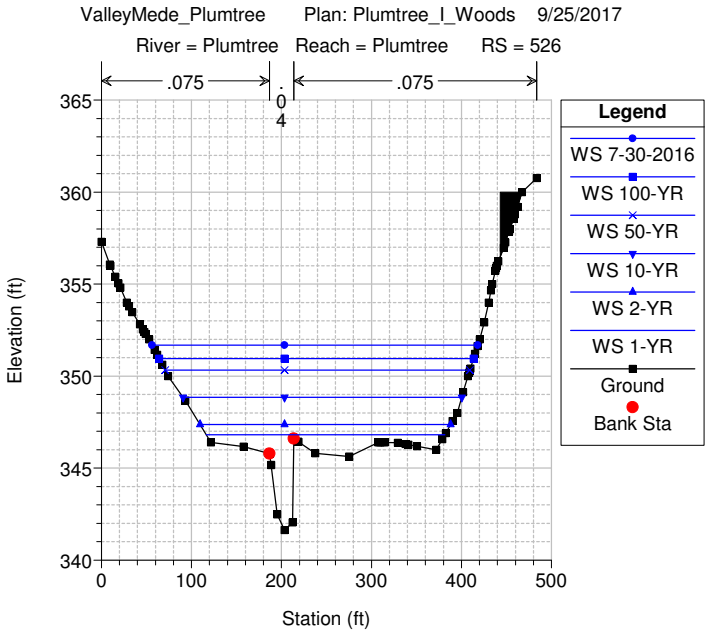

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 1124
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

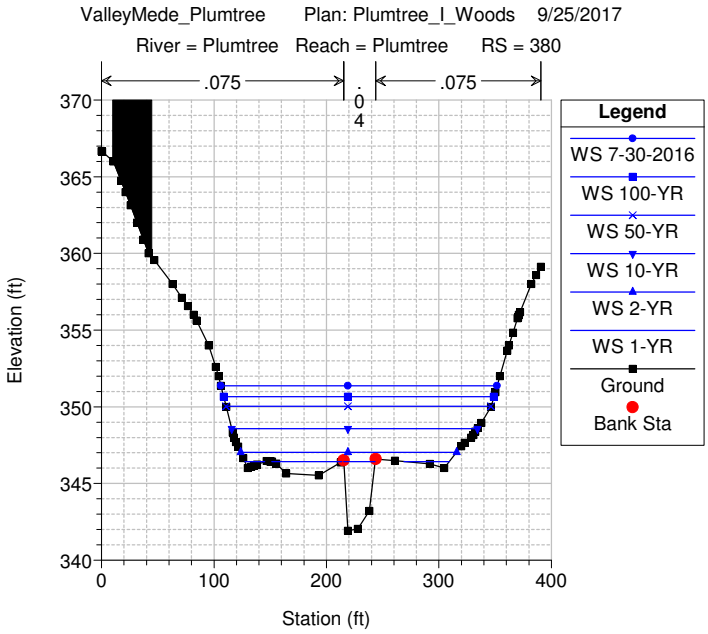

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 994
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

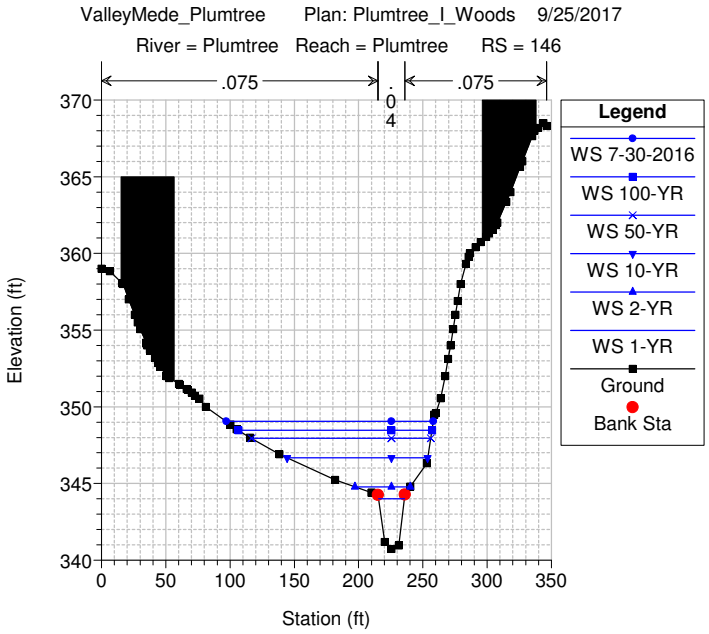

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 911
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

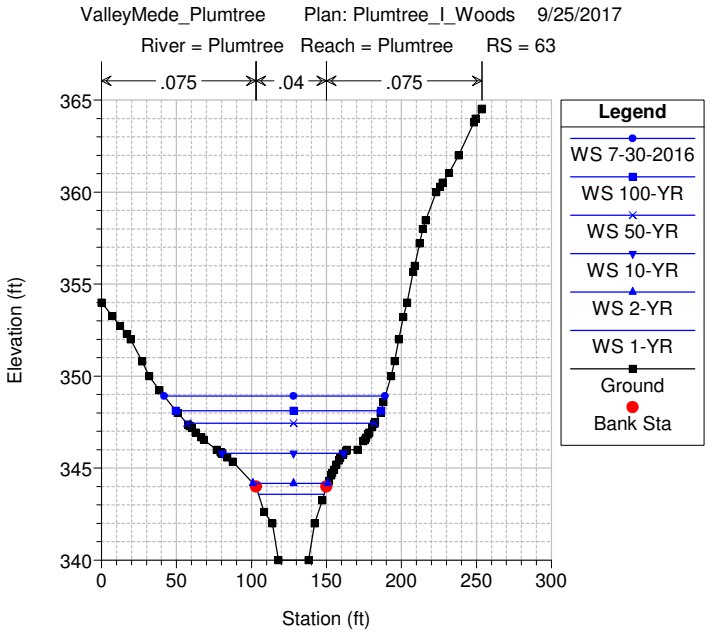

ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 762
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 658
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 526
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 380
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 146
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_Plumtree Plan: Plumtree_I_Woods 9/25/2017
River = Plumtree Reach = Plumtree RS = 63
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
WS 1-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
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PROJECT DATA
Project Title: ValleyMede_Plumtree
Project File : ValleyMede_Plumtree.prj
Run Date and Time: 9/25/2017 6:41:43 AM

Project in English units

PLAN DATA

Plan Title: Plumtree_I_Woods
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.p10

Geometry Title: Plumtree
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g01

Flow Title : Plumtree_I_WOODS
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f11

Plan Description:
Undeveloped parcel (woods in good condition) at I-70.

Plan Summary Information:

Number of:	Cross Sections	= 85	Multiple Openings	=	0
	Culverts	= 6	Inline Structures	=	0
	Bridges	= 2	Lateral Structures	=	0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Plumtree_I_WOODS
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.f11

Flow Data (cfs)

River	Reach	RS	1-YR	2-YR	10-YR	50-YR	100-YR
Plumtree	Plumtree	10286	107	173	418	790	996

Plumtree	Plumtree	9499	161	188	559	1078
1389	1479					
Plumtree	Plumtree	6568	167	214	626	1219
1566	1746					
Plumtree	Plumtree	4185	188	208	613	1243
1581	1910					
Plumtree	Plumtree	1291	416	580	1263	2272
2818	3535					

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Plumtree	Plumtree	1-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	2-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	10-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	50-YR	Critical	Normal S = 0.0035
Plumtree	Plumtree	100-YR	Critical	Normal S = 0.0035

GEOMETRY DATA

Geometry Title: Plumtree
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\Plumtree_201709\ValleyMede_Plumtree.g01

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10286

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	421.06	4.46	420.89	12.57	420.32	16.13	420	21.94	419.29
34.88	418	40.42	417.33	49.09	416.56	55.82	416.21	59.64	416.08
64.03	416.14	69.28	416.31	71.51	416.31	77.01	416.75	78.81	416.76
87.6	416	91.89	415.92	104.16	414	107.04	413.94	110.15	414
119.18	415.05	122.23	414.9	125.21	414.83	141.42	414.84	151.61	414.58
159.6	414.54	167.19	414.69	175.25	414.38	179.96	413.77	184.56	413.83
198.65	413.63	213.29	412.97	221.19	413.06	244.79	412.19	252.86	412
260.69	411.14	268.55	410	275.66	409.1	281.64	408	295.07	406.35
301.98	405.73	324.56	404	331.77	402.81	335.97	402	342.56	400
348.24	398	350.27	397.89	380.47	396.22	384.18	396	392.32	395.09
392.68	395.09	397.28	395.62	402.89	396.12	413.25	396.41	418.97	396.59
431.99	396.41	448.58	396.55	450.96	396.5	456.66	396	465.37	395.79
485.62	395.34	494.65	395.35	513.52	395.9	514.52	396	527.48	398
535.86	400	542.87	402	555.37	406	562.67	408	571.1	410
582.03	412	599.19	414	605.88	414.94	612.34	415.57	635.29	417.19

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	380.47	.04	413.25	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
380.47	413.25	240.46	241.25	237.2	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
418.97	635.29	396.59	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 10044

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	412.61	5.59	412.52	12.02	412	24.56	410	43.68	408
63.32	407.31	82.83	408	95.82	408.67	112.17	408.9	135.95	408
150.67	407.02	155.38	406.93	170.58	407.72	184.39	408.12	187.95	408
198.17	406	207.41	404.64	213.72	403.97	220.01	403.47	230.16	403.33

```
  237.26  402.98  240.08  402.75  253.05   401.3  261.48     400  269.64     398
  276.05     396  280.89   394.8  280.91  394.79  283.98     394  296.18  392.49
  306.31  393.62   315.4  393.68  315.41  393.68   321.2  393.72  340.79   393.4
  357.04  393.75  384.23  394.62  389.34  394.61   409.5     394  417.56  393.18
  419.37  393.18  428.98     394  438.91  394.31  451.85  394.26   461.9  394.35
  480.45  394.77   489.6  395.18  496.68   395.1  547.82     396  555.48  396.43
  564.03  396.66  570.08  396.96  600.19   397.8  605.55  398.35  610.97  398.79
  622.38  399.08  632.53     400  658.42  401.23  661.34  401.26  665.82  401.48
  679.52  401.73  692.52  401.54  695.05  401.76  701.43  401.68  704.45   401.5
  715.06  401.24  723.65  401.19  738.24  400.62  741.08  400.41  748.78  400.57
  754.02  400.82  766.27  400.65  779.16  401.67  781.77     402  794.47     404
  812.23     408  815.19   408.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  280.91     .04   321.2    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.91   321.2            233.9  230.57  222.97             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9814

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  408.67   12.64     408    20.9   407.3   27.53  406.98    42.5  406.44
   45.07  406.25   49.58  405.72   78.23  403.56   83.62  402.79   92.79  403.11
  109.61   402.4   113.8     402  123.62  401.65  158.68  400.12  170.91  398.99
  182.64     398  195.08     396  198.75  395.24  205.66     394  253.13     392
   256.5  391.77  269.73  390.59  269.76  390.59  276.29     390  281.78  388.76
  287.27     390     300  391.49  302.59  391.81  308.77   392.3  315.09  392.31
  322.12  392.41  326.48  392.65  332.87  392.67  336.92  392.57  358.02  392.79
  362.67  392.97  366.57  392.83  382.15  392.69  386.15  392.76  408.35  392.69
  415.33  392.55  427.21  392.45  466.82  393.37  473.56  393.78  479.56     394
  490.09  394.88  500.42  395.03  503.77  395.29  508.66  395.37  510.05  395.29
  514.08  395.75  518.53   395.7  538.06  395.23  547.13  395.22  564.37     396
  575.99  396.66  593.58  397.53   602.7  396.78  604.57  396.76  609.13  397.48
  610.69     398  617.78   398.3   636.1  398.77  690.36  399.64  696.36  399.66
  731.55   398.7   739.3  398.59  745.07  398.39  755.19  398.48   767.5  398.81
  779.98  399.52  790.91  399.95  806.05     402  818.51   403.5  823.74     404
  826.23   404.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  253.13     .04  308.77    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        253.13  308.77            52.19   51.52   50.85             .1       .3
Right Levee     Station=  514.08      Elevation=  395.75

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9762

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  406.21    1.37     406   14.09  404.95   24.55  404.21   38.68  402.62
   47.25     402   67.31     400   71.18  399.81    79.7  399.62   84.43  399.37
  117.61  398.32   130.2  398.16  134.88     398  147.37  397.38  157.13  397.03
  162.41  397.34  174.01  396.74  180.45     396  203.34  393.86  225.77  392.62
  235.15     392  236.85  391.76  246.11  391.05  253.44  390.35  253.48  390.34
  256.39     390  260.62  388.92  263.74     388  265.59  389.21  267.49     388
  276.02     390  282.13     392   284.2  392.49  284.22  392.49  290.57     394
  292.66  393.58  294.75     394   307.3  392.92  329.54  391.59  336.98  391.01
  346.17  391.13  351.58  391.28  355.99  391.22  362.72  391.29  365.01  391.44
  375.54  391.54  383.33  391.42  390.57  391.67  406.22     392  413.09  392.62
  427.35  393.41  431.42   393.8  432.21     394  447.82  395.11  449.31  395.15
  470.35  394.72   473.7  395.12  482.31  395.53  496.51  395.21  507.72  395.47
  543.73  396.64  554.26  396.66  559.24  396.89  562.97  396.96  568.76  397.23
  584.75  397.94  589.53  398.31  594.28     398  601.77  397.68  611.77     398
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   662.6   399.2  729.79  397.67  753.67  397.86  761.91     398   785.2  399.61
  794.52  400.41  805.84  402.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  235.15     .04  284.22    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        235.15  284.22            32.64   30.09   27.57             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9732

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          82.5  121.15           145.71  143.47  141.55             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 9650

INPUT
Description: Michaels Way
Distance from Upstream XS =      51
Deck/Roadway Width        =      50
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  396.38            26.1 395.934            49.6 395.582
    91.4 394.914           117.4 394.746           144.9 394.497
   186.3 394.402          211.94 394.376          238.63 394.594
  353.45     396

Upstream Bridge Cross Section Data
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  398.31     5.8  398.13   10.47     398   42.59     396    46.1  395.28
   64.87  393.59   75.72  393.13    82.5  391.54   84.66  391.03    92.6  389.16
   97.81  389.26  100.87  387.89   104.5     387   110.8  387.67  111.03  388.09
  116.53  389.35  117.02  389.58  121.15  391.54  125.68  393.68  160.15  392.67
   165.6  392.67  175.63  392.92   176.8  392.88  183.88  392.74  186.41  393.06
  188.41  393.23  189.91   393.2  191.28  393.32  192.18   393.3  192.89  393.36
  193.74  393.36   194.6  393.42  195.55  393.46  197.16  393.48  199.36  393.48
  200.35  393.47  204.55  393.37  211.73  393.17  217.24  393.09  219.63  393.09
  220.21   393.1  221.55  393.18  222.52  393.21  227.81  393.66  228.26  393.69
  231.36     394  232.68  394.02  237.28  394.12  238.22  394.15  240.55  394.21
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  242.14  394.27  246.38  394.38  248.22  394.45  251.08  394.52  256.73  394.61
  292.74  395.79  302.14     396  302.47  396.06  302.89  396.08  304.22  396.11
  306.94  396.22  310.26  396.28  313.01  396.39  313.68   396.4  317.39  396.32
   318.2  396.32  319.49  396.29  322.57  396.27  326.02   396.3  333.46  396.42
  339.72   396.5  344.54  396.53  352.47   396.8  353.45  396.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075    82.5     .04  121.15    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
          82.5  121.15            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    80.8  394.38       F
   132.2  353.45  394.38       F

Downstream  Deck/Roadway Coordinates
    num=      14
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  397.96             8.6   397.3            45.6 396.969
    68.8 396.671            92.4  396.38           123.2 395.934
   146.8 395.582           191.3 394.914           209.6 394.746
   232.9 394.497           262.2 394.402           288.2 394.376
  314.98 394.594          417.56     396

Downstream Bridge Cross Section Data
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.96   15.99  396.01   17.57     396   20.76  395.29   25.99  395.01
   29.32  394.71   29.33  394.38   39.55  392.85   60.92  392.22   95.59   390.4
  100.13  389.82  106.73  388.97  116.38  387.66  117.95  386.81  124.68  386.27
  130.57  386.46  134.27   387.9   134.7     388  137.88  388.68  144.79  390.87
  157.88  392.09  174.45  391.81  191.33  392.09  218.95   392.7   229.4  392.07
  229.72  392.09  239.13  392.16  239.87  392.21  251.99  392.37  252.81  392.33
  253.84  392.05  264.78  392.06  265.66  392.35  265.82  392.37  274.13  392.48
  275.38  392.39   275.8  392.37  280.37  392.38  285.74  392.34  288.04  392.35
  289.04  392.37  289.76  392.35  291.67  392.43   292.2  392.41  293.73  392.52
  294.34  392.49  295.48  392.61  297.43   392.5  299.89  392.58  301.52   392.7
  302.57  392.72  317.67  393.33  321.58  393.35  323.43   393.4  328.45  393.52
  336.04  393.41  337.54  393.43  342.18  393.53  347.45  393.83  351.46  393.93
  353.19     394  353.68  394.06  355.32  394.12  356.64  394.21  359.84  394.23
  363.57  394.38  408.86     396  412.96  396.28  417.56  396.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  106.73     .04  137.88    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         106.73  137.88            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   104.8   391.2       F
   140.7  417.56   391.2       F

Upstream Embankment side slope              =       3 horiz. to 1.0 vertical
Downstream Embankment side slope            =       3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch5.916667    8.58
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 13   114.5     .024     .016        0                  .5                1
Upstream   Elevation =  387.74
           Centerline Station =  102
Downstream Elevation =  386.61
           Centerline Station =  120

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch5.916667    8.58
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FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	13	114.6	.024	.016	0	.5	1

Upstream Elevation = 387.77
Centerline Station = 112
Downstream Elevation = 386.6
Centerline Station = 130

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	54.19	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.83
Q Barrel (cfs)	54.19	Culv Vel DS (ft/s)	2.97
E.G. US. (ft)	389.59	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	389.31	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.07	Culv Frctn Ls (ft)	0.21
W.S. DS (ft)	389.00	Culv Exit Loss (ft)	0.07
Delta EG (ft)	0.51	Culv Entr Loss (ft)	0.00
Delta WS (ft)	0.31	Q Weir (cfs)	
E.G. IC (ft)	389.58	Weir Sta Lft (ft)	
E.G. OC (ft)	389.86	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	389.07	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.00	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.33	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.33	Min El Weir Flow (ft)	394.39

Note: During the supercritical analysis, the water surface at the inlet was within 0.01 feet of normal depth. Therefore,
the outlet will be at normal depth.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	87.26	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.84
Q Barrel (cfs)	87.26	Culv Vel DS (ft/s)	4.37
E.G. US. (ft)	390.20	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	389.94	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	389.34	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	389.20	Culv Exit Loss (ft)	0.15
Delta EG (ft)	0.86	Culv Entr Loss (ft)	0.01
Delta WS (ft)	0.74	Q Weir (cfs)	
E.G. IC (ft)	390.20	Weir Sta Lft (ft)	
E.G. OC (ft)	390.55	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	389.47	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.20	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.72	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.73	Min El Weir Flow (ft)	394.39

Note: During the supercritical analysis, the water surface at the inlet was within 0.01 feet of normal depth. Therefore,
the outlet will be at normal depth.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	209.14	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.11
Q Barrel (cfs)	209.14	Culv Vel DS (ft/s)	6.70
E.G. US. (ft)	392.59	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	392.42	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	390.93	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	390.69	Culv Exit Loss (ft)	0.46
Delta EG (ft)	1.66	Culv Entr Loss (ft)	0.51
Delta WS (ft)	1.73	Q Weir (cfs)	
E.G. IC (ft)	392.16	Weir Sta Lft (ft)	
E.G. OC (ft)	392.58	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.04	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.69	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.98	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.92	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	351.11	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.57
Q Barrel (cfs)	351.11	Culv Vel DS (ft/s)	9.36
E.G. US. (ft)	394.89	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	394.78	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.17	Culv Frctn Ls (ft)	0.72
W.S. DS (ft)	391.77	Culv Exit Loss (ft)	0.96
Delta EG (ft)	2.72	Culv Entr Loss (ft)	0.71
Delta WS (ft)	3.00	Q Weir (cfs)	87.44
E.G. IC (ft)	394.45	Weir Sta Lft (ft)	95.20
E.G. OC (ft)	394.88	Weir Sta Rgt (ft)	262.76
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.74	Weir Max Depth (ft)	0.51
Culv WS Outlet (ft)	391.77	Weir Avg Depth (ft)	0.32
Culv Nml Depth (ft)	4.69	Weir Flow Area (sq ft)	54.36
Culv Crt Depth (ft)	3.84	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	354.94	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.04
Q Barrel (cfs)	354.94	Culv Vel DS (ft/s)	9.01
E.G. US. (ft)	395.29	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.16	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.75	Culv Frctn Ls (ft)	0.87
W.S. DS (ft)	392.30	Culv Exit Loss (ft)	0.81
Delta EG (ft)	2.54	Culv Entr Loss (ft)	0.63
Delta WS (ft)	2.86	Q Weir (cfs)	285.14
E.G. IC (ft)	394.54	Weir Sta Lft (ft)	67.86
E.G. OC (ft)	395.29	Weir Sta Rgt (ft)	277.49
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.38	Weir Max Depth (ft)	0.91
Culv WS Outlet (ft)	392.30	Weir Avg Depth (ft)	0.62
Culv Nml Depth (ft)	4.76	Weir Flow Area (sq ft)	130.81
Culv Crt Depth (ft)	3.88	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	350.29	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.82
Q Barrel (cfs)	350.29	Culv Vel DS (ft/s)	8.80
E.G. US. (ft)	395.37	Culv Inv El Up (ft)	387.74
W.S. US. (ft)	395.23	Culv Inv El Dn (ft)	386.61
E.G. DS (ft)	392.90	Culv Frctn Ls (ft)	0.25
W.S. DS (ft)	392.46	Culv Exit Loss (ft)	0.76
Delta EG (ft)	2.48	Culv Entr Loss (ft)	0.60
Delta WS (ft)	2.78	Q Weir (cfs)	339.33
E.G. IC (ft)	394.43	Weir Sta Lft (ft)	62.61
E.G. OC (ft)	395.37	Weir Sta Rgt (ft)	280.05
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.55	Weir Max Depth (ft)	1.00
Culv WS Outlet (ft)	392.46	Weir Avg Depth (ft)	0.68
Culv Nml Depth (ft)	4.68	Weir Flow Area (sq ft)	148.73
Culv Crt Depth (ft)	3.84	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	52.81	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.78
Q Barrel (cfs)	52.81	Culv Vel DS (ft/s)	2.88
E.G. US. (ft)	389.59	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	389.31	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.07	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	389.00	Culv Exit Loss (ft)	0.06
Delta EG (ft)	0.51	Culv Entr Loss (ft)	0.00
Delta WS (ft)	0.31	Q Weir (cfs)	
E.G. IC (ft)	389.59	Weir Sta Lft (ft)	
E.G. OC (ft)	389.86	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	389.08	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.00	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.30	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.31	Min El Weir Flow (ft)	394.39

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	85.74	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.80
Q Barrel (cfs)	85.74	Culv Vel DS (ft/s)	4.27
E.G. US. (ft)	390.20	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	389.94	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	389.34	Culv Frctn Ls (ft)	0.37
W.S. DS (ft)	389.20	Culv Exit Loss (ft)	0.14
Delta EG (ft)	0.86	Culv Entr Loss (ft)	0.01
Delta WS (ft)	0.74	Q Weir (cfs)	
E.G. IC (ft)	390.20	Weir Sta Lft (ft)	
E.G. OC (ft)	390.55	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	389.48	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.20	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.69	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.71	Min El Weir Flow (ft)	394.39

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	208.86	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.23
Q Barrel (cfs)	208.86	Culv Vel DS (ft/s)	6.68
E.G. US. (ft)	392.59	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	392.42	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	390.93	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	390.69	Culv Exit Loss (ft)	0.46
Delta EG (ft)	1.66	Culv Entr Loss (ft)	0.53
Delta WS (ft)	1.73	Q Weir (cfs)	
E.G. IC (ft)	392.18	Weir Sta Lft (ft)	
E.G. OC (ft)	392.60	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.02	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.69	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.94	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.92	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	351.45	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.65
Q Barrel (cfs)	351.45	Culv Vel DS (ft/s)	9.35
E.G. US. (ft)	394.89	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	394.78	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.17	Culv Frctn Ls (ft)	0.72
W.S. DS (ft)	391.77	Culv Exit Loss (ft)	0.96
Delta EG (ft)	2.72	Culv Entr Loss (ft)	0.72
Delta WS (ft)	3.00	Q Weir (cfs)	87.44
E.G. IC (ft)	394.49	Weir Sta Lft (ft)	95.20
E.G. OC (ft)	394.90	Weir Sta Rgt (ft)	262.76
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	392.73	Weir Max Depth (ft)	0.51
Culv WS Outlet (ft)	391.77	Weir Avg Depth (ft)	0.32
Culv Nml Depth (ft)	4.62	Weir Flow Area (sq ft)	54.36
Culv Crt Depth (ft)	3.85	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	355.92	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.08
Q Barrel (cfs)	355.92	Culv Vel DS (ft/s)	9.03
E.G. US. (ft)	395.29	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.16	Culv Inv El Dn (ft)	386.60

E.G. DS (ft)	392.75	Culv Frctn Ls (ft)	0.86
W.S. DS (ft)	392.30	Culv Exit Loss (ft)	0.81
Delta EG (ft)	2.54	Culv Entr Loss (ft)	0.64
Delta WS (ft)	2.86	Q Weir (cfs)	285.14
E.G. IC (ft)	394.59	Weir Sta Lft (ft)	67.86
E.G. OC (ft)	395.30	Weir Sta Rgt (ft)	277.49
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.38	Weir Max Depth (ft)	0.91
Culv WS Outlet (ft)	392.30	Weir Avg Depth (ft)	0.62
Culv Nml Depth (ft)	4.68	Weir Flow Area (sq ft)	130.81
Culv Crt Depth (ft)	3.88	Min El Weir Flow (ft)	394.39

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	351.38	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.86
Q Barrel (cfs)	351.38	Culv Vel DS (ft/s)	8.82
E.G. US. (ft)	395.37	Culv Inv El Up (ft)	387.77
W.S. US. (ft)	395.23	Culv Inv El Dn (ft)	386.60
E.G. DS (ft)	392.90	Culv Frctn Ls (ft)	1.27
W.S. DS (ft)	392.46	Culv Exit Loss (ft)	0.77
Delta EG (ft)	2.48	Culv Entr Loss (ft)	0.61
Delta WS (ft)	2.78	Q Weir (cfs)	339.33
E.G. IC (ft)	394.49	Weir Sta Lft (ft)	62.61
E.G. OC (ft)	395.38	Weir Sta Rgt (ft)	280.05
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	393.55	Weir Max Depth (ft)	1.00
Culv WS Outlet (ft)	392.46	Weir Avg Depth (ft)	0.68
Culv Nml Depth (ft)	4.62	Weir Flow Area (sq ft)	148.73
Culv Crt Depth (ft)	3.85	Min El Weir Flow (ft)	394.39

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9589

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.96	15.99	396.01	17.57	396	20.76	395.29	25.99	395.01
29.32	394.71	29.33	394.38	39.55	392.85	60.92	392.22	95.59	390.4
100.13	389.82	106.73	388.97	116.38	387.66	117.95	386.81	124.68	386.27
130.57	386.46	134.27	387.9	134.7	388	137.88	388.68	144.79	390.87
157.88	392.09	174.45	391.81	191.33	392.09	218.95	392.7	229.4	392.07
229.72	392.09	239.13	392.16	239.87	392.21	251.99	392.37	252.81	392.33
253.84	392.05	264.78	392.06	265.66	392.35	265.82	392.37	274.13	392.48
275.38	392.39	275.8	392.37	280.37	392.38	285.74	392.34	288.04	392.35
289.04	392.37	289.76	392.35	291.67	392.43	292.2	392.41	293.73	392.52
294.34	392.49	295.48	392.61	297.43	392.5	299.89	392.58	301.52	392.7
302.57	392.72	317.67	393.33	321.58	393.35	323.43	393.4	328.45	393.52
336.04	393.41	337.54	393.43	342.18	393.53	347.45	393.83	351.46	393.93
353.19	394	353.68	394.06	355.32	394.12	356.64	394.21	359.84	394.23
363.57	394.38	408.86	396	412.96	396.28	417.56	396.44		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	106.73	.04	137.88	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
106.73	137.88	74.95	89.37	103.36	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	104.8	391.2	F
140.7	417.56	391.2	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9499

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
       0  397.42    1.16  397.39   10.04     396   12.41   395.1    15.2     394
   19.89   392.3   20.69     392   30.94  390.03   58.35  389.54   78.64   389.7
   91.71  389.72   91.72  389.72   95.66  389.73  106.35   385.4  108.48  385.35
  121.85  388.31  126.28  389.29   134.6  389.39  148.99  387.24  154.41  388.47
  172.52  389.82  180.01     390  192.12     392  192.21  392.01   204.6     394
  211.88  395.17  217.46     396  219.87  396.49  223.11  397.11  227.54     398
  230.91  398.56  233.71     399  240.41     400  246.88  400.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   95.66     .04  126.28    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         95.66  126.28            98.65   101.8  104.92             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9398

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   398.2    5.52  398.06    6.45     398   10.27  396.93   13.95     396
   17.15   395.1   21.18     394   22.21  393.72   23.21  393.45   25.97  392.71
   28.56     392   35.43  391.01   38.29   390.6   43.03     390   43.15  389.99
   46.04  389.74   46.81   389.7   47.09  389.68   47.37  389.65   55.11   389.4
   55.76  389.36   56.28  389.32   56.92  389.26   63.39  388.58   69.33  388.73
    71.4  388.44   71.45  389.03   80.15  389.63   92.99  388.55  114.44  388.98
  120.46  388.94  120.47  388.94  128.65  388.89  134.08  384.53  135.79  384.42
  141.88  384.75  145.59  388.85  150.79  388.83  167.65  388.75  186.81  388.92
  200.79  389.39   202.6     390  212.88  391.15  214.18     392  222.75   392.3
  224.12  392.62  227.87  392.98  232.15  393.19  232.46  393.21  235.68  393.41
  238.89  393.56  241.36  393.69  244.69  393.87  245.13  393.89  247.11     394
   255.3  394.93  262.09  395.66  265.18     396  268.55  396.34  272.92  396.76
  279.66  397.44  280.66  397.53  281.55  397.61  285.79     398   291.8  399.12
  296.37     400   301.1  400.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  128.65     .04  145.59    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        128.65  145.59            97.24   96.47   94.54             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 9301

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  400.19    3.07     400    4.08  399.94     4.2  399.94   13.57  399.39
    15.2  399.29   20.44  399.07   21.01  399.05   21.75  399.02   22.33     399
   33.53  398.93   34.16  398.91   34.62  398.89   50.07  398.18   51.97  398.04
   52.52     398   56.81  396.58   58.64     396   59.61  395.91   64.07  395.25
   72.56     394   73.12  393.94    74.3  393.83    84.4  392.97   90.89  392.65
   97.02  392.35  101.28  392.17  101.59  392.16  101.86  392.14  101.98  392.14
  104.04     392   106.2  392.22  109.76  392.28  110.09  392.26   110.2  392.25
  111.04  392.21   113.1  392.09  140.12  387.83   145.5  387.55  154.95  387.07
  157.77  384.36  160.52  383.31  166.94  384.65  171.14  388.29  175.86  388.27
  175.87  388.27  183.69  388.23  215.21  388.62  222.39   389.2  234.24  392.69
  252.67  392.11  269.21  391.61  287.95  393.96  291.68     394  304.65  395.18
  314.29  395.71  317.24  395.93  317.28  395.93  318.14     396  320.84  396.21
   321.8   396.3  324.25  396.51  326.08  396.68  329.75  397.01  336.95   397.7
  338.16  397.81  340.03     398  341.44  398.43   347.8     400  351.27  400.78
  352.31  401.05

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  154.95     .04  171.14    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        154.95  171.14           109.84     105  100.42             .1       .3
```

Blocked Obstructions num= 1

Sta L	Sta R	Elev
42.5	98.1	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 9196

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.06	3.11	399.1	7.66	399.14	8.21	399.14	11.14	399.2
14.16	399.24	15.16	399.23	16.06	399.21	16.45	399.2	16.79	399.18
17.07	399.17	44.77	399	46.3	398.96	57.79	398.17	58.05	398.12
58.52	398.07	59.24	398.01	59.47	398	59.81	397.95	60.63	397.83
60.69	397.82	61.36	397.83	62.34	397.8	62.8	397.77	63.34	397.77
63.74	397.73	73.15	396.86	74.17	396.76	74.98	396.67	80.24	396
91.29	394.71	96.77	394	103.28	393.2	108.02	392.64	109.29	392.48
110.44	392.34	113.4	392	129.6	390	133.01	389.51	134.1	389.41
135.16	389.31	138.39	388.96	141.78	388.59	143.61	388.38	145.61	388.15
146.23	388.08	146.93	388.04	146.98	388	156.92	387	192.18	386.94
214.32	387.26	224.37	387.23	224.38	387.23	230.17	387.21	234.05	385.77
239.97	384.81	241.03	384.18	243	383.81	247.36	387.68	256.1	387.12
258.34	386.98	282.41	388.4	293.08	392.68	309.62	391.47	323.53	392.22
323.58	392.18	354.2	394	361.45	395.27	365.79	396	370.25	397.12
373.9	398	375.39	398.33	383.13	400	386.3	400.73	391.87	402
395.39	402.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	230.17	.04	247.36	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
230.17	247.36	197.07	208.89	195.59	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
11	50.8	405

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8987

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.15	2.15	402.17	3.39	402.13	6.04	402.17	12.51	402.07
13.01	402.08	14.07	402.07	15.03	402.07	16.62	402.1	16.88	402.09
17.7	402.05	18.67	402	24.82	401.62	50.49	400	71.91	398.02
72.1	398	72.14	397.99	82.9	396	83.83	395.8	92.09	394
100.48	392.04	100.64	392	100.82	391.96	101.02	391.92	110.17	390
121.03	388.29	142.19	386.02	152.75	385.4	161.75	385.92	161.76	385.92
161.94	385.93	170.22	385.8	172.51	383.34	178.25	382.77	183.07	383.36
185.81	386.43	193.25	386.15	202.96	385.78	222.78	385.7	249.39	385.47
263.78	390.18	301.3	390	301.69	390.04	302.4	390.1	313.7	391.1
324.37	392	326.83	392.6	329.22	393.19	332.48	394	335.16	394.95
338.19	396	340.18	396.58	342.55	397.27	344.45	397.82	345.03	398
346.35	398.38	351.77	400	352.66	400.28	356.31	401.47	357.07	401.72
357.94	402	358.9	402.3	364.45	404	365.62	404.4	369.07	405.49

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	170.22	.04	185.81	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
170.22	185.81	233.38	233.77	226.61	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8753

INPUT

Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.84	3.57	392.36	4.48	392.24	6.24	392	14.25	391.04
22.57	390	39.19	388.36	42.66	388	43.14	387.95	44.71	387.76
45.13	387.7	53.93	387	55.07	386.91	55.91	386.89	59.98	386.86
67.22	387.07	71.26	386.74	71.58	386.73	74.94	386.49	75.24	386.48
79.99	386.13	80.09	386.12	81.64	386	140.52	386.79	179.2	384.55
199.15	384.94	212.08	384.65	214.59	384.6	226.78	384.34	229.61	382.96
231.97	382.55	232.78	382.41	236.12	381.99	237.03	382.27	237.82	384.79
243.64	385.02	243.65	385.02	246.4	385.13	254.4	387.48	262.5	388.23
269.36	387.48	284.51	387.86	284.57	388.25	284.6	388.25	284.74	388.27
302.51	390	304.49	390.31	314.62	392	318.02	392.86	322.27	394
323.63	394.41	327.41	395.54	328.32	395.82	328.9	396	329.96	396.36
334.49	398	337.27	399.01	339.54	400	340.77	400.45	344.57	402
346.47	402.7	350	404	351.3	404.47	352.94	405.01	353.27	405.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	226.78	.04	237.82	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
226.78	237.82	178.41	174.76	168.62	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8579

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400.17	3.31	400	17.74	399.07	34.62	398	35.22	397.93
46.41	397.26	51.75	396.96	59.26	396.5	60.57	396.41	63.23	396.27
68.83	396	75.46	394.89	76.44	394.72	79.84	394.17	80.17	394.11
80.95	394	93.93	392.04	94.14	392	94.63	391.88	95.67	391.71
95.96	391.67	96.13	391.66	102.2	391.37	103.3	391.28	107.14	391.06
111.25	390.74	112.8	390.64	116.2	390.33	116.74	390.29	119.66	390
124.86	389.68	126.23	389.59	129.14	389.43	130.57	389.33	132.66	389.17
135.1	389.03	138	388.83	141.06	388.61	147.32	388.13	148.92	388
153.19	387.46	172.43	385.68	186.19	383.82	200.87	383.46	218.33	383.53
227.14	382.25	231.16	382.93	233.37	383.31	235.71	383.61	242.87	381.38
248.28	381.13	250.03	381.37	251.19	383.67	263.28	383.69	264.68	383.7
279.14	384.5	298.66	387.04	300.8	387	315.88	390	320.59	391.65
321.5	392	322.64	392.54	325.53	394	328.7	395.54	329.55	396
332.04	397.23	333.33	398	334.37	398.44	338.88	400	339.68	400.16
340.45	400.35	347.58	402	352.32	402.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	235.71	.04	251.19	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
235.71	251.19	198.29	204.23	206.04	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 8374

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	401.05	.39	401.02	14.71	400	17.51	399.78	17.87	399.76
18.37	399.72	19.63	399.64	20.25	399.6	22	399.47	31.49	398.77
42.12	398	43.17	397.92	43.74	397.88	48.54	397.52	49.54	397.46
51.19	397.35	54.98	397.06	67.52	396.4	67.98	396.37	72.6	396.03
73	396	77.65	395.72	79.49	395.6	80.67	395.52	82.29	395.41
83.66	395.31	85.08	395.2	104.07	394	108.69	393.72	110.21	393.61
111.59	393.51	116.39	393.15	122.53	392.72	129.15	392.19	131.43	392
140.54	390.76	146.03	390	147.63	389.84	149.67	389.65	158.7	388.75
166.96	388	174.92	387.31	176.26	387.21	182.29	386	189.22	384.97
217.89	382.7	254.28	382.69	262.97	382.52	262.98	382.52	272.5	382.34
274.84	380.5	276.51	380.31	286.75	380.32	292.45	384.62	293.85	384.83
305.64	386.6	321.38	388	325.59	388.89	331.68	390	334.17	390.71

```
  336.02   391.3   338.3     392  343.97  393.91  344.22     394  345.13  394.36
  349.46     396  350.95   396.6  354.45     398  356.99  399.37  358.18     400
  359.59  400.71  360.34  401.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   272.5     .04  292.45    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         272.5  292.45            144.9  145.45  146.03             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8229

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  394.36    5.81  394.06    6.29     394    7.37  393.95   45.41     392
   69.28  390.22   72.15     390   72.18     390   72.26  389.98   72.54  389.95
      73  389.89   74.69  389.72   75.45  389.65   75.92  389.61   75.99   389.6
   79.77  389.37    82.3  389.25  100.97  388.39  107.53     388  110.36   387.9
  110.76   387.9  112.75  387.84  132.43     386  139.68   385.1  170.44  382.68
  187.75  382.12  197.62  382.13  197.63  382.13  207.39  382.14  209.28   380.1
  212.63  379.79  215.85  380.15  217.64  381.75  227.71  382.65  227.84  382.66
  243.37  383.19  265.96  384.67     268  384.46  288.88     388  293.09  388.12
  308.33  389.98  308.55  389.98  309.46  389.99  310.08     390  315.47   391.1
  319.76  391.98   319.9     392  320.02  392.04  321.07  392.37     326   393.9
  326.33     394   328.6  394.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  207.39     .04  217.64    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        207.39  217.64           135.27  135.16  134.66             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 8094

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  394.62    2.48   394.2    3.72     394     3.8  393.98     4.1  393.92
    4.62  393.84    5.04  393.78    5.44  393.73     5.7   393.7   24.53  392.35
   27.13   392.1   27.41  392.08   28.22     392   37.38  391.13   48.65     390
   55.52  389.55   79.43  388.11   79.45  388.11    79.5   388.1   79.73  388.02
   79.79     388   96.53  386.44   99.06   386.2  101.25     386  106.88  385.44
  109.08  385.26  113.06  384.89   116.1  384.62  119.34   384.4  120.88  384.28
  121.97  384.22  122.35  384.19  122.91  384.14  134.05   383.5  144.72   382.7
  163.81  381.63  182.02  380.88  183.82  381.01  183.84  381.01  194.28  381.76
  195.27  379.09  198.85  378.24  204.43  378.53  207.68  381.82  215.37  381.59
  219.87  381.46  228.39  381.39  231.06  382.03  246.18   381.9  274.41  383.36
  311.66  389.55  311.72  389.81  311.73  389.81  329.62     392  337.85  393.59
  339.81     394  342.65  394.79  346.84     396  349.21  396.76  352.92     398
  358.41  399.96  358.53     400  358.64  400.03  368.44     402  368.97  402.04
  369.04  402.04  369.13  402.05  375.87  402.56  376.87  402.63  378.22  402.73
  382.48  403.06  386.91  403.38  388.95  403.53  390.87  403.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  194.28     .04  207.68    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        194.28  207.68           138.21  139.81  140.01             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 7954
```

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	390.87	1.06	390.76	5.56	390.36	8.09	390.17	9.7	390.06
12.95	389.88	15.86	389.75	20.41	389.55	21.37	389.49	22.17	389.45
26.06	389.27	27.8	389.18	29.65	389.1	31.21	389.02	32.58	388.93
33.19	388.89	40.18	388.65	41.65	388.54	44.29	388.45	47.14	388.32
47.67	388.28	49.22	388.2	50.93	388.11	52.62	388	54.06	387.89
58.14	387.52	60.02	387.34	70.48	386.32	73.92	386	75.83	385.87
81.99	385.49	86.05	385.25	88.16	385.06	94.21	384.69	95.33	384.57
98.59	384.23	99.42	384.17	100.92	384	114.44	382.88	125.39	382
130.61	381.95	156.45	380.05	188.73	379.73	199.32	380.23	210.56	380.77
212	378.9	214.38	377.79	218.13	379.54	221.11	380.65	229.58	380.68
231.23	380.69	249.42	380.31	281.8	380.49	295.4	380	299.39	381.16
302.17	382	305.31	382.93	310.71	384.55	316.22	386	323.56	387.01
330.85	388	342.34	389.5	345.84	390	347.98	390.9	350.48	392
352.14	392.75	355.01	394	357.39	394.99	359.91	396	362.57	396.94
365.15	397.64	366.49	398	375.99	398.82				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	210.56	.04	221.11	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
210.56	221.11	155.28	153.64	152.99	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7800

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.23	6.4	388.77	18.95	388	32.05	387.12	34.38	386.96
40.95	386.52	41.74	386.47	42.88	386.38	48.62	386	49.93	385.92
50.74	385.86	62.21	385.1	65.97	384.84	73.9	384.32	75.81	384.2
77.92	384.08	78.06	384.07	79.37	384	79.61	383.95	79.79	383.92
79.9	383.91	81.2	383.76	81.59	383.72	81.85	383.71	82.72	383.74
88.11	383.68	89.08	383.64	89.68	383.58	90.64	383.53	91.54	383.48
92.48	383.38	93.55	383.29	96.76	383	98.06	382.88	99.04	382.78
102.88	382.37	106.07	382	129.44	380.05	152.75	378.79	172.94	379.22
186.27	379.75	187.83	378.84	191.51	378.79	198.74	378.73	200	379.32
200.83	379.7	211.69	379	223.63	379.27	230.99	379.1	240.48	378.88
259.49	379.02	278.05	378.97	305.83	379.75	307.52	380	314.08	381.6
315.71	382	316.56	382.21	318.83	382.81	323.87	384	331.19	385.58
333.53	386	340.6	386.91	350.42	388	352.19	388.23	353.07	388.36
356.29	388.87	360.39	389.49	361.84	389.72	363.36	390	364.77	390.43
366.25	390.85	370.11	392	372.25	392.58				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.27	.04	200.83	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.27	200.83	252.37	252.82	252.55	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7548

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.07	.78	384	5.11	383.66	7.63	383.5	11.97	383.17
14.64	382.99	17.76	382.76	24.91	382.21	27.52	382	28.85	381.83
29.51	381.79	32.65	381.46	35.07	381.21	46.63	380	59.52	379.12
61.36	379	65.17	378.74	75.34	378.13	77.34	378.05	77.62	378
83.55	378.07	85.43	378.08	88.35	378.07	95.64	378.09	101.54	378.13
108.95	378.07	110.55	378.08	119.01	378.06	138.28	378.06	168.39	378.45
198.66	378.25	217.53	377.85	219.53	377.83	219.55	377.83	230.43	377.75
232.68	376.67	235.51	375.57	238.58	376.37	240.21	377.92	249.56	377.9
258.68	377.89	288.89	377.64	323.87	376.92	330.2	377.07	336.47	378

340.56	378.61	343.65	379.04	345.35	379.25	349.52	379.62	352.72	379.89
353.04	379.92	353.25	380	353.89	380.15	356.3	380.75	360.75	382
369.15	384	377.97	385.33	382.29	386	383.74	386.27	393.23	388
398.11	389	402.86	390	406.24	390.27	406.63	390.26	409.53	390
411.75	389.85	413.2	389.77	418.1	389.46	420.07	389.37	423.04	389.17
425.75	388.96	431.8	389.4	440.42	390	442.9	390.41	445.97	390.94

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	230.43	.04	240.21	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
230.43	240.21	174.12	180.41	186.79	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7367

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.88	17.18	384.04	17.79	384	19.31	383.69	27.57	382
33.56	381.11	40.22	380	72.92	378	75.63	377.86	83.54	377.49
84.36	377.49	86.2	377.54	86.99	377.54	87.28	377.52	88.37	377.57
88.81	377.59	98.7	377.77	99.18	377.78	99.84	377.77	153.1	379.18
184.66	379.38	209.09	379.76	209.11	379.76	216.46	379.87	218.28	379.16
220.46	378.71	224.14	378.3	227.18	379.5	239.26	379.44	239.27	379.44
256.12	379.35	283.76	378.85	301.95	376	306.84	375.99	309.51	375.94
311.37	375.92	312.47	375.93	313.98	375.94	315.54	376	317.31	376.05
328.94	376.26	339.82	376.48	386.56	377.48	387.24	377.47	389.22	377.48
389.83	377.49	393.84	377.67	396.67	377.79	398	377.85	399.4	377.89
400.73	377.95	403.02	378	405.65	378.1	407.78	378.19	409.29	378.26
410.92	378.34	413.44	378.46	417.48	378.69	420.02	378.83	428.31	379.29
429.6	379.36	436.31	379.72	436.88	379.75	441.68	380	449.79	380.68
452.35	380.9	458.41	381.46	460.97	381.69	464.19	382	470.57	382.96
477.61	384	480.68	384.57	488.87	386	495.27	386.99	498.55	387.34

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	216.46	.04	227.18	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
216.46	227.18	143.37	150.84	157.8	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7216

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.75	1.08	385.65	5.95	385.32	10.54	384.89	18.99	384.19
19.48	384.13	19.51	384.13	19.72	384.03	19.77	384.03	19.83	384
21.34	383.6	24.22	382.82	25.18	382.55	27.46	382	33.57	381.07
41.34	379.98	60.13	379	65.81	378.72	75.73	378.27	77.55	378.18
79.67	378.07	80.08	378.07	80.17	378.06	81.18	378	81.5	377.95
81.94	377.89	82.7	377.88	134.09	376.01	134.34	376	135.9	375.99
142.56	375.98	148.85	376	148.97	376	159.54	375.75	186.07	376.5
205.76	375.8	205.79	375.8	221.2	375.26	236.22	376.17	236.23	376.17
243.36	376.61	267.12	376.15	298.57	377.1	324.96	378	344.89	379.72
346.99	379.9	348.24	380	355.59	380.52	358.24	380.72	369.12	381.55
372.54	381.8	375.03	382	377.33	382.49	384.79	384	385.68	384.2
393.83	386	394.81	386.17	399.71	387.05	405.49	388	406.42	388.18
407.5	388.41	413.63	389.1	417.54	389.6	418.61	389.74	420.77	390
421.3	390.07	421.95	390.14	429.79	391.08	433.06	391.43	434.12	391.56
434.45	391.61	438.52	392	445.08	392.32	449.48	392.54	451.09	392.66

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.07	.04	243.36	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.07	243.36	190.28	186.42	181.46	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
377.1	439.5	390	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 7030

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.29	2.41	387	10.05	386	29.45	384.45	32.78	384.15
33.33	384	36.52	383.46	40.31	382.87	43.31	382.38	46.06	382
46.12	381.98	48.59	381.84	49.64	381.82	49.97	381.8	50.4	381.79
50.62	381.77	71.01	380.53	81.91	380	92.52	379.05	103.93	378
123.79	376.72	134.74	376.11	135.07	376.05	135.57	376	135.6	375.99
137.36	375.81	139.35	375.62	140.29	375.67	145.45	375.59	151.15	375.29
153.13	375.29	164.88	375.94	165.28	375.96	165.81	376	175.82	375.48
205.64	375.09	233.21	375.65	248.05	375.46	259.75	375.31	261.56	373.84
262.29	373.43	263.48	373.62	268.09	375.54	278.5	375.62	279.83	375.63
309.7	376.93	312.89	376.93	319.01	378	322.75	379.67	328.88	379.92
332.16	380	333.98	380.26	345.53	382	358.26	384	368.51	385.52
371.9	386	379.53	387.21	385.4	388	395.57	389.56	398	389.92
398.64	390	402.14	390.27	406.61	390.59	410.26	390.83	412.74	390.96
415.65	391.11	416.49	391.16	419.22	391.29	423.04	391.64	423.34	391.66
427.09	392	428.37	392.13	432.56	392.47	446.6	393.09		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	259.75	.04	268.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
259.75	268.09	140.13	137.19	133.92	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
372.8	404.1	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6893

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.2	2.38	382.99	8.39	382.4	12.65	382	20.07	381.43
21.04	381.32	23.89	381.07	32.28	380	33.24	379.94	36.89	379.63
54.28	378.25	56.67	378	75.57	376.96	78.59	376.8	93.69	376
94.91	375.96	96.44	375.86	117.75	374.81	136.62	374	152.27	373.6
154.13	372.23	157.36	371.8	159.62	372.29	160.73	373.73	187.35	373.86
202.43	373.44	213.2	373.14	214.26	371.39	217.55	370.68	220.85	371.53
222.2	372.36	232.55	373.36	240.97	374.18	259.97	375.25	279.8	378.38
290.19	380	292.23	380.3	302.91	382	311	382.83	315.48	383.17
321.02	383.61	322.67	383.75	325.93	384	327.14	384.17	327.77	384.24
330.51	384.6	331.06	384.66	331.73	384.74	332.6	384.85	333.79	385.01
335.83	385.3	339.56	385.84	340.65	386	353.87	389.13	355.81	389.6
357.43	390	357.61	390.01	361.03	390.33	362.39	390.43	362.61	390.44
365.01	390.49	366.06	390.54	368.05	390.54	368.79	390.56	380.19	390.59
388.25	390.86								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	213.2	.04	232.55	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
213.2	232.55	124.46	126.53	128.02	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
333.6	364.1	395

CROSS SECTION

RIVER: Plumtree

REACH: Plumtree RS: 6766

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.56	7.75	380.34	9.62	380.18	11.59	380.1	27.69	379.6
34.11	379.36	42.51	378.88	44.96	378.81	50.68	378.9	55.82	378.75
59.91	378.59	69.06	378.34	72.96	378.1	76.53	377.98	77.17	377.98
78.44	377.94	85.15	377.54	110.99	376.09	111.42	376	115.69	375.87
158.02	374.36	160.91	374	186.61	372.66	212.26	373.01	237.02	373.1
242.58	372.73	249.33	372.28	253.11	370.17	254.8	369.76	259.27	370.49
262.36	373.11	274.27	374.24	274.29	374.25	278.85	374.68	293.57	375.12
310.54	376.12	337.65	378	341.5	378.38	344.84	378.75	345.88	378.88
348.32	378.95	351.5	379.16	353.85	379.26	354.2	379.31	358.69	379.46
365.18	379.62	366.28	379.73	367.47	380	369.55	380.4	370.86	380.58
373.19	381.02	375.37	381.31	379.99	382	390.01	384	392.8	384.16
404.5	384.66	418.06	384.49	421.86	384.5	423.36	384.56	430.23	384.62
434.86	384.68	447.58	385.29	449.06	385.3	453.71	385.19	463.39	384.68
463.96	384.68	468.82	384.87	472.42	384.83				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	237.02	.04	262.36	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
237.02	262.36	103.31	103.53	104.46	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
367.4	402.8	390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6663

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.81	5.71	387.58	42.61	386.42	45.32	386.36	48.81	386.32
50.39	386.29	52.99	386.11	54.86	386	63.52	384	72.4	382
77.53	381.09	78.45	381.02	81.39	381.16	82.73	381.16	83.84	381.06
85.14	381.03	90.04	380.7	91.84	380.48	94.76	380	107.44	379.41
109.18	379.29	112.44	379.13	115.99	378.92	130.42	378	130.89	377.95
160.38	376.65	180.56	376.17	184.97	375.98	189.81	375.85	195.23	375.67
199.49	375.58	206.72	375.37	221.58	374.58	234.91	374	259.85	373.17
294.97	372.71	311.02	372.56	311.04	372.56	319.15	372.49	321.59	371.64
322.41	371.16	323.12	369.4	326.04	369.26	336.33	370.36	339.84	373.35
341.19	373.46	341.21	373.46	355.51	374.57	385.65	374.57	391.75	376
435.14	377.35	436.73	377.48	438.03	377.5	441.59	377.71	445.02	378
461.23	380	462.22	380.21	465.24	380.76	470.16	381.69	472.06	382
479.53	383.54	481.93	384	486.28	384.27	488.32	384.35	505.54	384.31
515.18	384.49	518.45	384.46	533.6	385.11	535.47	385.12	546.46	384.34
548.83	384.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	319.15	.04	339.84	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
319.15	339.84	90.58	94.53	97.72	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
49.7	87.5	390	451.6	492.3	390

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6568

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.88	11.84	387.56	41.49	386.42	44.7	386.32	47.75	386.21
48.2	386.2	51.49	386.19	52.85	386.15	53.93	386.14	56.03	386.06

```
   57.13     386    62.1  385.38   72.23  384.41   73.61  384.08      74     384
   78.37  383.37   81.15  382.86   83.41  382.52   85.95     382   87.39  381.89
   89.26  381.77  106.91  380.23  109.52  380.12  112.81     380  123.86  379.46
  127.28  379.12  128.69  379.02   131.4  378.74  133.26   378.6  138.52     378
  144.95  377.67  154.93   377.2  167.84  376.57  179.91     376  190.81  375.63
  206.03  375.07  215.11  374.75  231.43  374.02  231.55     374  251.99  373.42
  286.56  372.07  303.48     372   303.5     372  307.17  371.99  309.55  369.54
  314.39  368.65  318.89   369.1  320.63   372.7  333.89  373.01   335.3  373.05
  354.94  374.07     388  376.19  406.97     378  432.51     380  436.02  380.51
  440.79  381.03  449.38     382  453.12  382.55  464.72  383.92  465.61     384
  472.99  385.68  474.22     386  482.07  387.25  486.94     388  503.32     390
  506.03  390.12  516.08  390.61  558.49  391.41  562.74  391.48  574.89  391.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  307.17     .04  320.63    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        307.17  320.63           112.95  114.27  115.74             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    56.9      70     395     480   528.4     395

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6454

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  382.74    7.58  382.41   11.61  382.36   18.35  382.85   20.37  382.77
   21.37  382.79   29.92  382.63   32.76   382.6   39.52  382.39   47.69     382
   53.79  381.37   55.59  381.15   62.67     380   71.51  378.91   77.75     378
   80.09  377.84   81.89  377.87   84.21     378   85.66  378.04   91.88  378.33
   93.96  378.47  103.28  378.95  112.28  379.59  117.21  379.85  119.53     380
  122.79  380.14  126.31  380.18  133.22     380  134.81  379.84  137.81  379.45
  141.48  378.79  145.53     378  155.89     376  166.96  373.47  173.88  373.47
  191.09  372.71   200.3  371.97   201.3  371.89  212.37  370.12  213.27  368.43
  215.67   368.3  218.52  368.67  224.12  371.79  230.68  372.35  245.49   373.6
  269.36  373.99  286.75  373.99  309.85     374  325.09  374.82  342.86  375.85
  347.28  376.79   353.2     378   358.5  378.88  365.42  379.84  366.88     380
   374.5  381.38  377.36     382  383.44  382.65  394.15     384  397.08  384.34
   402.2  384.86  404.24  385.01  407.53   385.3  408.74  385.37  414.73   385.6
  419.68  385.94   428.4  386.28   432.3  386.26  436.12  386.41  452.71  387.66
  457.68     388   470.4  388.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   201.3     .04  224.12    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         201.3  224.12           102.69  103.78  104.74             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   120.4   125.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6350

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  384.25    2.84  383.98    4.85  383.88   29.21  382.05   29.42     382
   31.52  381.83   32.17   381.8   32.46  381.78   34.04  381.73   35.06  381.64
   53.47   380.4   61.23     380   61.52  379.95    62.6  379.83   66.18  379.72
   67.82  379.63   68.74  379.59  124.99     378  139.11  377.29  159.11  376.32
  161.58  376.22  169.81     376  175.65  375.83  176.25  375.83     201  374.61
  220.13  373.39  226.47  371.43  230.05  370.32  235.85   369.8  238.08  367.36
  241.57  366.97   246.9  368.37  249.25  372.63  256.57  374.75  266.03   377.5
  266.59     378  329.45     378  332.13  377.82  334.24  377.69  335.82  377.59
  339.75  377.35  347.23  377.86  349.56     378  359.53  377.16  360.29  377.08
  378.66     378  382.15  378.35  383.71  378.55  386.87  378.91  388.05  379.05
```

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   394.9     380  395.88  380.18   400.2  380.85  405.44  381.69  407.44     382
  409.21  382.33  411.05   382.5  417.68  383.44  420.21  383.65  423.51  383.96
     426  384.23  427.13   384.2  428.56   384.3  433.67  384.73  437.93  385.11
  441.27  385.38  449.14  386.13  468.97     388

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  220.13     .04  249.25    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        220.13  249.25            52.33   53.78   55.24             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   264.6   271.9     390       F
   325.6   345.5     390       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   271.9   325.6     390

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 6296

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  386.85    5.73  386.49   14.33     386   18.53  385.51   23.71  384.86
   25.79  384.56   29.31     384   30.39   383.8   37.57  382.43   39.51  382.02
   41.76  381.69   54.85     380   70.55   379.5   94.75  378.51   95.08  378.49
   95.41  378.49   98.12  378.36   99.34  378.31  103.26   378.2  106.66  378.14
  108.29  378.08  109.53  378.06  141.16  376.68  172.07   375.5  191.67  374.94
  202.55  371.87  209.11  370.03  214.77  369.87  215.93  367.68  217.55  367.41
  219.25  367.49  221.17     369   223.1  368.24  224.71   368.4  227.95  371.85
  232.63  373.42  243.36  377.02  259.81   378.9   289.8  379.01  303.36  379.05
  308.59  379.33  337.18     380  341.87  380.42  350.42  381.43  353.73   381.8
  355.27     382   358.1  382.65  364.11     384  366.25  384.53  371.48  385.78
  372.48     386  389.73     388   393.2  388.71  393.82  388.77  394.89  388.96
  396.31  389.18  398.15  389.31  401.07   389.7  406.01  389.86  406.78  389.82
  409.23  389.97  409.46     390  423.29  390.45  424.72  390.55  426.95  390.71
  438.44   391.5  444.21  391.79  445.96     392  456.32     394  459.74  394.71
   466.2     396  479.75     398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  214.77     .04  227.95    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        214.77  227.95            98.47   99.02   99.58             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   183.5   377.1       F
   269.7  479.75   377.1       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   378.4   432.4     395

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 6250

INPUT
Description: Hearthstone Road
Distance from Upstream XS =      41
Deck/Roadway Width        =      30
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  109.53  378.06           126.2 378.165           148.4 377.583
   171.8 377.249           194.8 377.026           219.5 377.097
   242.2 377.664           267.9 378.981           291.3 380.656
   311.7 383.135           336.6 385.512          479.75     398

Upstream Bridge Cross Section Data
```

Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.85	5.73	386.49	14.33	386	18.53	385.51	23.71	384.86
25.79	384.56	29.31	384	30.39	383.8	37.57	382.43	39.51	382.02
41.76	381.69	54.85	380	70.55	379.5	94.75	378.51	95.08	378.49
95.41	378.49	98.12	378.36	99.34	378.31	103.26	378.2	106.66	378.14
108.29	378.08	109.53	378.06	141.16	376.68	172.07	375.5	191.67	374.94
202.55	371.87	209.11	370.03	214.77	369.87	215.93	367.68	217.55	367.41
219.25	367.49	221.17	369	223.1	368.24	224.71	368.4	227.95	371.85
232.63	373.42	243.36	377.02	259.81	378.9	289.8	379.01	303.36	379.05
308.59	379.33	337.18	380	341.87	380.42	350.42	381.43	353.73	381.8
355.27	382	358.1	382.65	364.11	384	366.25	384.53	371.48	385.78
372.48	386	389.73	388	393.2	388.71	393.82	388.77	394.89	388.96
396.31	389.18	398.15	389.31	401.07	389.7	406.01	389.86	406.78	389.82
409.23	389.97	409.46	390	423.29	390.45	424.72	390.55	426.95	390.71
438.44	391.5	444.21	391.79	445.96	392	456.32	394	459.74	394.71
466.2	396	479.75	398						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	214.77	.04	227.95	.075

Bank Sta: Left Right Coeff Contr. Expan.
214.77 227.95 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	183.5	377.1	F
269.7	479.75	377.1	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
378.4	432.4	395

Downstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
93.6	378		109	378.165		131.9	377.583	
155.7	377.249		179.1	377.026		204.2	377.097	
227.3	377.664		253.6	378.981		277.3	380.656	
306.1	383.135		331.6	385.512		338.94	386	

Downstream Bridge Cross Section Data
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39
225.24	370.02	227.55	372.22	227.56	372.23	229.54	374.1	255.33	377.5
286.19	380.21	290.61	381.26	291.85	381.66	302.93	382	306.38	382.34
307.8	382.5	315.82	383.3	321.82	384	332.19	385.15	338.94	386
354.08	387.58	358.3	388	361.22	388.32	364.98	388.73	371.17	389.42
376.5	390	377.44	390.09	382.23	390.53	383.73	390.65	389.09	391.12
395.34	391.57	396	391.63	401.1	392	405.04	392.54	406.26	392.72
413.74	394	418.95	394.57	420.55	394.73	421.65	394.84	427.34	395.45
432.93	395.77	433.17	395.8	434.1	395.89	438.66	396.46	441.16	396.79
443.14	397.11								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	197.54	.04	225.24	.075

Bank Sta: Left Right Coeff Contr. Expan.
197.54 225.24 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	180.5	373	F
229.3	443.14	373	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
23.7	63.4	395

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =

```
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              24.8   62.23     .013     .013        0                  .5               1
Upstream   Elevation =  367.33
           Centerline Station =  217
Downstream Elevation =  367.76
           Centerline Station =  210

Culvert Name     Shape      Rise    Span
Culvert #2      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              24.8   62.41     .013     .013        0                  .5               1
Upstream   Elevation =  367.28
           Centerline Station =  223
Downstream Elevation =  366.19
           Centerline Station =  215

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         77.82    Culv Full Len (ft)
  # Barrels                     1    Culv Vel US (ft/s)          6.26
  Q Barrel (cfs)             77.82    Culv Vel DS (ft/s)          8.25
  E.G. US. (ft)             372.10    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             371.93    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              370.62    Culv Frctn Ls (ft)          0.21
  W.S. DS (ft)              370.57    Culv Exit Loss (ft)         1.01
  Delta EG (ft)               1.48    Culv Entr Loss (ft)         0.30
  Delta WS (ft)               1.36    Q Weir (cfs)
  E.G. IC (ft)              371.57    Weir Sta Lft (ft)
  E.G. OC (ft)              372.11    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        371.20    Weir Max Depth (ft)
  Culv WS Outlet (ft)       370.57    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.67    Min El Weir Flow (ft)     377.04


CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        103.80    Culv Full Len (ft)         30.04
  # Barrels                     1    Culv Vel US (ft/s)          8.26
  Q Barrel (cfs)            103.80    Culv Vel DS (ft/s)          9.25
  E.G. US. (ft)             373.28    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             373.16    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              371.16    Culv Frctn Ls (ft)          0.16
  W.S. DS (ft)              371.11    Culv Exit Loss (ft)         1.27
  Delta EG (ft)               2.11    Culv Entr Loss (ft)         0.53
  Delta WS (ft)               2.06    Q Weir (cfs)
  E.G. IC (ft)              372.74    Weir Sta Lft (ft)
  E.G. OC (ft)              373.29    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        371.33    Weir Max Depth (ft)
  Culv WS Outlet (ft)       371.11    Weir Avg Depth (ft)
  Culv Nml Depth (ft)                 Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         3.09    Min El Weir Flow (ft)     377.04


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        167.59    Culv Full Len (ft)         62.23
  # Barrels                     1    Culv Vel US (ft/s)         13.34
  Q Barrel (cfs)            167.59    Culv Vel DS (ft/s)         13.34
  E.G. US. (ft)             378.29    Culv Inv El Up (ft)       367.33
  W.S. US. (ft)             378.21    Culv Inv El Dn (ft)       367.76
  E.G. DS (ft)              373.49    Culv Frctn Ls (ft)          0.85
  W.S. DS (ft)              373.29    Culv Exit Loss (ft)         2.57
  Delta EG (ft)               4.80    Culv Entr Loss (ft)         1.38
```

Delta WS (ft)	4.92	Q Weir (cfs)	290.75
E.G. IC (ft)	377.10	Weir Sta Lft (ft)	99.83
E.G. OC (ft)	378.29	Weir Sta Rgt (ft)	254.53
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	1.27
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	0.75
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	116.03
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	154.43	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	12.29
Q Barrel (cfs)	154.43	Culv Vel DS (ft/s)	12.29
E.G. US. (ft)	379.21	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.01	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	375.41	Culv Frctn Ls (ft)	0.72
W.S. DS (ft)	374.96	Culv Exit Loss (ft)	1.90
Delta EG (ft)	3.80	Culv Entr Loss (ft)	1.17
Delta WS (ft)	4.05	Q Weir (cfs)	909.96
E.G. IC (ft)	376.03	Weir Sta Lft (ft)	77.68
E.G. OC (ft)	379.20	Weir Sta Rgt (ft)	271.08
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.18
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.41
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	273.17
Culv Crt Depth (ft)	3.63	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	149.25	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.88
Q Barrel (cfs)	149.25	Culv Vel DS (ft/s)	11.88
E.G. US. (ft)	379.59	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.33	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.23	Culv Frctn Ls (ft)	0.67
W.S. DS (ft)	375.62	Culv Exit Loss (ft)	1.58
Delta EG (ft)	3.36	Culv Entr Loss (ft)	1.10
Delta WS (ft)	3.71	Q Weir (cfs)	1267.31
E.G. IC (ft)	375.64	Weir Sta Lft (ft)	67.70
E.G. OC (ft)	379.59	Weir Sta Rgt (ft)	276.42
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.56
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.68
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	349.94
Culv Crt Depth (ft)	3.59	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	146.90	Culv Full Len (ft)	62.23
# Barrels	1	Culv Vel US (ft/s)	11.69
Q Barrel (cfs)	146.90	Culv Vel DS (ft/s)	11.69
E.G. US. (ft)	379.77	Culv Inv El Up (ft)	367.33
W.S. US. (ft)	379.48	Culv Inv El Dn (ft)	367.76
E.G. DS (ft)	376.62	Culv Frctn Ls (ft)	0.65
W.S. DS (ft)	375.93	Culv Exit Loss (ft)	1.44
Delta EG (ft)	3.16	Culv Entr Loss (ft)	1.06
Delta WS (ft)	3.55	Q Weir (cfs)	1452.01
E.G. IC (ft)	375.46	Weir Sta Lft (ft)	62.18
E.G. OC (ft)	379.77	Weir Sta Rgt (ft)	278.88
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.33	Weir Max Depth (ft)	2.74
Culv WS Outlet (ft)	371.76	Weir Avg Depth (ft)	1.79
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	387.35
Culv Crt Depth (ft)	3.57	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	89.18	Culv Full Len (ft)	27.92
# Barrels	1	Culv Vel US (ft/s)	8.06
Q Barrel (cfs)	89.18	Culv Vel DS (ft/s)	7.10
E.G. US. (ft)	372.10	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	371.93	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	370.62	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	370.57	Culv Exit Loss (ft)	0.74

Delta EG (ft)	1.48	Culv Entr Loss (ft)	0.50
Delta WS (ft)	1.36	Q Weir (cfs)	
E.G. IC (ft)	371.94	Weir Sta Lft (ft)	
E.G. OC (ft)	372.09	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	370.57	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.93	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.86	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.20	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	8.77
Q Barrel (cfs)	110.20	Culv Vel DS (ft/s)	8.77
E.G. US. (ft)	373.28	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	373.16	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	371.16	Culv Frctn Ls (ft)	0.37
W.S. DS (ft)	371.11	Culv Exit Loss (ft)	1.14
Delta EG (ft)	2.11	Culv Entr Loss (ft)	0.60
Delta WS (ft)	2.06	Q Weir (cfs)	
E.G. IC (ft)	372.99	Weir Sta Lft (ft)	
E.G. OC (ft)	373.27	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.17	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	167.66	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	13.34
Q Barrel (cfs)	167.66	Culv Vel DS (ft/s)	13.34
E.G. US. (ft)	378.29	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	378.21	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	373.49	Culv Frctn Ls (ft)	0.85
W.S. DS (ft)	373.29	Culv Exit Loss (ft)	2.57
Delta EG (ft)	4.80	Culv Entr Loss (ft)	1.38
Delta WS (ft)	4.92	Q Weir (cfs)	290.75
E.G. IC (ft)	377.01	Weir Sta Lft (ft)	99.83
E.G. OC (ft)	378.29	Weir Sta Rgt (ft)	254.53
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	1.27
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	0.75
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	116.03
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	154.61	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	12.30
Q Barrel (cfs)	154.61	Culv Vel DS (ft/s)	12.30
E.G. US. (ft)	379.21	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.01	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	375.41	Culv Frctn Ls (ft)	0.72
W.S. DS (ft)	374.96	Culv Exit Loss (ft)	1.91
Delta EG (ft)	3.80	Culv Entr Loss (ft)	1.18
Delta WS (ft)	4.05	Q Weir (cfs)	909.96
E.G. IC (ft)	375.95	Weir Sta Lft (ft)	77.68
E.G. OC (ft)	379.21	Weir Sta Rgt (ft)	271.08
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.18
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.41
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	273.17
Culv Crt Depth (ft)	3.63	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	149.44	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.89
Q Barrel (cfs)	149.44	Culv Vel DS (ft/s)	11.89
E.G. US. (ft)	379.59	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.33	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.23	Culv Frctn Ls (ft)	0.68

W.S. DS (ft)	375.62	Culv Exit Loss (ft)	1.59
Delta EG (ft)	3.36	Culv Entr Loss (ft)	1.10
Delta WS (ft)	3.71	Q Weir (cfs)	1267.31
E.G. IC (ft)	375.55	Weir Sta Lft (ft)	67.70
E.G. OC (ft)	379.60	Weir Sta Rgt (ft)	276.42
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.56
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.68
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	349.94
Culv Crt Depth (ft)	3.59	Min El Weir Flow (ft)	377.04

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	147.09	Culv Full Len (ft)	62.41
# Barrels	1	Culv Vel US (ft/s)	11.70
Q Barrel (cfs)	147.09	Culv Vel DS (ft/s)	11.70
E.G. US. (ft)	379.77	Culv Inv El Up (ft)	367.28
W.S. US. (ft)	379.48	Culv Inv El Dn (ft)	366.19
E.G. DS (ft)	376.62	Culv Frctn Ls (ft)	0.65
W.S. DS (ft)	375.93	Culv Exit Loss (ft)	1.44
Delta EG (ft)	3.16	Culv Entr Loss (ft)	1.06
Delta WS (ft)	3.55	Q Weir (cfs)	1452.01
E.G. IC (ft)	375.38	Weir Sta Lft (ft)	62.18
E.G. OC (ft)	379.78	Weir Sta Rgt (ft)	278.88
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	371.28	Weir Max Depth (ft)	2.74
Culv WS Outlet (ft)	370.19	Weir Avg Depth (ft)	1.79
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	387.35
Culv Crt Depth (ft)	3.57	Min El Weir Flow (ft)	377.04

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6197

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.5	2.88	381.26	8.6	380.81	10.21	380.8	18.26	381.42
23.64	381.72	28.86	382	31.26	382.04	31.91	382.04	38.99	382
43.19	381.9	43.7	381.88	47.28	381.77	47.53	381.75	49.17	381.7
49.49	381.68	51.7	381.59	53.73	381.49	76.26	380.56	76.87	380.53
77.82	380.46	79.53	380.32	83.18	380	86.26	379.56	88.68	379.19
90.12	378.97	98.61	378	127.05	376.5	131.06	376.5	161.92	376.1
189.14	374.65	197.54	369.94	197.55	369.93	203.42	366.64	221.43	366.39
225.24	370.02	227.55	372.22	227.56	372.23	229.54	374.1	255.33	377.5
286.19	380.21	290.61	381.26	291.85	381.66	302.93	382	306.38	382.34
307.8	382.5	315.82	383.3	321.82	384	332.19	385.15	338.94	386
354.08	387.58	358.3	388	361.22	388.32	364.98	388.73	371.17	389.42
376.5	390	377.44	390.09	382.23	390.53	383.73	390.65	389.09	391.12
395.34	391.57	396	391.63	401.1	392	405.04	392.54	406.26	392.72
413.74	394	418.95	394.57	420.55	394.73	421.65	394.84	427.34	395.45
432.93	395.77	433.17	395.8	434.1	395.89	438.66	396.46	441.16	396.79
443.14	397.11								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	197.54	.04	225.24	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.54	225.24	75.78	74.81	73.83	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	180.5	373	F
229.3	443.14	373	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
23.7	63.4	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6122

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.69	8.11	379.53	9.53	379.45	17.27	379.23	20.32	379.02
22.13	378.95	24.3	378.81	31.57	378.41	34.72	378.26	38.27	378.14
47.27	377.96	49.2	377.94	52.81	377.79	56.11	377.88	60.11	377.91
62.59	377.87	64.37	377.81	65.09	377.76	66.54	377.7	67.14	377.65
68.62	377.58	71.62	377.27	75.62	376.99	79.3	376.57	81.7	376.35
84.46	376	105.56	374.69	108.26	374.67	121.47	375.38	123.91	375.3
125.19	375.41	127.48	375.55	129.74	375.66	131.98	375.57	134.89	375.74
137.16	375.81	137.87	375.78	140.09	375.81	142.39	375.77	145.17	375.64
148	375.41	151.1	375.05	154.75	374.52	159.06	373.88	159.11	374.24
175.4	373.46	185.87	373.46	213.06	372.27	225.58	370.42	231.74	369.51
232.66	367.04	234.89	366.62	240.64	367.46	244.1	370.65	253.02	370.54
255.64	371.33	278.66	378.25	302.77	378.97	352.21	380	359.2	381.14
364.26	382	367.65	382.7	370.16	383.19	373.86	384	378.45	385.21
381.62	386	383.59	386.52	388.85	388	390.89	388.46		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	225.58	.04	244.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
225.58	244.1	98.18	94.21	91.92	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
119.8	162.9	385	F
185.6	201.5	385	F
272.4	384.9	385	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
162.9	185.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 6028

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.8	19.58	382.41	21.78	382.31	25.29	382	28.82	381.21
33.73	380	38.53	378.96	47.92	377.02	53.08	376	53.61	375.96
54.06	375.94	63.8	375.32	75.35	374.08	75.77	374	75.87	374
79.55	373.5	79.83	373.47	80.44	373.45	80.74	373.5	108.3	372.93
132.26	372.05	132.53	372	152.08	371	183.23	368.87	204.31	368.6
204.32	368.6	205.1	368.59	214.72	368.32	216.43	366.61	219.36	365.53
223.23	366.03	225.53	367.69	234.47	368.82	242.06	369.78	266.05	372.16
283.38	373.66	295.75	374.49	302.61	375.35	306.21	375.74	307.44	375.9
308.45	376	309.16	376.16	309.43	376.21	312.19	376.42	326.29	377.09
336.37	377.85	338.16	378	343.77	379.27	346.84	380	352.57	381.65
353.72	382	360.42	384	366.91	386	373.75	388	374.25	388.15
375.39	388.44	376.82	388.77	382.2	390	385.62	390.91	387.5	391.38
390.05	392	391.18	392.24	393.51	392.7	394.79	392.94	395.7	393.09
396.68	393.28	398.05	393.5	400.71	394	401.05	394.02	401.31	394.02
401.89	394.05	402.27	394.05	404.67	394.17				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	214.72	.04	234.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
214.72	234.47	100.93	101.91	101.19	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
61	113.9	390	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
19.7	61	390	393.1	404.67	395

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5926

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.59	5.1	382	9.3	381.27	15.23	380.26	16.79	380
17.4	379.93	17.99	379.89	25.61	379.19	28.72	378.92	41.87	378.06
42.14	378.04	42.69	378.01	42.8	378	47.15	377.66	50.35	377.44
52.95	377.29	54.78	377.18	55.85	377.13	57.24	377.07	58.56	376.99
61.22	376.9	62.6	376.8	64.49	376.66	65.4	376.61	68.93	376.32
69.43	376.28	72.62	376	79.17	375.23	79.85	375.13	81.75	374.86
86.54	374.13	86.9	374.08	87.35	374	97.43	372.6	101.22	372
101.71	371.98	102.49	371.97	103.31	371.98	103.65	372	103.7	371.95
108.23	371.29	120.13	371.02	124.98	371.02	148.13	370.3	170.6	369.08
174.12	367.61	175.06	367.22	180.45	367.62	186.44	367.24	187.3	365.38
189.41	365.46	192.74	365.89	197.28	368.62	204.41	369.15	222.38	370.47
248.76	371.19	255	372	274.29	373.9	275.14	374	287.23	376
292.49	377.34	295.11	378	299.87	379.19	303.25	380	311.49	382
318.69	383.66	320.08	384	327.45	385.84	328.11	386	335.19	387.48
337.59	388	343.86	388.94	350.88	390	354.59	390.61	356.8	390.96

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	186.44	.04	197.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.44	197.28	102.11	102.54	102.93	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
60.6	75.4	385	F
103.4	163.4	385	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
75.4	103.4	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5824

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.17	1.53	379.09	3.56	378.96	5.73	378.8	8.65	378.57
10.86	378.4	11.67	378.34	15.69	378	20.08	377.29	27.83	376
29.81	375.82	31.38	375.67	39.63	374.92	42.87	374.63	44.59	374.5
49.91	374	62.23	371.55	92.34	370.63	109.26	369.2	110.94	369.06
120.72	365.29	124.37	365.08	126.51	365.24	130.92	367.14	139.51	368.75
157.36	372.1	180.06	370.47	190.05	370.47	216.33	372	219.38	372.57
223.55	373.34	225.27	373.66	227.19	374	231.58	375.26	234.22	376
234.79	376.18	240.58	378	243.82	379.15	246.06	380	248.42	380.86
251.63	382	257.95	383.86	258.4	384	260.44	384.5	266.77	386
268.22	386.33	275.61	388	278.96	388.7	285.3	390	291.48	391.05
292.67	391.25								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	109.26	.04	139.51	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
109.26	139.51	75.62	79.21	82.75	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5745

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380	15.5	378.48	20.71	378	30.8	377.15	37.79	376.64
40.3	376.44	46.11	376.04	46.38	376	47.1	375.96	69.11	374
77.1	373.47	103.89	370.86	131.17	369.6	133.12	368.74	140.37	365.55
143.61	365	144.73	363.71	148.48	363.03	150.47	363.33	159.4	368.15
163.52	368.56	176.34	369.82	186.31	370.3	194.64	373.03	209.12	373.26
225.27	372.55	225.6	372.55	225.92	372.54	226.18	372.55	226.7	372.55

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   233.5  372.96   233.9  372.98  234.19     373  234.39     373  234.53  373.01
  234.67  373.01  234.83  373.02  242.93  373.56  243.64  373.58  246.98  373.68
  250.97   373.8  257.66     374  263.52  375.65  264.76     376  265.45  376.19
  271.67     378     272  378.09  278.61     380  283.25  381.15  286.54     382
  296.07  383.94  296.19  383.96  296.34     384  296.53  384.04  296.57  384.04
  296.61  384.05  296.75  384.07  297.08  384.12   302.2  384.91  306.31  385.41
  307.97  385.64  308.53  385.72  311.26     386  312.97  386.11  313.27  386.13
   317.7  386.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  131.17     .04   159.4    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        131.17   159.4            34.07   34.02   34.04             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   170.3   207.9     385       F
   225.8   247.8     385       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   207.9   225.8     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5711

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76   144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        136.06  162.62            96.24   96.18   98.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 5650

INPUT
Description: Brookemede Road
Distance from Upstream XS =      37
Deck/Roadway Width        =      37
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     101 372.301             151 370.157             188 369.953
   218.7 370.181

Upstream Bridge Cross Section Data
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0  378.96    5.54  378.13    6.43     378    6.59  377.97    7.22  377.87
   14.65   376.7   19.46     376   29.76  375.59   33.15  375.42   41.25  375.08
    44.6  374.95   45.92   374.9   49.46  374.77   55.97  374.36   56.52  374.34
   58.85   374.2   59.23  374.18    62.1     374   63.44  373.99   64.49  373.98
   77.01  373.19    91.8  372.37   98.61  372.37  120.83   370.6  135.63   369.2
  136.06  369.16  142.21  365.76  144.5  365.01  146.11  363.15  150.67  362.51
  153.72  362.85  162.62  367.56  165.67  367.85  185.89  369.73  195.88  371.77
  212.67   372.4  214.13   372.4  228.37  372.93  230.28  373.09  230.39  373.14
  231.03  372.79  231.36  372.58  232.17  372.27  232.32  372.18  232.74     372
  233.33  372.03  233.88  372.06  235.87  372.02  236.95  372.03  242.63  372.04
  243.03  372.04  245.07  372.03  251.24     372  253.27  372.43  260.85     374
  265.19   375.5  266.59     376  267.95  376.48  272.38     378  276.41  378.97
  280.63     380  288.84  381.31  293.41     382  301.54  382.96  310.99     384
   311.6  384.05  311.83  384.07  322.57  385.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  136.06     .04  162.62    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        136.06  162.62            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   119.4  370.16       F
   201.1  322.57  370.16       F

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  128.33  372.41           152.3 372.301           202.9 370.157
   238.6 369.953           268.9 370.181

Downstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  375.09    1.07  375.04    1.94  375.04    2.62  375.01    3.78  375.02
       5  374.95    6.16  374.97   13.83   374.5   15.25  374.52   31.31  375.33
   32.18  375.35   39.66   374.3   45.41  373.86   50.93  373.59   53.48  373.55
   59.91  373.31    62.6  373.32   81.57  373.51   85.54  373.44   92.18  373.21
   98.33  373.03  102.35  373.09  105.39  372.98  113.27  372.64  128.33  372.41
  164.68   369.2  190.47  367.33  202.12  366.92  205.34  366.81  210.08   364.6
  211.22  364.43  215.09  361.81  217.13  362.04  229.59  362.98   238.7  368.44
  238.98  368.61  251.44  369.69  268.94  370.18  285.07  369.62  290.27  370.06
  298.37  370.04  306.37  370.28  324.69  371.75  335.39     372  342.38  373.55
  344.58     374  353.22     376  364.13     378  366.42  378.31  380.54  380.03
  386.38  380.25  391.69  380.39  399.18  380.94  403.65  381.15  406.06  381.34
  407.91  381.42  410.66  381.64  411.73  381.67  415.82     382  420.24   382.3
   421.1  382.39  423.89  382.58  424.39  382.64  428.52  382.91  431.83  383.32
  435.07  383.79  435.47  383.82  436.48     384  438.12  384.43   440.9  385.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  205.34     .04   238.7    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        205.34   238.7            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   193.8   367.8       F
     239   440.9   367.8       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    72.7   102.2     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
```

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	15	62.66	.013	.013	0	.5	1

Upstream Elevation = 361.93
Centerline Station = 148
Downstream Elevation = 362.09
Centerline Station = 215

Culvert Name	Shape	Rise	Span
Culvert #2	Circular	4	

FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	15	62.66	.013	.013	0	.5	1

Upstream Elevation = 362.32
Centerline Station = 153
Downstream Elevation = 362.32
Centerline Station = 220

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #1

Q Culv Group (cfs)	84.07	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	6.69
Q Barrel (cfs)	84.07	Culv Vel DS (ft/s)	6.69
E.G. US. (ft)	367.52	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	367.42	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	366.33	Culv Frctn Ls (ft)	0.21
W.S. DS (ft)	366.27	Culv Exit Loss (ft)	0.63
Delta EG (ft)	1.18	Culv Entr Loss (ft)	0.35
Delta WS (ft)	1.15	Q Weir (cfs)	
E.G. IC (ft)	366.42	Weir Sta Lft (ft)	
E.G. OC (ft)	367.53	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.78	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	107.25	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	8.53
Q Barrel (cfs)	107.25	Culv Vel DS (ft/s)	8.53
E.G. US. (ft)	368.82	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	368.75	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	366.86	Culv Frctn Ls (ft)	0.35
W.S. DS (ft)	366.78	Culv Exit Loss (ft)	1.06
Delta EG (ft)	1.96	Culv Entr Loss (ft)	0.57
Delta WS (ft)	1.97	Q Weir (cfs)	
E.G. IC (ft)	367.51	Weir Sta Lft (ft)	
E.G. OC (ft)	368.83	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.13	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	72.91	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.80
Q Barrel (cfs)	72.91	Culv Vel DS (ft/s)	5.80
E.G. US. (ft)	372.24	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.14	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	371.36	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	371.31	Culv Exit Loss (ft)	0.47
Delta EG (ft)	0.88	Culv Entr Loss (ft)	0.26
Delta WS (ft)	0.83	Q Weir (cfs)	481.34
E.G. IC (ft)	365.97	Weir Sta Lft (ft)	100.26
E.G. OC (ft)	372.25	Weir Sta Rgt (ft)	252.37
Culvert Control	Outlet	Weir Submerg	0.41
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	2.28
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.17
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	148.32
Culv Crt Depth (ft)	2.58	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	58.31	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.64
Q Barrel (cfs)	58.31	Culv Vel DS (ft/s)	4.64
E.G. US. (ft)	373.16	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	372.89	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	372.67	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.57	Culv Exit Loss (ft)	0.24
Delta EG (ft)	0.49	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.32	Q Weir (cfs)	1103.80
E.G. IC (ft)	365.39	Weir Sta Lft (ft)	77.37
E.G. OC (ft)	373.18	Weir Sta Rgt (ft)	256.84
Culvert Control	Outlet	Weir Submerg	0.70
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.21
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.65
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	295.66
Culv Crt Depth (ft)	2.30	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	56.74	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.52
Q Barrel (cfs)	56.74	Culv Vel DS (ft/s)	4.52
E.G. US. (ft)	373.57	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.17	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.14	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	373.01	Culv Exit Loss (ft)	0.19
Delta EG (ft)	0.43	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.17	Q Weir (cfs)	1453.83
E.G. IC (ft)	365.33	Weir Sta Lft (ft)	71.17
E.G. OC (ft)	373.58	Weir Sta Rgt (ft)	258.72
Culvert Control	Outlet	Weir Submerg	0.75
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.60
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	1.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	366.92
Culv Crt Depth (ft)	2.27	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	55.37	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.41
Q Barrel (cfs)	55.37	Culv Vel DS (ft/s)	4.41
E.G. US. (ft)	373.75	Culv Inv El Up (ft)	361.93
W.S. US. (ft)	373.30	Culv Inv El Dn (ft)	362.09
E.G. DS (ft)	373.37	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.22	Culv Exit Loss (ft)	0.16
Delta EG (ft)	0.39	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.08	Q Weir (cfs)	1636.51
E.G. IC (ft)	365.27	Weir Sta Lft (ft)	68.15
E.G. OC (ft)	373.76	Weir Sta Rgt (ft)	259.64
Culvert Control	Outlet	Weir Submerg	0.78
Culv WS Inlet (ft)	365.93	Weir Max Depth (ft)	3.79
Culv WS Outlet (ft)	366.09	Weir Avg Depth (ft)	2.10
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	403.03
Culv Crt Depth (ft)	2.24	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	82.93	Culv Full Len (ft)	50.74
# Barrels	1	Culv Vel US (ft/s)	6.60
Q Barrel (cfs)	82.93	Culv Vel DS (ft/s)	6.62
E.G. US. (ft)	367.52	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	367.42	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	366.33	Culv Frctn Ls (ft)	0.17
W.S. DS (ft)	366.27	Culv Exit Loss (ft)	0.62
Delta EG (ft)	1.18	Culv Entr Loss (ft)	0.34
Delta WS (ft)	1.15	Q Weir (cfs)	
E.G. IC (ft)	366.76	Weir Sta Lft (ft)	
E.G. OC (ft)	367.50	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.27	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.76	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	106.75	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	8.50
Q Barrel (cfs)	106.75	Culv Vel DS (ft/s)	8.50
E.G. US. (ft)	368.82	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	368.75	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	366.86	Culv Frctn Ls (ft)	0.35
W.S. DS (ft)	366.78	Culv Exit Loss (ft)	1.05
Delta EG (ft)	1.96	Culv Entr Loss (ft)	0.56
Delta WS (ft)	1.97	Q Weir (cfs)	
E.G. IC (ft)	367.87	Weir Sta Lft (ft)	
E.G. OC (ft)	368.81	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.13	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	71.76	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	5.71
Q Barrel (cfs)	71.76	Culv Vel DS (ft/s)	5.71
E.G. US. (ft)	372.24	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.14	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	371.36	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	371.31	Culv Exit Loss (ft)	0.46
Delta EG (ft)	0.88	Culv Entr Loss (ft)	0.25
Delta WS (ft)	0.83	Q Weir (cfs)	481.34
E.G. IC (ft)	366.31	Weir Sta Lft (ft)	100.26
E.G. OC (ft)	372.22	Weir Sta Rgt (ft)	252.37
Culvert Control	Outlet	Weir Submerg	0.41
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	2.28
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.17
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	148.32
Culv Crt Depth (ft)	2.56	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	56.88	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.53
Q Barrel (cfs)	56.88	Culv Vel DS (ft/s)	4.53
E.G. US. (ft)	373.16	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	372.89	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	372.67	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	372.57	Culv Exit Loss (ft)	0.22
Delta EG (ft)	0.49	Culv Entr Loss (ft)	0.16
Delta WS (ft)	0.32	Q Weir (cfs)	1103.80
E.G. IC (ft)	365.72	Weir Sta Lft (ft)	77.37
E.G. OC (ft)	373.15	Weir Sta Rgt (ft)	256.84
Culvert Control	Outlet	Weir Submerg	0.70
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.21
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.65
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	295.66
Culv Crt Depth (ft)	2.27	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	55.43	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.41
Q Barrel (cfs)	55.43	Culv Vel DS (ft/s)	4.41
E.G. US. (ft)	373.57	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.17	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.14	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.01	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.43	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.17	Q Weir (cfs)	1453.83
E.G. IC (ft)	365.66	Weir Sta Lft (ft)	71.17
E.G. OC (ft)	373.55	Weir Sta Rgt (ft)	258.72
Culvert Control	Outlet	Weir Submerg	0.75
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.60
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	1.96
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	366.92
Culv Crt Depth (ft)	2.24	Min El Weir Flow (ft)	369.97

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	54.12	Culv Full Len (ft)	62.66
# Barrels	1	Culv Vel US (ft/s)	4.31
Q Barrel (cfs)	54.12	Culv Vel DS (ft/s)	4.31
E.G. US. (ft)	373.75	Culv Inv El Up (ft)	362.32
W.S. US. (ft)	373.30	Culv Inv El Dn (ft)	362.32
E.G. DS (ft)	373.37	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	373.22	Culv Exit Loss (ft)	0.14
Delta EG (ft)	0.39	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.08	Q Weir (cfs)	1636.51
E.G. IC (ft)	365.61	Weir Sta Lft (ft)	68.15
E.G. OC (ft)	373.74	Weir Sta Rgt (ft)	259.64
Culvert Control	Outlet	Weir Submerg	0.78
Culv WS Inlet (ft)	366.32	Weir Max Depth (ft)	3.79
Culv WS Outlet (ft)	366.32	Weir Avg Depth (ft)	2.10
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	403.03
Culv Crt Depth (ft)	2.21	Min El Weir Flow (ft)	369.97

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5614

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	375.09	1.07	375.04	1.94	375.04	2.62	375.01	3.78	375.02
5	374.95	6.16	374.97	13.83	374.5	15.25	374.52	31.31	375.33
32.18	375.35	39.66	374.3	45.41	373.86	50.93	373.59	53.48	373.55
59.91	373.31	62.6	373.32	81.57	373.51	85.54	373.44	92.18	373.21
98.33	373.03	102.35	373.09	105.39	372.98	113.27	372.64	128.33	372.41
164.68	369.2	190.47	367.33	202.12	366.92	205.34	366.81	210.08	364.6
211.22	364.43	215.09	361.81	217.13	362.04	229.59	362.98	238.7	368.44
238.98	368.61	251.44	369.69	268.94	370.18	285.07	369.62	290.27	370.06
298.37	370.04	306.37	370.28	324.69	371.75	335.39	372	342.38	373.55
344.58	374	353.22	376	364.13	378	366.42	378.31	380.54	380.03
386.38	380.25	391.69	380.39	399.18	380.94	403.65	381.15	406.06	381.34
407.91	381.42	410.66	381.64	411.73	381.67	415.82	382	420.24	382.3
421.1	382.39	423.89	382.58	424.39	382.64	428.52	382.91	431.83	383.32
435.07	383.79	435.47	383.82	436.48	384	438.12	384.43	440.9	385.22

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	205.34	.04	238.7	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
205.34	238.7	60.47	54.67	45.26	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	193.8	367.8	F
239	440.9	367.8	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
72.7	102.2	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5560

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.71	12.44	380.66	20.28	380.48	30.01	380.06	32.55	380
35.14	379.9	40.44	379.76	66.9	378.85	77.73	378.19	86.8	377.53
106.28	376	135.5	374	137.27	373.83	145.55	373.21	146.86	373.14
152.29	373.03	158.19	372.73	169.54	372.53	171.14	372.42	174.7	372
177.92	371.83	200.19	370.97	216.51	371.11	224.54	370.88	233.81	370.74
237.26	370.65	249.92	370	272.36	369.5	305.11	368.25	330.75	367.7
351.63	367.26	351.64	367.26	352.8	367.24	361.62	364.64	365.14	363.68
366.63	362.08	370.12	362.09	377.69	362.11	381.2	366.86	381.86	366.92

```
  381.88  366.92  400.75   368.4  415.84  369.84  428.22  370.13  441.48  370.08
  454.62  370.47  468.56  371.58  474.03  371.79  478.41     372  486.49  373.21
   492.4     374   496.8  374.72  506.14     376  510.13  376.65  519.35     378
  525.84  378.52   527.4  378.56  530.32  378.74  538.47  379.03  541.22  379.02
  541.91  379.05   543.2  379.02  545.47  379.17  545.81  379.17  552.05  379.68
   557.2  380.19  563.37  380.95  569.96     382  577.27     384   584.9     386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   352.8     .04   381.2    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         352.8   381.2            56.62   49.74    41.3             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5510

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        251.67  273.96            36.56   36.42   38.18             .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385          F
   180.5   232.8     385          F
   232.8   241.8  367.86          F
   281.5   313.2  368.03          F

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 5500

INPUT
Description: Driveway
Distance from Upstream XS =    8.75
Deck/Roadway Width        =    11.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     245     368           246.3 368.296           251.7 369.922 368.922
   261.7 369.925 368.925   272.1 369.867 368.867   278.5 368.291
     281   367.8

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.59    1.07  380.58    1.48  380.59    2.49  380.59    2.99   380.6
    9.84  380.59   12.79  380.53   14.86  380.46   15.72  380.47   20.91   380.2
   24.76  379.96   28.25  379.72   30.83  379.52   32.58  379.45   37.73  379.07
   40.23  378.86   49.96     378   59.38  377.22   64.61     377   68.91   376.7
   75.68  376.43   88.62   375.8   93.88  375.47  110.63  374.53  117.52     374
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  126.29  372.67  130.82     372  140.38     370  159.94  369.31  179.57     370
   179.8  369.97   184.5  369.62  189.58  368.99  224.93   368.5  247.96  367.97
  247.98  367.97  251.67  367.89  261.11  363.47  263.32  362.78  268.95  362.16
  273.96  367.47  278.36  367.73  278.38  367.73  296.08  368.76  313.23   369.9
  323.24  370.14  330.47  370.12  347.85  370.63  358.08  371.45  362.09   371.6
  374.42     372  382.74  373.11  386.18  373.46  390.84     374   394.8  374.62
  398.13  375.18  399.12  375.33  404.19     376  412.46  376.97  413.64  376.99
  415.85  376.98  417.59  376.87  421.37  377.08  424.29  377.21  428.49  377.45
  434.63  377.81  437.32     378  439.02  378.26  443.49     379  448.84     380
  457.57     382  465.83     384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  251.67     .04  273.96    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        251.67  273.96            .3       .5
Ineffective Flow     num=       4
   Sta L   Sta R    Elev  Permanent
       3    60.5     385       F
   180.5   232.8     385       F
   232.8   241.8  367.86       F
   281.5   313.2  368.03       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  218.37  367.75           222.9 368.709           228.8 369.891 368.891
   238.9 369.925 368.925     248 369.959 368.959   254.6 368.591
  256.61  368.13

Downstream Bridge Cross Section Data
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   381.2    5.49  380.43   19.15  378.55   22.99     378   24.44  377.87
    27.6  377.66   28.15  377.66   32.08  377.85   34.11  377.81   34.84  377.86
   36.16  377.76    36.5  377.71   36.95   377.6   37.24  377.63   37.53  377.55
   43.71  377.04   44.96  377.01   53.85  377.19   61.96  376.88   69.36  376.67
    78.2  376.53   80.32  376.46   85.59  376.16   86.54  376.08   87.13     376
   96.16     374  106.12     372  115.26     370  135.49  369.25  142.97   369.5
  155.72     370  160.13  369.38  160.65  369.34  161.19  369.38  161.22  369.44
  161.24  368.96  165.72  368.71  205.57  368.19  226.91  367.45  227.84  367.41
  239.06  361.76  241.96   361.6  245.76  361.52  251.97  367.85  256.98  368.15
  272.47  369.07  292.37  370.16  313.15  370.81  318.99   371.3  321.33   371.4
  339.22  371.96  340.43     372  349.15  373.24   355.3     374  368.27  375.86
  369.44     376  372.93  376.21  375.85  376.35  378.58  376.44  379.95  376.57
  383.94   376.7  387.23  377.09  388.78  377.16  390.64  377.28  394.93     378
  401.34   379.4  405.24  380.21  406.53  380.45     414     382  419.84  383.75
  427.66  386.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  227.84     .04  251.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        227.84  251.97            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   224.3  367.75       F
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
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```
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line
```

BRIDGE OUTPUT Profile #1-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	366.12	Element		
W.S. US. (ft)	365.80	E.G. Elev (ft)	366.06	365.92
Q Total (cfs)	167.00	W.S. Elev (ft)	365.70	365.75
Q Bridge (cfs)	167.00	Crit W.S. (ft)	364.84	363.89
Q Weir (cfs)		Max Chl Dpth (ft)	3.54	4.23
Weir Sta Lft (ft)		Vel Total (ft/s)	4.75	3.31
Weir Sta Rgt (ft)		Flow Area (sq ft)	35.16	50.50
Weir Submerg		Froude # Chl	0.44	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	72.58	106.80
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.23	2.99
Min El Prs (ft)	368.93	W.P. Total (ft)	18.05	20.73
Delta EG (ft)	0.24	Conv. Total (cfs)	2036.9	3395.7
Delta WS (ft)	0.08	Top Width (ft)	15.78	16.88
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	4.75	C & E Loss (ft)	0.09	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.82	0.37
BR Sel Method	Energy only	Power Total (lb/ft s)	3.88	1.22

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	366.64	Element		
W.S. US. (ft)	366.29	E.G. Elev (ft)	366.58	366.45
Q Total (cfs)	214.00	W.S. Elev (ft)	366.20	366.24
Q Bridge (cfs)	214.00	Crit W.S. (ft)	365.19	364.22
Q Weir (cfs)		Max Chl Dpth (ft)	4.04	4.72
Weir Sta Lft (ft)		Vel Total (ft/s)	4.95	3.63
Weir Sta Rgt (ft)		Flow Area (sq ft)	43.21	59.03
Weir Submerg		Froude # Chl	0.43	0.29
Weir Max Depth (ft)		Specif Force (cu ft)	100.19	140.64
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.57	3.31
Min El Prs (ft)	368.93	W.P. Total (ft)	19.71	22.32
Delta EG (ft)	0.24	Conv. Total (cfs)	2708.6	4193.9
Delta WS (ft)	0.08	Top Width (ft)	16.83	17.85
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	4.95	C & E Loss (ft)	0.09	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.85	0.43
BR Sel Method	Energy only	Power Total (lb/ft s)	4.23	1.56

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	371.32	Element		
W.S. US. (ft)	371.22	E.G. Elev (ft)	371.29	371.27
Q Total (cfs)	626.00	W.S. Elev (ft)	371.23	371.22
Q Bridge (cfs)	249.06	Crit W.S. (ft)	367.22	366.31
Q Weir (cfs)		Max Chl Dpth (ft)	9.07	9.70
Weir Sta Lft (ft)		Vel Total (ft/s)	1.66	1.53
Weir Sta Rgt (ft)		Flow Area (sq ft)	377.55	408.17

Weir Submerg		Froude # Chl	0.11	0.10
Weir Max Depth (ft)		Specif Force (cu ft)	799.81	940.80
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	2.24	2.36
Min El Prs (ft)	368.93	W.P. Total (ft)	217.13	227.44
Delta EG (ft)	0.07	Conv. Total (cfs)	14040.8	16081.0
Delta WS (ft)	0.05	Top Width (ft)	220.89	172.89
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.01
BR Open Vel (ft/s)	2.61	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.22	0.17
BR Sel Method	Energy only	Power Total (lb/ft s)	0.36	0.26

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	372.60	Element		
W.S. US. (ft)	372.45	E.G. Elev (ft)	372.55	372.53
Q Total (cfs)	1219.00	W.S. Elev (ft)	372.47	372.45
Q Bridge (cfs)	258.43	Crit W.S. (ft)	369.92	368.66
Q Weir (cfs)		Max Chl Dpth (ft)	10.31	10.93
Weir Sta Lft (ft)		Vel Total (ft/s)	2.01	1.89
Weir Sta Rgt (ft)		Flow Area (sq ft)	606.57	644.48
Weir Submerg		Froude # Chl	0.12	0.11
Weir Max Depth (ft)		Specif Force (cu ft)	1451.13	1631.68
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.06	3.15
Min El Prs (ft)	368.93	W.P. Total (ft)	246.76	261.55
Delta EG (ft)	0.11	Conv. Total (cfs)	26482.0	28925.1
Delta WS (ft)	0.10	Top Width (ft)	250.35	204.36
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.02	0.02
BR Open Vel (ft/s)	2.71	C & E Loss (ft)	0.00	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.33	0.27
BR Sel Method	Energy only	Power Total (lb/ft s)	0.65	0.52

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	373.04	Element		
W.S. US. (ft)	372.85	E.G. Elev (ft)	372.98	372.95
Q Total (cfs)	1566.00	W.S. Elev (ft)	372.89	372.86
Q Bridge (cfs)	275.25	Crit W.S. (ft)	370.58	370.29
Q Weir (cfs)		Max Chl Dpth (ft)	10.73	11.34
Weir Sta Lft (ft)		Vel Total (ft/s)	2.27	2.15
Weir Sta Rgt (ft)		Flow Area (sq ft)	689.82	729.47
Weir Submerg		Froude # Chl	0.13	0.13
Weir Max Depth (ft)		Specif Force (cu ft)	1754.79	1948.21
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.38	3.49
Min El Prs (ft)	368.93	W.P. Total (ft)	252.68	267.38
Delta EG (ft)	0.14	Conv. Total (cfs)	31808.0	34372.2
Delta WS (ft)	0.13	Top Width (ft)	256.22	209.29
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.03	0.02
BR Open Vel (ft/s)	2.88	C & E Loss (ft)	0.00	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.41	0.35
BR Sel Method	Energy only	Power Total (lb/ft s)	0.94	0.76

Note: The weir over a bridge is submerged, the energy answer was used.

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	373.26	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	373.05	E.G. Elev (ft)	373.19	373.16
Q Total (cfs)	1746.00	W.S. Elev (ft)	373.09	373.07
Q Bridge (cfs)	281.57	Crit W.S. (ft)	370.75	370.46
Q Weir (cfs)		Max Chl Dpth (ft)	10.93	11.55
Weir Sta Lft (ft)		Vel Total (ft/s)	2.39	2.26
Weir Sta Rgt (ft)		Flow Area (sq ft)	731.37	771.77
Weir Submerg		Froude # Chl	0.14	0.13
Weir Max Depth (ft)		Specif Force (cu ft)	1918.02	2118.02
Min El Weir Flow (ft)	367.87	Hydr Depth (ft)	3.54	3.65
Min El Prs (ft)	368.93	W.P. Total (ft)	255.56	270.23
Delta EG (ft)	0.15	Conv. Total (cfs)	34588.8	37205.1
Delta WS (ft)	0.14	Top Width (ft)	259.07	211.71
BR Open Area (sq ft)	95.52	Frctn Loss (ft)	0.03	0.02
BR Open Vel (ft/s)	2.95	C & E Loss (ft)	0.00	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.46	0.39
BR Sel Method	Energy only	Power Total (lb/ft s)	1.09	0.89

Note: The weir over a bridge is submerged, the energy answer was used.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5474

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.2	5.49	380.43	19.15	378.55	22.99	378	24.44	377.87
27.6	377.66	28.15	377.66	32.08	377.85	34.11	377.81	34.84	377.86
36.16	377.76	36.5	377.71	36.95	377.6	37.24	377.63	37.53	377.55
43.71	377.04	44.96	377.01	53.85	377.19	61.96	376.88	69.36	376.67
78.2	376.53	80.32	376.46	85.59	376.16	86.54	376.08	87.13	376
96.16	374	106.12	372	115.26	370	135.49	369.25	142.97	369.5
155.72	370	160.13	369.38	160.65	369.34	161.19	369.38	161.22	369.44
161.24	368.96	165.72	368.71	205.57	368.19	226.91	367.45	227.84	367.41
239.06	361.76	241.96	361.6	245.76	361.52	251.97	367.85	256.98	368.15
272.47	369.07	292.37	370.16	313.15	370.81	318.99	371.3	321.33	371.4
339.22	371.96	340.43	372	349.15	373.24	355.3	374	368.27	375.86
369.44	376	372.93	376.21	375.85	376.35	378.58	376.44	379.95	376.57
383.94	376.7	387.23	377.09	388.78	377.16	390.64	377.28	394.93	378
401.34	379.4	405.24	380.21	406.53	380.45	414	382	419.84	383.75
427.66	386.31								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	227.84	.04	251.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
227.84	251.97	54.4	54.86	54.94	.3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	224.3	367.75	F

```
   255.8   292.3  368.13       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
       0    29.9     385   170.3   205.7     385

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5419

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.86    3.78  380.71    4.98  380.68    6.09  380.65   17.15  380.11
   18.16     380   18.96  379.91   19.28  379.88   19.92  379.82   26.66  379.12
   33.04  378.58   34.43  378.44   39.87     378   40.43  377.97    45.3  377.68
   47.96  377.57   55.03  377.19   58.61  377.04   63.94  376.76   68.35  376.51
   75.42  376.11   77.27     376   79.39   375.6   88.74     374   95.93  372.25
  103.06  370.55  105.38     370  106.52  369.95   124.3  369.13  143.21  368.92
  147.73  368.65  154.71  368.29  193.74  367.43  212.87  367.11  212.89  367.11
   213.8   367.1  221.32  362.36  228.08  361.46  230.72  362.15  234.51  367.15
  243.11  367.53  243.13  367.53  255.89   368.1  273.39  369.09  289.93  371.07
  313.65  371.93  314.49  371.98   314.7     372  316.49  372.27  319.14  372.61
  322.78  373.12  328.35  373.78  330.34  374.01  330.63  374.04  333.66   374.3
   334.1  374.33  334.72  374.39  338.27  374.58  342.52   374.8  344.74  375.07
   346.7  375.32  347.32  375.37  350.65  375.82  350.83  375.84  351.12  375.87
  351.94     376  361.89     378  362.32  378.12   369.2     380   375.4     382
  381.54     384  387.14     386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   213.8     .04  234.51    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         213.8  234.51            93.04   95.36   97.65             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    25.8     385       F
   161.5   202.4     385       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 5323

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.88   33.33  380.11   40.06     380   44.89   379.5      59     378
   67.02   377.3   71.41  376.93   82.12     376   85.17  375.72   86.89  375.57
  104.57     374  104.96  373.94  105.28  373.89  109.01  373.33  110.74  373.08
  113.95  372.58   116.4  372.26  118.47     372  119.44  371.89  121.49  371.67
  125.25  371.29  126.03  371.19  132.92     370   135.4  369.51  137.55  369.08
  143.39  368.87  152.17  368.34  189.23  365.45  207.94  365.88  213.15     366
  215.76  361.32  219.54  361.54  222.99  361.95  225.61  363.08  227.85  363.55
  233.11  366.26     238  366.82  242.41  367.33  259.77  368.53  278.63  371.43
  280.36     372  318.89     376  320.12  376.01  321.57  376.05  349.64  377.86
  349.73  377.86   349.8  377.87  351.93     378  359.87  379.62  362.53     380
   367.1  381.08  369.42  381.61  370.97     382  374.97  382.95  379.47     384
  383.38   384.6  383.92  384.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  213.15     .04  233.11    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        213.15  233.11           116.69  114.31   111.9             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
       0    28.6     385

CROSS SECTION


RIVER: Plumtree
```

REACH: Plumtree RS: 5209

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.03	.15	378.03	1.95	378	2.36	377.96	6.29	377.85
16.45	377.5	32.34	376.94	33.33	376.83	33.48	376.82	33.68	376.79
33.96	376.77	34.79	376.69	35.57	376.61	36.06	376.58	36.71	376.52
37.31	376.46	37.67	376.43	38.36	376.39	38.61	376.37	39.48	376.31
42.48	376.17	42.92	376.13	45.71	376	45.73	376	49.13	375.52
50	375.39	51.69	375.13	54.05	374.76	55.37	374.56	56.81	374.32
58.6	374	58.66	374	59.06	373.96	84.53	372.91	98.55	372.35
98.82	372.33	99.63	372.28	103.93	372.02	104.29	372	104.3	372
106.14	371.66	116.08	370.04	116.42	370	139.5	368.78	180.51	365.75
201.11	365.1	209.66	364.83	212.88	361.1	216.14	361.11	219.68	361.44
225.21	365.18	231.24	365.5	231.26	365.5	242.79	366.12	270.5	369.12
274.64	369.12	323.97	372.18	340.57	374.96	340.58	375.25	340.59	375.28
344.72	375.7	345.37	375.76	347.71	376	348.59	376.15		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	209.66	.04	225.21	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
209.66	225.21	111.42	101.59	91.47	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
298.8	301.6	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	22.5	380	270.4	298.8	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5107

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.01	.24	376	7.07	375.83	9.07	375.73	10.81	375.67
14.62	375.53	15.38	375.51	17.77	375.4	18.91	375.37	34.75	374.53
41.77	374.45	50.79	374.46	55.85	374.46	57.09	374.44	66.02	374.11
71.3	374	75.88	373.97	100.91	373.67	129.38	373.15	147.16	372.84
170.03	372.61	172.25	372.56	172.92	372.55	178.44	372.44	185.81	372.3
200.51	372.07	201.43	371.98	201.7	371.98	202.67	371.92	215.72	371.52
224.6	371.21	235.57	370.77	237.04	370.74	250.15	370.35	252.81	370.32
253.08	370.31	263.87	370.17	266.55	370.18	267.52	370.19	268.58	370.13
278.39	370.23	284.41	370.28	291.18	370.38	294.8	370.34	311.68	370.28
315.54	370.35	315.75	370.35	322.33	370.22	323.94	370.21	332.11	370.09
355.05	371.1	364.88	371.1	382.36	369.28	393.14	367.95	393.15	367.95
397.41	367.43	406.55	360.36	409.03	359.92	412.88	360.59	414.63	362.95
416.03	363.17	422.1	365.13	424.57	365.29	439.58	366.25	464.4	370.03
475.81	370.03	507.28	370.74	534.67	372.32	549.02	374.66	549.03	374.92
549.05	374.92	551.62	375.01	559.75	376	561.38	376.32		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	397.41	.04	422.1	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.41	422.1	67.29	67.07	66.86	.1	.3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
295.8	317.3	380	F
445.9	465.3	380	F
474.6	515.9	380	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
317.3	364.3	380	465.3	474.6	380

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 5040

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78
60.84	374.76	65.24	374.68	66.8	374.67	69.29	374.63	82.36	374.74
84.96	374.72	94.2	374.58	98.84	374.02	99.09	374	100.29	373.97
104.65	373.88	105.56	373.85	106.59	373.78	109.92	373.71	111.01	373.7
130.98	373.7	135.97	373.62	165.62	372.83	166.72	372.81	174.13	372.86
190.11	373	193.32	373	195.48	372.98	206.16	372.44	206.59	372.42
208.47	372.4	218.24	372.4	219.79	372.28	225.13	372	226.38	371.95
226.58	371.93	245.52	371.43	256.75	371.11	261.14	370.99	264.15	370.9
269.51	370.76	283.05	370.32	296.66	370.06	300.29	370	307.5	369.97
310.36	369.98	336.01	370.03	366.23	369.58	397.63	368.96	412.55	368.2
412.96	367.93	415.6	366.107	424.49	359.97	427.96	359.23	429.97	359.61
432.2	361.31	434.59	361.8	443.41	365.9	443.42	365.91	448.7	368.36
463.33	369.65	490.22	370.98	518.26	372.76	527.06	373.76	535.03	374
548.23	375.55	551.99	376	559.22	376.93	568.7	378	584.52	379.08

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	415.6	.04	443.41	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
415.6	443.41	104.82	108.2	107.53	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	408.3	370.15	F
463.6	584.52	370.15	F

CULVERT

RIVER: Plumtree
REACH: Plumtree RS: 5000

INPUT
Description: Longview Drive
Distance from Upstream XS = 38
Deck/Roadway Width = 27
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 14

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
122	374		231	372		346.8	370.217	
363.6	369.987		384.5	369.89		390	370.049	
400.6	370.192		404.7	370.096		417.9	370.146	
433.4	370.53		456.1	371.384		479.9	372.4	
523.7	374		556.9	376				

Upstream Bridge Cross Section Data
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376	3.61	375.88	21.39	374.91	24.35	374.9	39.18	375.08
42.63	375.04	47.14	374.9	52.43	374.83	54.6	374.82	57.34	374.78
60.84	374.76	65.24	374.68	66.8	374.67	69.29	374.63	82.36	374.74
84.96	374.72	94.2	374.58	98.84	374.02	99.09	374	100.29	373.97
104.65	373.88	105.56	373.85	106.59	373.78	109.92	373.71	111.01	373.7
130.98	373.7	135.97	373.62	165.62	372.83	166.72	372.81	174.13	372.86
190.11	373	193.32	373	195.48	372.98	206.16	372.44	206.59	372.42
208.47	372.4	218.24	372.4	219.79	372.28	225.13	372	226.38	371.95
226.58	371.93	245.52	371.43	256.75	371.11	261.14	370.99	264.15	370.9
269.51	370.76	283.05	370.32	296.66	370.06	300.29	370	307.5	369.97
310.36	369.98	336.01	370.03	366.23	369.58	397.63	368.96	412.55	368.2
412.96	367.93	415.6	366.107	424.49	359.97	427.96	359.23	429.97	359.61
432.2	361.31	434.59	361.8	443.41	365.9	443.42	365.91	448.7	368.36
463.33	369.65	490.22	370.98	518.26	372.76	527.06	373.76	535.03	374
548.23	375.55	551.99	376	559.22	376.93	568.7	378	584.52	379.08

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	415.6	.04	443.41	.075

Bank Sta: Left	Right	Coeff Contr.	Expan.
415.6	443.41	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent

```
       0   408.3  370.15       F
   463.6  584.52  370.15       F

Downstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  375.75             124     374           270.8     372
   386.7 370.217           403.6 369.987           424.4  369.89
   429.9 370.049           440.5 370.192           444.4 370.096
   457.6 370.146           473.1  370.53           495.7 371.384
   519.5   372.4           561.3     374           594.1     376

Downstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  381.34    1.15  381.36    5.15  381.18    6.14   381.2    7.86  381.16
   10.94  381.18   23.92     381   30.33  380.86   45.55  380.35   51.93  380.07
   65.77   379.6   68.46  379.68   70.71  379.61   75.04  379.33   80.36  379.11
  107.04  378.79  117.65  378.45  125.92     378  132.09  376.99  138.71     376
  142.75  375.74  145.13  375.77  151.41  375.65  152.99   375.6  162.62   375.4
  164.08  375.33  165.89  375.33  172.24  375.73  177.38     376  177.63  376.05
  181.27  376.17  185.16  376.34  192.75  376.58  200.87  376.58  208.17  376.57
  210.94   376.5   239.9     376   245.1   375.7  245.52   375.7  248.29  375.54
   248.6  375.54  250.31  375.45  256.27   375.5  262.18   375.3  281.18     374
  296.71   372.3  299.71     372  320.36  371.86  345.94  370.82  375.13  370.26
  405.43  368.96  424.73  368.62  429.83  363.66  442.94   363.7     444   363.1
  444.02  363.09  449.76  359.84  461.09  359.04  468.33 363.925  475.48  368.75
  476.07  368.78   476.1  368.79  501.36  370.51  527.01  371.18  549.43     374
  568.87   375.7  572.79     376  583.63   376.6  584.84  376.64  587.35  376.78
  588.79  376.83   590.9  376.94   610.8  377.12  614.03  377.22  619.02  377.46
  633.02   378.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  442.94     .04  468.33    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        442.94  468.33             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     442  370.15       F
   476.1  633.02  370.15       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   68.79     .024     .024        0                  .5               1
Upstream   Elevation =  359.44
           Centerline Station =  425
Downstream Elevation =  359.83
           Centerline Station =  450

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch       4    6.03
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                17   70.81     .024     .024        0                  .5               1
Upstream   Elevation =  359.39
           Centerline Station =  432
Downstream Elevation =  359.74
           Centerline Station =  457

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1
```

Q Culv Group (cfs)	82.92	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.69
Q Barrel (cfs)	82.92	Culv Vel DS (ft/s)	6.61
E.G. US. (ft)	363.17	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	362.76	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	362.28	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	362.01	Culv Exit Loss (ft)	0.41
Delta EG (ft)	0.89	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.75	Q Weir (cfs)	
E.G. IC (ft)	362.39	Weir Sta Lft (ft)	
E.G. OC (ft)	363.19	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.67	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.01	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.94	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	106.43	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.43
Q Barrel (cfs)	106.43	Culv Vel DS (ft/s)	6.78
E.G. US. (ft)	363.95	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	363.64	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	362.88	Culv Frctn Ls (ft)	0.21
W.S. DS (ft)	362.62	Culv Exit Loss (ft)	0.45
Delta EG (ft)	1.07	Culv Entr Loss (ft)	0.23
Delta WS (ft)	1.02	Q Weir (cfs)	
E.G. IC (ft)	362.99	Weir Sta Lft (ft)	
E.G. OC (ft)	363.96	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.27	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.62	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.16	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	168.64	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	8.46
Q Barrel (cfs)	168.64	Culv Vel DS (ft/s)	8.46
E.G. US. (ft)	371.12	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	371.06	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	368.57	Culv Frctn Ls (ft)	1.01
W.S. DS (ft)	368.43	Culv Exit Loss (ft)	0.97
Delta EG (ft)	2.54	Culv Entr Loss (ft)	0.56
Delta WS (ft)	2.63	Q Weir (cfs)	288.80
E.G. IC (ft)	364.92	Weir Sta Lft (ft)	287.66
E.G. OC (ft)	371.10	Weir Sta Rgt (ft)	449.28
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	1.24
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	0.74
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	120.35
Culv Crt Depth (ft)	2.82	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	48.90	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.45
Q Barrel (cfs)	48.90	Culv Vel DS (ft/s)	2.45
E.G. US. (ft)	372.24	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.12	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.11	Culv Frctn Ls (ft)	0.08
W.S. DS (ft)	371.98	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.13	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.14	Q Weir (cfs)	1121.08
E.G. IC (ft)	361.52	Weir Sta Lft (ft)	220.77
E.G. OC (ft)	372.24	Weir Sta Rgt (ft)	475.88
Culvert Control	Outlet	Weir Submerg	0.84
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.34
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.38
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	352.26
Culv Crt Depth (ft)	1.38	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	39.34	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	1.97
Q Barrel (cfs)	39.34	Culv Vel DS (ft/s)	1.97
E.G. US. (ft)	372.56	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.40	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.47	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	372.30	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.10	Q Weir (cfs)	1487.23
E.G. IC (ft)	361.24	Weir Sta Lft (ft)	203.61
E.G. OC (ft)	372.56	Weir Sta Rgt (ft)	484.53
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.68
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.58
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	443.36
Culv Crt Depth (ft)	1.20	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	39.76	Culv Full Len (ft)	68.79
# Barrels	1	Culv Vel US (ft/s)	2.00
Q Barrel (cfs)	39.76	Culv Vel DS (ft/s)	2.00
E.G. US. (ft)	372.72	Culv Inv El Up (ft)	359.44
W.S. US. (ft)	372.53	Culv Inv El Dn (ft)	359.83
E.G. DS (ft)	372.63	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.42	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.10	Q Weir (cfs)	1666.38
E.G. IC (ft)	361.25	Weir Sta Lft (ft)	200.69
E.G. OC (ft)	372.71	Weir Sta Rgt (ft)	488.56
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.44	Weir Max Depth (ft)	2.83
Culv WS Outlet (ft)	363.83	Weir Avg Depth (ft)	1.69
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	485.29
Culv Crt Depth (ft)	1.21	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #1-YR Culv Group: Culvert #2

Q Culv Group (cfs)	84.08	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.74
Q Barrel (cfs)	84.08	Culv Vel DS (ft/s)	6.45
E.G. US. (ft)	363.17	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	362.76	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	362.28	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	362.01	Culv Exit Loss (ft)	0.37
Delta EG (ft)	0.89	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.75	Q Weir (cfs)	
E.G. IC (ft)	362.37	Weir Sta Lft (ft)	
E.G. OC (ft)	363.16	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.64	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.01	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.99	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	107.57	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.47
Q Barrel (cfs)	107.57	Culv Vel DS (ft/s)	6.68
E.G. US. (ft)	363.95	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	363.64	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	362.88	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	362.62	Culv Exit Loss (ft)	0.43
Delta EG (ft)	1.07	Culv Entr Loss (ft)	0.23
Delta WS (ft)	1.02	Q Weir (cfs)	
E.G. IC (ft)	362.96	Weir Sta Lft (ft)	
E.G. OC (ft)	363.95	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	363.25	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.62	Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.18	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	168.56	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	8.46
Q Barrel (cfs)	168.56	Culv Vel DS (ft/s)	8.46
E.G. US. (ft)	371.12	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	371.06	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	368.57	Culv Frctn Ls (ft)	1.04
W.S. DS (ft)	368.43	Culv Exit Loss (ft)	0.97
Delta EG (ft)	2.54	Culv Entr Loss (ft)	0.56
Delta WS (ft)	2.63	Q Weir (cfs)	288.80
E.G. IC (ft)	364.87	Weir Sta Lft (ft)	287.66
E.G. OC (ft)	371.13	Weir Sta Rgt (ft)	449.28
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	1.24
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	0.74
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	120.35
Culv Crt Depth (ft)	2.82	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	49.02	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.46
Q Barrel (cfs)	49.02	Culv Vel DS (ft/s)	2.46
E.G. US. (ft)	372.24	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.12	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.11	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	371.98	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.13	Culv Entr Loss (ft)	0.05
Delta WS (ft)	0.14	Q Weir (cfs)	1121.08
E.G. IC (ft)	361.47	Weir Sta Lft (ft)	220.77
E.G. OC (ft)	372.24	Weir Sta Rgt (ft)	475.88
Culvert Control	Outlet	Weir Submerg	0.84
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.34
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.38
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	352.26
Culv Crt Depth (ft)	1.38	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	39.43	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	1.98
Q Barrel (cfs)	39.43	Culv Vel DS (ft/s)	1.98
E.G. US. (ft)	372.56	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.40	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.47	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.30	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.10	Q Weir (cfs)	1487.23
E.G. IC (ft)	361.19	Weir Sta Lft (ft)	203.61
E.G. OC (ft)	372.56	Weir Sta Rgt (ft)	484.53
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.68
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.58
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	443.36
Culv Crt Depth (ft)	1.21	Min El Weir Flow (ft)	370.12

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	39.86	Culv Full Len (ft)	70.81
# Barrels	1	Culv Vel US (ft/s)	2.00
Q Barrel (cfs)	39.86	Culv Vel DS (ft/s)	2.00
E.G. US. (ft)	372.72	Culv Inv El Up (ft)	359.39
W.S. US. (ft)	372.53	Culv Inv El Dn (ft)	359.74
E.G. DS (ft)	372.63	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	372.42	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.09	Culv Entr Loss (ft)	0.03
Delta WS (ft)	0.10	Q Weir (cfs)	1666.38
E.G. IC (ft)	361.20	Weir Sta Lft (ft)	200.69
E.G. OC (ft)	372.72	Weir Sta Rgt (ft)	488.56
Culvert Control	Outlet	Weir Submerg	0.86
Culv WS Inlet (ft)	363.39	Weir Max Depth (ft)	2.83
Culv WS Outlet (ft)	363.74	Weir Avg Depth (ft)	1.69
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	485.29
Culv Crt Depth (ft)	1.21	Min El Weir Flow (ft)	370.12

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4932

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.34	1.15	381.36	5.15	381.18	6.14	381.2	7.86	381.16
10.94	381.18	23.92	381	30.33	380.86	45.55	380.35	51.93	380.07
65.77	379.6	68.46	379.68	70.71	379.61	75.04	379.33	80.36	379.11
107.04	378.79	117.65	378.45	125.92	378	132.09	376.99	138.71	376
142.75	375.74	145.13	375.77	151.41	375.65	152.99	375.6	162.62	375.4
164.08	375.33	165.89	375.33	172.24	375.73	177.38	376	177.63	376.05
181.27	376.17	185.16	376.34	192.75	376.58	200.87	376.58	208.17	376.57
210.94	376.5	239.9	376	245.1	375.7	245.52	375.7	248.29	375.54
248.6	375.54	250.31	375.45	256.27	375.5	262.18	375.3	281.18	374
296.71	372.3	299.71	372	320.36	371.86	345.94	370.82	375.13	370.26
405.43	368.96	424.73	368.62	429.83	363.66	442.94	363.7	444	363.1
444.02	363.09	449.76	359.84	461.09	359.04	468.33	363.925	475.48	368.75
476.07	368.78	476.1	368.79	501.36	370.51	527.01	371.18	549.43	374
568.87	375.7	572.79	376	583.63	376.6	584.84	376.64	587.35	376.78
588.79	376.83	590.9	376.94	610.8	377.12	614.03	377.22	619.02	377.46
633.02	378.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	442.94	.04	468.33	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
442.94	468.33	86.54	87.15	87.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	442	370.15	F
476.1	633.02	370.15	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4845

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.58	4.55	380.55	6.68	380.49	9.66	380.28	16.63	379.98
26.33	379.81	62.1	378.84	98.92	378	99.32	377.89	136.94	376
143	375.91	149.44	376	152.28	376.1	156.17	376.13	191.4	376.8
203.32	376.79	209.98	376.63	238.93	376.59	244.45	376.21	250.81	376
261.25	374.62	275.77	372	281.64	371.31	290.21	370.67	304.89	369.51
331.41	367.13	348.83	364.14	380.45	364.27	402.65	363.64	402.68	363.64
406.34	363.53	414.27	358.13	417.64	357.81	425.27	358.61	432.32	365.43
433.19	365.53	433.22	365.53	453.71	367.76	474.07	367.76	485.62	368
502.49	370	503.75	370.14	505.06	370.4	505.48	370.53	507.56	370.13
509	370	513.04	370	518.39	370.19	521.7	370.19	524.91	370.37
537.92	371.65	541.22	371.89	542.32	372.1	545.8	372.19	575.74	373.74
577.08	373.86	599.27	377.01	605.31	377.77	608.04	378.01	611.15	378.12
614.15	378.14	616.12	378.1	621.88	378.21	625.35	378.34	639.16	379.09
657.61	380	661.97	380.57	669.23	381.67	678.71	383.47		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	406.34	.04	433.22	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.34	433.22	89.54	100.49	110.66	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
336.4	363.2	385	F
550.5	618	385	F

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
127.8	235.6	385	296.1	336.4	385	454	504.5	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4745

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.11	21.9	380.04	28.76	379.88	34.3	379.51	43.1	379.86
53.28	379.9	56.58	379.78	62.04	379.32	72.76	379.37	82.93	379.28
86.47	379.41	92.14	379.33	95.69	379.17	109.62	379.08	135.12	378.66
137.45	378.48	167.42	378.8	171.95	378.72	192.21	378	200.65	377.24
235.54	377.01	241.83	376.74	253.23	377.1	255.58	376.97	271.08	376.62
275.97	376.65	279.99	377.08	282.06	377.08	293.56	376.33	300.79	376.13
316.78	375.92	330.78	375.45	339.87	375.04	353.65	374	362.03	373.25
376.22	371.8	398.14	369.91	398.19	368.67	441.73	364.73	471.43	362.82
491.34	362.87	497.92	361.09	497.93	361.09	503.16	359.68	507.05	359.79
508.57	357.67	513.05	357.45	516.27	357.67	524	363.35	528.02	363.37
528.05	363.37	543.42	363.45	576.59	363.78	580.38	364	587.66	364.1
599.83	364.36	607.95	364.42	639.8	366	660.86	367.5	675.48	368.86
685.51	370	701.05	372.18	718.22	373.29	725.55	373.48	731.12	374.02
748.44	374.98	752.53	375.3	765.7	375.87	778.37	376.85	791.24	378
806.37	380	808.13	380.31	815.79	381.16	824.93	382	831.66	382.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	491.34	.04	524	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
491.34	524	111.08	108.67	106.25	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4636

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380.34	6.89	380.72	8.14	380.72	21.8	379.64	39.34	378
67.85	376	132.49	373.43	147.33	374	162.25	376	169.4	376.34
178.16	375.89	185.65	375.64	200.34	375.76	233.4	375.68	239.11	375.36
249.5	375.34	251.25	375.42	257.5	375.35	267.44	374.96	277.67	374.75
315.27	374.57	318.08	374.63	344.76	374	355.8	372	365.77	370
409.43	368	426.89	366.86	461.95	364.11	477.5	361.95	477.88	361.7
477.89	361.69	483.5	357.91	493.33	357.61	499.07	357.85	502.3	362.25
508.59	362.41	508.61	362.41	524.4	362.83	556.76	362.64	588.33	363.03
609.48	362.74	620.82	363.21	643.23	363.52	650.91	363.84	673.28	365.16
690.67	365.89	697.4	365.96	767.85	369.67	776.5	370	791.17	370.91
827.59	374	829.12	374.06	835.04	374	840.77	373.45	865.39	370
874.22	368	886.48	367.07	898.7	368	908.05	370	921.08	372
930.79	374	936.24	376	940.95	378	945.37	380	961.95	388
966.25	390	970.84	392	976.29	394	984.5	396		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	477.5	.04	502.3	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
477.5	502.3	90.09	85.72	81.01	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
829.12	930.96	374.06	T

Blocked Obstructions num= 3

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
12.5	47.6	385	159.7	233.5	385	289.2	333.6	385

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4550

INPUT
Description:
Station Elevation Data num= 72

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         487.5  517.99           205.67  206.54  206.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
   530.1 1003.09  370.88       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 4400

INPUT
Description: US 40
Distance from Upstream XS =      53
Deck/Roadway Width        =     104
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     5.8     380              83     378             165     376
     237     374             324     372             391 371.588
     429 371.157           463.7 370.927           490.9 370.876
   527.4 371.004           560.1 371.263           596.7  371.72
     644     372             732     374             786     376
     860     378             928     380             999     382

Upstream Bridge Cross Section Data
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  380.61    5.72     380   14.44  379.53   24.98  379.26   49.94     378
   51.11  377.81   52.48  377.77   57.27  377.13   65.46  377.09   83.13  376.44
  115.32  376.53  129.27   376.2  134.89   375.7   161.6   375.1  180.09  374.38
  184.24     374  192.05  373.05  194.36   373.3  203.06   373.7  213.23  373.33
  227.71  372.43  230.87  372.39  241.61  372.73  250.77  372.75  269.45  372.53
  285.09  372.56  296.76  372.27  299.73  372.12  301.56  372.12  324.23  373.13
  352.74  371.54  360.77  370.69  406.27  367.82  421.84  366.98  442.28  366.44
  468.82  365.41  485.45  363.53   487.5  362.45  487.54  362.43  497.34  357.27
  502.26  357.24  507.29  357.62  517.01  361.85  517.99  361.92  518.04  361.92
   534.2  362.95  563.73   363.2  593.31  362.98  614.08  362.38  634.37  362.55
  654.16  363.24  660.04  363.19  685.91  363.78  696.84  364.73  723.22  364.95
  742.94  365.93  815.68  370.67  842.59     372  866.09  374.13  871.35  374.51
  874.28  374.54  906.93  376.44  924.53     378  932.06  378.21  947.24  379.65
  949.47  379.69  952.48  379.61  972.07  380.62  978.55  380.78  985.97  381.67
  993.29  382.35 1003.09   382.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   487.5     .04  517.99    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         487.5  517.99             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  324.23  373.13       F
  324.23   450.1  370.88       F
```

```
   530.1 1003.09  370.88       F

Downstream  Deck/Roadway Coordinates
    num=      11
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      13     378              97     376             158     374
   290.3 372.244             328  371.79           354.7 371.615
   387.1 371.555           419.8  371.62           453.4 371.896
   491.3 372.287             600     374

Downstream Bridge Cross Section Data
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  379.39     3.9  379.26    7.14  379.08    8.79  379.03   11.22  378.89
   14.53  378.78   17.41  378.61   25.86  378.28    32.7   378.1   37.64  377.91
   47.11  377.39    52.1  377.51   58.99  377.54   77.62  377.45   88.21  377.23
   92.02  377.21   95.64  377.34  113.55  377.38  122.03     377  137.03  376.62
  138.43  376.63   139.9  376.54  142.13  376.29  145.36     376  158.31  375.76
  187.11  374.72  198.02   374.5  200.77  374.48  208.31  374.54   212.2  374.51
   224.1     374  231.63  372.98   244.2   372.1  267.66  371.03  274.63  370.67
  284.57     370  294.75  364.77  310.72  364.84   317.5  367.36  326.34  364.31
  347.85  362.45  366.55  361.42  369.78  361.24  371.99  357.69   373.8  356.67
  379.51  351.69   381.6     352  394.25  354.75  396.69  357.39  399.49  360.42
  420.27  362.04  443.45   362.5  460.82  363.19  487.61     366  491.52  366.47
  492.41  366.52  501.31  366.41  508.11  366.82  510.99  366.89  511.84  366.96
  518.45  367.09  530.63  367.88  531.82     368  543.84     370  556.98     372
  567.14  372.99  573.69  373.54  580.03     374  596.09  374.78  599.01  375.01
   603.8  375.23  612.54     376  624.11  376.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  369.78     .04  399.49    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        369.78  399.49            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     369   361.7       F
     400  624.11   361.7       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 32   136.5     .013     .013        0                  .3               1
Upstream   Elevation =  357.575
           Centerline Station =  502.25
Downstream Elevation =  357.07
           Centerline Station =  382

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        167.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          8.76
  Q Barrel (cfs)            167.00    Culv Vel DS (ft/s)          8.98
  E.G. US. (ft)             361.51    Culv Inv El Up (ft)       357.58
  W.S. US. (ft)             361.43    Culv Inv El Dn (ft)       357.07
  E.G. DS (ft)              359.40    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              359.37    Culv Exit Loss (ft)         1.25
  Delta EG (ft)               2.11    Culv Entr Loss (ft)         0.36
  Delta WS (ft)               2.06    Q Weir (cfs)
  E.G. IC (ft)              361.38    Weir Sta Lft (ft)
  E.G. OC (ft)              361.51    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        359.96    Weir Max Depth (ft)
  Culv WS Outlet (ft)       359.39    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.32    Weir Flow Area (sq ft)
```

Culv Crt Depth (ft)	2.38	Min El Weir Flow (ft)	371.57

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	214.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.51
Q Barrel (cfs)	214.00	Culv Vel DS (ft/s)	9.65
E.G. US. (ft)	362.22	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	362.13	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	359.60	Culv Frctn Ls (ft)	0.21
W.S. DS (ft)	359.56	Culv Exit Loss (ft)	1.69
Delta EG (ft)	2.62	Culv Entr Loss (ft)	0.42
Delta WS (ft)	2.57	Q Weir (cfs)	
E.G. IC (ft)	362.10	Weir Sta Lft (ft)	
E.G. OC (ft)	362.22	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	360.39	Weir Max Depth (ft)	
Culv WS Outlet (ft)	359.84	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.77	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.81	Min El Weir Flow (ft)	371.57

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
Warning: During the supercritical analysis, the program could not converge on a supercritical answer in the downstream cross
section. The program used the solution with the least error.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	626.00	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	15.65
Q Barrel (cfs)	626.00	Culv Vel DS (ft/s)	15.65
E.G. US. (ft)	368.46	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	368.42	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	361.66	Culv Frctn Ls (ft)	1.44
W.S. DS (ft)	361.51	Culv Exit Loss (ft)	4.21
Delta EG (ft)	6.80	Culv Entr Loss (ft)	1.14
Delta WS (ft)	6.91	Q Weir (cfs)	
E.G. IC (ft)	370.36	Weir Sta Lft (ft)	
E.G. OC (ft)	368.46	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	750.97	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.77
Q Barrel (cfs)	750.97	Culv Vel DS (ft/s)	18.77

E.G. US. (ft)	372.02	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.02	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	363.19	Culv Frctn Ls (ft)	2.08
W.S. DS (ft)	362.83	Culv Exit Loss (ft)	5.11
Delta EG (ft)	8.83	Culv Entr Loss (ft)	1.64
Delta WS (ft)	9.19	Q Weir (cfs)	468.03
E.G. IC (ft)	372.07	Weir Sta Lft (ft)	344.03
E.G. OC (ft)	372.02	Weir Sta Rgt (ft)	645.13
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.15
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.66
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	199.26
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	741.91	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.55
Q Barrel (cfs)	741.91	Culv Vel DS (ft/s)	18.55
E.G. US. (ft)	372.36	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.35	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	363.85	Culv Frctn Ls (ft)	2.03
W.S. DS (ft)	363.38	Culv Exit Loss (ft)	4.87
Delta EG (ft)	8.50	Culv Entr Loss (ft)	1.60
Delta WS (ft)	8.97	Q Weir (cfs)	824.09
E.G. IC (ft)	372.42	Weir Sta Lft (ft)	337.96
E.G. OC (ft)	372.36	Weir Sta Rgt (ft)	660.04
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.49
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	0.95
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	304.86
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	725.02	Culv Full Len (ft)	136.50
# Barrels	1	Culv Vel US (ft/s)	18.13
Q Barrel (cfs)	725.02	Culv Vel DS (ft/s)	18.13
E.G. US. (ft)	372.49	Culv Inv El Up (ft)	357.58
W.S. US. (ft)	372.48	Culv Inv El Dn (ft)	357.07
E.G. DS (ft)	364.38	Culv Frctn Ls (ft)	1.93
W.S. DS (ft)	363.92	Culv Exit Loss (ft)	4.65
Delta EG (ft)	8.11	Culv Entr Loss (ft)	1.53
Delta WS (ft)	8.56	Q Weir (cfs)	1020.98
E.G. IC (ft)	372.53	Weir Sta Lft (ft)	335.11
E.G. OC (ft)	372.49	Weir Sta Rgt (ft)	667.02
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	362.58	Weir Max Depth (ft)	1.65
Culv WS Outlet (ft)	362.07	Weir Avg Depth (ft)	1.07
Culv Nml Depth (ft)	5.00	Weir Flow Area (sq ft)	356.78
Culv Crt Depth (ft)	5.00	Min El Weir Flow (ft)	371.57

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.
Note: Culvert critical depth exceeds the height of the culvert.

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet
equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4344

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	379.39	3.9	379.26	7.14	379.08	8.79	379.03	11.22	378.89
14.53	378.78	17.41	378.61	25.86	378.28	32.7	378.1	37.64	377.91
47.11	377.39	52.1	377.51	58.99	377.54	77.62	377.45	88.21	377.23
92.02	377.21	95.64	377.34	113.55	377.38	122.03	377	137.03	376.62
138.43	376.63	139.9	376.54	142.13	376.29	145.36	376	158.31	375.76
187.11	374.72	198.02	374.5	200.77	374.48	208.31	374.54	212.2	374.51
224.1	374	231.63	372.98	244.2	372.1	267.66	371.03	274.63	370.67
284.57	370	294.75	364.77	310.72	364.84	317.5	367.36	326.34	364.31
347.85	362.45	366.55	361.42	369.78	361.24	371.99	357.69	373.8	356.67
379.51	351.69	381.6	352	394.25	354.75	396.69	357.39	399.49	360.42
420.27	362.04	443.45	362.5	460.82	363.19	487.61	366	491.52	366.47
492.41	366.52	501.31	366.41	508.11	366.82	510.99	366.89	511.84	366.96
518.45	367.09	530.63	367.88	531.82	368	543.84	370	556.98	372
567.14	372.99	573.69	373.54	580.03	374	596.09	374.78	599.01	375.01
603.8	375.23	612.54	376	624.11	376.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	369.78	.04	399.49	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
369.78	399.49	54.24	54.2	54.21	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	369	361.7	F
400	624.11	361.7	F

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4289

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.16	4.18	376.93	6.02	376.92	13.94	376.67	20.26	376.2
24.9	376.18	33.24	377.06	38.69	377.12	40.04	377.22	48.07	377.42
60.83	377.6	66.6	377.54	72.7	377.21	85.85	376	95.14	375.32
109.02	374.79	111.75	374.73	114.36	374.6	120.7	374.51	138.66	374
141.06	373.73	149.42	372.56	154.25	372	161.5	371.27	163.79	371.11
170.81	370	173.81	369.84	195.17	369.42	204.6	369.46	213.04	369.62
222.3	370	223.43	370.15	226.4	370.41	227.06	370.31	236.85	369.39
247.27	369.56	249.28	369.5	253.56	369.2	259.27	368.95	271.49	368
281.02	366	283.53	365.58	284.63	365.72	287.61	365.54	294.16	364
296.04	363.42	300.15	363.15	323.16	361.6	346.64	361.49	362.78	361.62
366.58	358.56	372.42	353.86	381.79	352.78	389.78	353.42	392.45	357.73
395.52	357.99	397.76	358.89	397.77	358.9	401.82	360.54	427.65	361.5
461.12	362.68	474.19	364	499.06	364.89	510.36	365.54	512.25	365.53
519.79	366	531.35	367.23	537.87	368	549.98	370	574.53	371.66
580.97	371.69	592.69	371.17	604.52	371.32				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	362.78	.04	401.82	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
362.78	401.82	104.83	104.42	103.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4185

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.48	9.2	369.89	11.88	369.82	17.34	369.84	34.57	369.3
53.84	368.42	59.13	368.23	62.34	368.17	68.09	368.17	70.92	368.38
76.7	368.52	81.21	368.71	88.53	369.21	100.23	369.08	113.03	368.39
118.84	368.28	119.85	368.31	124.69	368.28	130.99	368.32	143.69	368.07
174.23	367.24	184.05	366.87	189.65	366.83	193.83	366.87	199.74	366.51
200.31	366.52	202.71	366.37	206.47	366	222.83	365.23	229.16	365.1
237.63	364.59	245.34	364	270.04	362.83	279.56	362.32	284.22	362
317.36	360.81	352.39	360.17	380.43	360.08	403.96	360.43	405.79	359.32
407.94	358.02	410.35	357.61	417	355.97	420.8	354.77	430.79	360.87
435.8	361.06	435.83	361.06	448.07	361.52	480.45	361.7	518.27	363.36
531.33	364	532.88	364.19	543.89	364.64	551.51	365.01	553.39	365.05
557.04	365.2	562.67	365.52	565.16	365.53	571.76	365.76	589.17	365.65
601.4	365.75	611.19	365.7	613.71	365.74	619.92	366	625.24	366.72
632.9	367.41	636.14	367.76	639.39	368	644.27	368.63	644.65	368.64
646.39	368.9	647.36	368.89	650.3	369.29				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	403.96	.04	430.79	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
403.96	430.79	151.73	151.97	152.24	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 4033

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	371.31	6.28	371.09	10.1	370.82	11.41	370.78	13.41	370.65
16.07	370.59	24.34	370.14	26.91	370.09	30.53	370.19	38.94	370.2
41.71	370.32	43.77	370.21	45.82	370	47.56	369.91	61.47	368.93
64.73	368.91	74.46	369.43	84.71	369.4	87.19	369.59	93.43	369.89
94.09	369.89	96.1	370	98.42	370.2	102.15	370.38	104.17	370.4
106.65	370.37	110.1	370.2	112.15	370	115.71	369.82	128.08	369.81
137.68	369.7	151.03	369.46	154.18	369.16	164.93	368.77	175.08	368.49
185.11	368.1	190.59	367.77	192.4	367.74	209.8	366.53	222.55	365.72
229.81	365.17	231.09	365.15	237.47	365.25	254.65	364.85	274.84	362
281.46	361.45	311.04	360.26	324.61	359.69	324.63	359.69	327.57	359.56
332.63	355.53	339.8	355.05	344.88	355.72	350.28	359.03	354.96	359.02
354.99	359.02	368.82	358.97	388.87	359.13	402.39	358.88	463.03	360
463.46	360.12	468.3	360.75	482.77	362	495.13	362.44	501.53	362.51
509.75	362.5	519.32	362.16	523.42	362.13	524.98	362	532.66	361.82
536.09	361.79	548.11	361.82	551.96	362	557.9	362.44	583.12	363.9
596.37	364.95								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	327.57	.04	350.28	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
327.57	350.28	105.3	103.27	101.24	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 3930

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	373.25	5.62	373.04	18.75	372.65	20.05	372.56	51.89	373.28
67.22	372.62	75.52	372.21	81.21	372	82.89	371.8	83.35	371.81
100.65	370.82	104.09	370.51	109.16	370	119.9	369.24	121.3	369.19
125.83	369.28	143.55	369.25	145.3	369.37	145.92	369.31	149.12	369.58
149.56	369.54	151.28	369.67	155.23	369.78	159.52	369.77	162.64	369.66

```
  165.16   369.5  170.48     369  173.88  368.53  174.87  368.43  177.64     368
  179.57  367.59  182.98  366.78  185.85     366  189.84  365.01  193.24     364
  205.26  362.99  232.35  361.15  264.16  359.45  274.41  358.31  274.42  358.31
  280.37  357.65  286.95  354.74  289.44  354.49  294.11  355.34  299.09  358.68
  305.18  358.74  305.19  358.74  321.51  358.88  353.18  358.92  436.87     360
  449.41     362  451.92  362.47  457.66  363.46  461.04     364  466.97  364.48
  469.66  364.48   474.3  364.61  476.21  364.58  476.86  364.61  477.78  364.59
  488.71  364.64  490.27  364.68  512.72  365.88  514.21     366  532.64     368
  542.86     370  544.26  370.23   546.1  370.43  549.88  370.48  552.59  370.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  280.37     .04  299.09    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        280.37  299.09           112.01  113.72  114.59             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
     176   200.4     375       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   163.1     176     375

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3816

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  374.86    10.9     374   35.12     372   42.05  371.48   47.58  371.12
   58.88  370.34   59.53  370.34   78.46   370.9   81.56  371.04   85.42  370.91
    91.5   370.8   96.65  370.74   108.4  370.09  110.41     370  112.14   369.8
  112.78  369.76   116.9  369.37  121.06     369  125.02   368.8  128.66  368.54
  132.43   368.4  135.47  368.11  138.27  368.07  140.86  368.14   143.7  368.03
  150.81   367.6   154.5  367.24  157.37  366.85  163.04     366  174.59  362.82
  217.65  358.92   236.4  357.65  236.42  357.65  237.46  357.58  243.76  354.29
   251.5   353.5  252.56  353.49   255.1  356.69   266.5  357.28  266.52  357.28
  271.38  357.54  301.23  358.52  327.76  358.95  350.57     360  371.84  361.19
  386.87     362  399.91  363.11  404.12  363.54  410.91  364.18  416.03  364.61
  421.73     365  428.74  365.37  429.75  365.39  438.84  365.39  440.51  365.38
  443.31   365.3  444.17  365.29  449.76  365.05  455.01  364.86  460.03   365.2
  465.28  365.49   469.1  365.73  472.03  365.86  472.64  365.86  474.82  366.04
  496.26   366.8  498.97  366.85  515.31  366.69  518.73   366.8  522.16  366.85
  525.33  367.02  526.96  367.04   534.8  367.32  549.03     368  554.32  368.52

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  237.46     .04   255.1    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        237.46   255.1            128.5  127.87  127.21             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
   173.5   186.9     375       F
   373.3   445.4     375       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   142.2   173.5     375

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3688

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.19   12.07  367.61   20.74  367.88   33.44   368.3   35.81  368.34
   36.91  368.35   38.51   368.3    41.9  368.05   42.34     368   46.49  367.62
   57.82  366.07   58.06     366   58.98  365.89   59.73  365.86   61.35  365.74
   62.76  365.59   63.36  365.54   64.65  365.39   65.31  365.33   65.53   365.3
   68.14  364.99   69.06  364.94   77.78  365.17   78.29  365.12   78.87  365.13
   79.51  365.14   81.34  364.92   81.98  364.92   82.64  364.91   84.22  364.72
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   85.27  364.68   87.32  364.44   87.96   364.4   91.82     364   92.71  363.94
   94.56   363.8  107.05  361.62  112.03  361.62  156.44  357.41  156.46  357.41
  166.74  356.43  170.56  353.16  171.46  352.86  179.43  353.24  182.46  356.86
  186.46     357  186.47  357.01  203.22  357.63   227.7   358.5  256.67     360
  261.88  360.34  264.57  360.54  271.14  360.98  283.16  361.89  284.48     362
  293.32  363.31  295.65   363.6  300.63  364.22  302.93  364.48  304.51  364.65
  310.25  365.25  317.77  366.05  320.57  366.39   321.8  366.52  324.49  366.86
  328.15  367.23  329.94  367.46  331.84  367.65  332.96  367.78  334.64     368
  343.14  368.38  353.94  368.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  166.74     .04  182.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        166.74  182.46           137.67  137.99   138.3             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    72.5   108.3     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   309.8   338.6     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3550

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  367.59   21.83     366   22.15  365.93   22.36  365.91   22.65  365.88
   24.81  365.75   34.15  365.49   36.08  365.41   36.47  365.41   56.33  364.39
   62.74  364.35   64.54  364.35   78.24  364.86   78.82  364.87   80.11   364.9
   92.13  365.45   95.39  365.49   97.19  365.52   98.79  365.54  111.29  364.66
  113.06  364.51  113.63  364.52  115.75  364.34  116.17  364.34  118.14  364.18
  118.26  364.18  120.55     364  125.47  363.66  128.06  363.49  130.87  363.32
  133.62  363.17  137.86  362.93  141.25  362.78  142.84  362.67  144.42  362.54
  144.88  362.52  147.11   362.3   147.6  362.27  150.07     362  168.07  360.18
  202.08  358.28  222.67  356.22  222.69  356.22  229.29  355.55  231.57  353.11
  237.67  352.85  241.52  353.14  245.66  357.02   252.8  357.45  270.01   358.5
  299.86  361.08  320.94  363.87  322.12  363.98  326.43  364.47  335.31     366
  338.09  366.52  340.43  367.05  344.77     368  352.58  368.68  357.63  369.11
  363.94  369.54  366.26  369.71  370.89     370  376.06  370.55  378.66  370.84
  385.91   371.5  387.76   371.7  391.56     372  393.08  372.13  393.26  372.12
  394.51   372.2  396.42  372.27  400.73  372.39  401.46  372.38

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  222.67     .04  245.66    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        222.67  245.66           121.58  121.96  122.09             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     132   172.9     370       F
   358.4  401.46     375       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3428

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.25     .08  366.25     .21  366.24    2.49  366.31    5.55  366.33
     6.5  366.31    6.69   366.3    6.85  366.29    6.95  366.28    7.02  366.27
    7.07  366.26    7.09  366.26    7.37  366.14     7.5  366.11    7.73  366.11
    7.81     366   17.71  365.88   17.76  365.88   35.41  362.54   54.26  359.25
   71.12  356.77   71.14  356.77   72.75  356.53   82.67  355.38    85.4  352.15
   86.22  352.06   88.74  351.86   91.45  352.09   93.89  352.39   98.94  357.17
  101.38  357.43  121.79  359.59   156.9  362.39  164.18  363.89  164.43  364.14
  168.22  363.93  172.23  363.84   172.9  363.86     176  363.96   177.1     364
  178.13   364.1  190.23  365.12  198.83  365.85  199.59  365.91  200.67     366
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   208.9  367.19  214.54     368  221.01  368.41  227.99  368.94  228.59  368.95
  229.18  368.96  244.28  369.43

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   82.67     .04   98.94    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         82.67   98.94           131.85  132.32  132.95             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    31.2    57.1     370       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     7.4    31.2     370   207.8   224.4     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3296

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  369.04    7.44  368.25    8.57   368.2   13.73     368   15.86  367.86
   16.24  367.82   20.57  367.48   24.23  367.01    30.3  366.41   32.66     366
   34.91  365.82   36.33  365.68   37.74  365.56   39.57  365.37   40.92  365.29
   43.15  365.29    43.9  365.26   57.19  365.22   65.98  364.57   67.12  364.52
   74.19     364   78.97  363.56   80.16  363.45   86.96  362.83   90.65  362.47
   94.56  362.11   95.89     362    97.9   362.2   98.84  362.19  107.93  362.58
  109.64  362.69  113.85  362.82  117.37  362.83  135.78  361.77  153.23  361.58
  168.24  361.26   168.8  361.63  178.91  362.18  192.98  358.61  195.06  357.92
  201.72  355.69  204.53  352.08  205.68  351.83  208.07  351.91  210.45  351.72
  213.06   352.1  214.14  351.94  214.68  352.11   218.9  356.65  223.16  358.34
  225.56  358.53  225.57  358.53   241.1  359.76  252.96  359.64  253.63  359.34
   274.2  360.14  298.22  360.84  338.52     362  345.28  362.49  349.83   362.8
  358.24  363.42  360.55  363.61  366.27     364  376.16  364.76  381.02   365.1
  384.43  365.36   386.5  365.49  387.73  365.58  388.62  365.62  390.74  365.78
  391.33   365.8  393.98     366  397.53  366.12  401.29  366.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  195.06     .04  223.16    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        195.06  223.16           117.57  116.94  115.99             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3179

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.99    2.92  366.32    4.49     366    7.03  365.74   10.65  365.61
   11.25  365.55   16.84  365.58   20.65  365.55   33.69  365.26   37.05  365.27
   37.83  365.19   39.74  365.22   40.57  365.13   41.71  365.14   42.29  365.07
   42.83  365.07    44.3  364.91   44.81  364.89   52.54  364.19   59.05  363.73
   59.96  363.72   64.43     364   81.81  364.24   90.25  364.43   92.01   364.4
   99.97     364  104.37  363.32  108.33  362.78  110.63  362.49   114.3  362.12
  115.81     362  120.17  361.84  122.87  361.79  123.54  361.75     128  361.77
  128.34  361.74  133.43  361.84  133.74  361.82  143.14  361.87   149.1  361.65
  164.07  359.25  179.76  356.13  194.67  355.75   202.4  355.27  206.08  354.62
   206.1  354.62  214.08  353.21  222.22  351.72   224.4  350.87  225.57  350.64
  226.07   350.5  226.87  350.39  227.28  351.49  228.52  356.98  237.22  357.51
  237.24  357.52   245.5  358.02  261.13  358.56  278.43  358.68  287.56  359.19
  290.34  359.37   293.7  359.56  297.36  359.67  300.98  359.87  307.03     360
  313.84  360.92  321.07     362  329.79  363.01     342  364.37  355.84     366
  363.77  366.33  385.35  367.64  391.11  368.04  397.46  368.33

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  179.76     .04  228.52    .075
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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        179.76  228.52            101.1  102.24  103.14             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0    63.2     370       F
    80.2      98     370       F
   277.5   332.8     370       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
      98     149     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 3077

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  364.18    1.12  364.15    2.53  364.12    3.97   364.1    8.56   364.2
    8.98   364.2   10.31  364.25   11.19  364.24   13.14  364.15    13.5  364.12
   14.57     364   18.43  363.88   21.38  363.78   24.61  363.74   33.92  363.48
   39.77  363.33   48.31  362.93   50.98  362.82   61.21  362.37   63.02  362.31
    70.2     362   74.59   361.6    77.1  361.43   82.58  360.97   83.28  360.94
   95.42  360.41   99.21  360.31  103.01  360.23  103.64  360.21  104.52  360.13
  105.54     360  107.69  359.58  114.03     358  134.95   356.4  140.36     356
  163.01  355.01  179.63  355.11  193.39  354.95  204.81  355.12  210.64  354.59
  210.65  354.59     217  354.02  219.69  351.67  221.67  350.95  222.49  350.87
   223.8  350.87  226.26  350.75  228.21  350.72  229.11  350.89  230.73  354.07
  234.33  355.41   241.4  355.41  250.01  355.42  265.82  356.22  283.13  356.64
  290.94  357.97  293.37  357.99  293.48     358  295.67  358.42  300.65   359.3
   303.5  359.83  304.53     360  320.68  361.37  322.55  361.51  328.44     362
  330.19  362.24  341.42     364  344.14   364.6  349.88     366  354.73  367.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  204.81     .04  234.33    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        204.81  234.33             99.64   98.98   98.39             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2978

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  362.91   26.14   362.3   28.29  362.14    29.8   362.2   30.23  362.16
   30.97     362   35.23  361.59   35.47  361.59   37.04  361.43   37.26  361.43
    38.5   361.3   38.73  361.31   45.76  360.54   80.82  360.96  102.15  360.38
  114.55  360.01  118.88  359.77  161.71  358.87  229.91     358  230.71  357.16
  236.45  357.02  243.79  356.29  243.81  356.29  245.02  356.16  250.07  353.33
  252.35  352.96  254.47  350.89  255.74  350.56  257.29  350.63  259.41  350.68
   261.6  350.53  263.18  350.69  263.71  350.84  265.48  354.05  274.04   355.2
  274.05   355.2  275.87  355.44  297.22  357.18  316.25  361.84   320.6  362.22
  347.97  363.14  347.98  363.82  352.13     364  360.46   364.7  368.43  365.33
   374.4  365.77  378.19     366  379.71  366.15  380.66  366.19  383.79  366.08
  384.49  366.11  386.36     366  389.31  365.95  390.69     366  391.27  366.26
  391.59  366.47  398.39  367.21  402.86     368  410.75     370  415.21  370.52
  417.39  370.39  425.64  370.89  432.78     372  437.01  373.28  442.02  374.48
  446.02  375.38  448.25  375.83  449.28     376  451.72  376.13  455.64  376.24
   456.7  376.24  472.15  376.84  479.93  377.06  491.12  376.37

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  245.02     .04  274.04    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        245.02  274.04            61.85   60.74   60.21             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0  141.71  359.42       F
  333.74   436.4  359.42       F
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   436.4   487.3     370       F
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    23.3    86.1     370   160.1   223.6     370     343     389     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2917

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.13    2.63  368.04    6.35  367.71    9.99  367.48    11.7  367.47
   35.48  366.41    37.6   366.2   47.35     366    53.1  365.63   55.49  365.67
   59.74  365.47   61.17  365.78   62.32   365.9   63.72  365.91   67.25  365.78
      68  365.82    71.7  365.74   87.56  365.03  104.39     364  110.05  363.87
  115.72     364  121.31  364.39  126.33  364.38  131.94  364.63  136.94  363.92
  168.89     362   189.9  361.76   192.5     362  193.52  362.01  197.76   361.7
  204.56  361.38  249.88  360.38  263.45  359.81  270.42  359.65  306.63   359.2
  346.56  358.69  357.45  358.68  370.03  358.66  382.52  358.63  395.46  358.28
  408.81  358.21  431.48  357.13  440.02  355.31  440.05  355.31  441.62  354.97
   449.4  353.04  452.07  350.76  453.48  350.54  456.39  350.36  460.31  350.51
  460.82  350.59  463.55  354.74  471.92  355.74  471.94  355.74  475.59  356.18
  490.04  357.59  503.18  359.84  518.18  361.77  535.05  361.94   560.7  363.42
  591.03  363.84  596.29     364  615.98  366.75  623.66  366.17  626.79  366.33
  628.12  366.32  630.23  366.52  637.46     368  644.61     370  649.83  370.84
  653.46  371.06  662.64  371.32  668.42     372  676.66  372.58  679.51  372.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  440.02     .04  471.92    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        440.02  471.92             89.63   90.26   89.98             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

CULVERT


RIVER: Plumtree
REACH: Plumtree           RS: 2900

INPUT
Description: Frederick Road
Distance from Upstream XS =      32
Deck/Roadway Width        =      33
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      15
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   368.5              23     368              86     366
     146     364             200     362             259     360
   337.5 359.415           380.1 359.626           407.4 359.923
   427.3 360.169           456.8 360.827           563.7 363.651
     590     364             641     366          679.51     367

Upstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  368.13    2.63  368.04    6.35  367.71    9.99  367.48    11.7  367.47
   35.48  366.41    37.6   366.2   47.35     366    53.1  365.63   55.49  365.67
   59.74  365.47   61.17  365.78   62.32   365.9   63.72  365.91   67.25  365.78
      68  365.82    71.7  365.74   87.56  365.03  104.39     364  110.05  363.87
  115.72     364  121.31  364.39  126.33  364.38  131.94  364.63  136.94  363.92
  168.89     362   189.9  361.76   192.5     362  193.52  362.01  197.76   361.7
  204.56  361.38  249.88  360.38  263.45  359.81  270.42  359.65  306.63   359.2
  346.56  358.69  357.45  358.68  370.03  358.66  382.52  358.63  395.46  358.28
  408.81  358.21  431.48  357.13  440.02  355.31  440.05  355.31  441.62  354.97
   449.4  353.04  452.07  350.76  453.48  350.54  456.39  350.36  460.31  350.51
  460.82  350.59  463.55  354.74  471.92  355.74  471.94  355.74  475.59  356.18
  490.04  357.59  503.18  359.84  518.18  361.77  535.05  361.94   560.7  363.42
  591.03  363.84  596.29     364  615.98  366.75  623.66  366.17  626.79  366.33
  628.12  366.32  630.23  366.52  637.46     368  644.61     370  649.83  370.84
```

```
  653.46  371.06  662.64  371.32  668.42     372  676.66  372.58  679.51  372.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  440.02     .04  471.92    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        440.02  471.92             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   409.3  359.42       F
   485.9  679.51  359.42       F

Downstream  Deck/Roadway Coordinates
    num=      13
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0     368              60     366             120     364
     174     362             234     360           312.1 359.415
   354.5 359.626           382.1 359.923           401.6 360.169
   431.7 360.827           538.1 363.651             556     364
     615     366

Downstream Bridge Cross Section Data
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   369.6    2.79  369.53    7.15  369.53   11.31  369.26   13.16  369.19
   29.03  369.08   30.88     369    36.7  368.66   39.93  368.57   49.72  368.38
   60.81     368    70.9  367.78   72.58  367.64    82.8  367.42   83.97  367.32
   85.38  367.24   87.77  367.18  103.95  366.38  107.73  366.28   112.2     366
   120.8  365.91  127.85  365.89  128.36  365.86  135.62  365.86  136.08  365.83
  142.61  365.76  143.72  365.66  148.33  365.55  150.36  365.39  156.37  365.12
  167.42  364.81  172.69  364.56  182.09  364.16  185.28     364  191.33   363.8
  196.54  363.59  198.83  363.62   204.7  363.42  205.45  363.36   212.4  363.01
  219.55  362.54  226.48     362  235.55  361.62  255.36     360  265.66  359.25
  278.67  358.18  280.71     358  313.84  356.42  337.03  355.63  363.87     355
  377.78   354.9  391.73  354.54   400.8  353.95  402.55  353.74  411.94  352.62
  421.34  350.08  422.54     352  426.28  353.73  432.62   354.3  432.64  354.31
  432.77  354.32  441.96   355.6  462.76  357.08  477.11  359.05  499.49  362.25
  513.76  363.04  527.63     362  539.48  362.57  551.98  362.82  561.27  363.13
  572.05  363.79   574.3     364  591.29  364.92   612.3  365.73  623.32  366.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   400.8     .04  432.64    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         400.8  432.64             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  395.05  356.75       F
   445.1  623.32  356.75       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch    8.25   12.78
FHWA Chart # 34- 18 inch corner radius; Corrugated metal
FHWA Scale # 1 - 90 Degree headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 20    56.5     .024     .024        0                  .5                1
Upstream   Elevation =  350.33
           Centerline Station =  456
Downstream Elevation =  350.16
           Centerline Station =  421

CULVERT OUTPUT  Profile #1-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        188.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          4.11
  Q Barrel (cfs)            188.00    Culv Vel DS (ft/s)          3.98
```

E.G. US. (ft)	354.64	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	354.42	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	354.43	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	354.18	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.21	Culv Entr Loss (ft)	0.13
Delta WS (ft)	0.24	Q Weir (cfs)	
E.G. IC (ft)	353.51	Weir Sta Lft (ft)	
E.G. OC (ft)	354.64	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	354.25	Weir Max Depth (ft)	
Culv WS Outlet (ft)	354.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.05	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.23	Min El Weir Flow (ft)	359.43

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	208.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.35
Q Barrel (cfs)	208.00	Culv Vel DS (ft/s)	4.23
E.G. US. (ft)	354.84	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	354.61	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	354.59	Culv Frctn Ls (ft)	0.21
W.S. DS (ft)	354.34	Culv Exit Loss (ft)	0.03
Delta EG (ft)	0.25	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.27	Q Weir (cfs)	
E.G. IC (ft)	353.72	Weir Sta Lft (ft)	
E.G. OC (ft)	354.84	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	354.40	Weir Max Depth (ft)	
Culv WS Outlet (ft)	354.34	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.25	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.36	Min El Weir Flow (ft)	359.43

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	613.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.16
Q Barrel (cfs)	613.00	Culv Vel DS (ft/s)	9.47
E.G. US. (ft)	358.15	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	357.93	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	356.32	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	355.80	Culv Exit Loss (ft)	0.87
Delta EG (ft)	1.83	Culv Entr Loss (ft)	0.65
Delta WS (ft)	2.14	Q Weir (cfs)	
E.G. IC (ft)	357.35	Weir Sta Lft (ft)	
E.G. OC (ft)	358.15	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	356.20	Weir Max Depth (ft)	
Culv WS Outlet (ft)	355.80	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	4.32	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	886.67	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.15
Q Barrel (cfs)	886.67	Culv Vel DS (ft/s)	11.77
E.G. US. (ft)	360.55	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.38	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	357.49	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	356.97	Culv Exit Loss (ft)	1.63
Delta EG (ft)	3.07	Culv Entr Loss (ft)	0.97
Delta WS (ft)	3.41	Q Weir (cfs)	356.33
E.G. IC (ft)	360.50	Weir Sta Lft (ft)	242.48
E.G. OC (ft)	360.55	Weir Sta Rgt (ft)	444.82
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	357.65	Weir Max Depth (ft)	1.14
Culv WS Outlet (ft)	356.97	Weir Avg Depth (ft)	0.74
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	150.37
Culv Crt Depth (ft)	5.45	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	912.09	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.18
Q Barrel (cfs)	912.09	Culv Vel DS (ft/s)	11.47
E.G. US. (ft)	360.98	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	360.77	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.02	Culv Frctn Ls (ft)	1.20
W.S. DS (ft)	357.49	Culv Exit Loss (ft)	1.51
Delta EG (ft)	2.96	Culv Entr Loss (ft)	0.97
Delta WS (ft)	3.29	Q Weir (cfs)	668.91
E.G. IC (ft)	360.92	Weir Sta Lft (ft)	230.51
E.G. OC (ft)	360.98	Weir Sta Rgt (ft)	462.05
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.07	Weir Max Depth (ft)	1.55
Culv WS Outlet (ft)	357.49	Weir Avg Depth (ft)	1.03
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	238.52
Culv Crt Depth (ft)	5.57	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	914.19	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	10.98
Q Barrel (cfs)	914.19	Culv Vel DS (ft/s)	11.21
E.G. US. (ft)	361.29	Culv Inv El Up (ft)	350.33
W.S. US. (ft)	361.04	Culv Inv El Dn (ft)	350.16
E.G. DS (ft)	358.45	Culv Frctn Ls (ft)	1.09
W.S. DS (ft)	357.89	Culv Exit Loss (ft)	1.39
Delta EG (ft)	2.84	Culv Entr Loss (ft)	0.94
Delta WS (ft)	3.15	Q Weir (cfs)	995.81
E.G. IC (ft)	361.22	Weir Sta Lft (ft)	220.63
E.G. OC (ft)	361.29	Weir Sta Rgt (ft)	474.74
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	358.48	Weir Max Depth (ft)	1.89
Culv WS Outlet (ft)	357.89	Weir Avg Depth (ft)	1.26
Culv Nml Depth (ft)	8.25	Weir Flow Area (sq ft)	319.92
Culv Crt Depth (ft)	5.58	Min El Weir Flow (ft)	359.43

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2827

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	369.6	2.79	369.53	7.15	369.53	11.31	369.26	13.16	369.19
29.03	369.08	30.88	369	36.7	368.66	39.93	368.57	49.72	368.38
60.81	368	70.9	367.78	72.58	367.64	82.8	367.42	83.97	367.32
85.38	367.24	87.77	367.18	103.95	366.38	107.73	366.28	112.2	366
120.8	365.91	127.85	365.89	128.36	365.86	135.62	365.86	136.08	365.83
142.61	365.76	143.72	365.66	148.33	365.55	150.36	365.39	156.37	365.12
167.42	364.81	172.69	364.56	182.09	364.16	185.28	364	191.33	363.8
196.54	363.59	198.83	363.62	204.7	363.42	205.45	363.36	212.4	363.01
219.55	362.54	226.48	362	235.55	361.62	255.36	360	265.66	359.25
278.67	358.18	280.71	358	313.84	356.42	337.03	355.63	363.87	355
377.78	354.9	391.73	354.54	400.8	353.95	402.55	353.74	411.94	352.62
421.34	350.08	422.54	352	426.28	353.73	432.62	354.3	432.64	354.31
432.77	354.32	441.96	355.6	462.76	357.08	477.11	359.05	499.49	362.25
513.76	363.04	527.63	362	539.48	362.57	551.98	362.82	561.27	363.13
572.05	363.79	574.3	364	591.29	364.92	612.3	365.73	623.32	366.32

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   400.8     .04  432.64    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         400.8  432.64             59.3   67.61   75.81             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  395.05  356.75       F
   445.1  623.32  356.75       F

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2759

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  372.77    2.31  372.75    3.21  372.76    3.79   372.7    5.35  372.51
   10.05     372   17.86  370.67   21.54     370   22.94  369.68   29.73     368
   38.04     366   41.31  365.14   46.41     364   49.98  363.37   58.32     362
   62.31  361.29   70.12     360   83.48  358.75   88.76  358.48    93.5  358.22
   94.45  358.15   97.16     358  128.47  356.25  137.97     356  166.97  354.77
  188.46  354.27  206.85  354.18  213.44  353.14  217.92  353.75  217.94  353.75
  221.54  354.24  229.72  353.68  232.16  349.32  242.11  350.03  244.47  353.83
  247.97  353.92  254.64   354.1  273.96   354.9   288.2  354.55   327.4     356
  337.32  356.54  361.29  357.92   361.9     358  364.26  358.17  365.41  358.24
     367  358.37  372.78  358.74  375.31  358.81  388.46  358.79  394.15   358.8
  397.84  358.95  400.41  358.96  402.23  359.06  404.53  359.21  405.49  359.23
  408.57  359.48  408.95  359.49  411.45   359.7  411.87  359.72  415.03  359.99
  415.31     360  417.03   360.2  418.39   360.3   428.8  360.31  433.64   360.4
  438.69  360.56  442.82  360.73  450.11  361.09  466.87     362  474.25  362.98
  481.02     364  491.61     366   492.4  366.16  501.24     368

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  229.72     .04  244.47    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        229.72  244.47           166.79  169.71   170.1             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 2589

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   370.5    6.39     370    8.12  369.55    9.88  369.06   13.59     368
   15.68  366.43   16.18     366    16.5  365.69   18.44     364   19.42     363
   20.51     362   21.74  361.02   22.67     360   27.21  358.55   28.42  358.17
   28.89     358    48.8     356   56.94  355.65   62.31  355.06    97.9  354.08
  104.04  353.91  106.64  349.71  112.07   349.9  114.29     352  118.86  352.08
  128.02  352.48  129.83  352.56   142.4  352.11  158.46  352.06  163.77  353.31
  176.98  353.81  195.26  354.09  212.76  355.32  219.91  355.94  220.06  355.97
  220.33     356  220.34     356  220.77  356.04  224.36   356.3   227.8  356.43
  228.59  356.43  235.01  356.02  235.26     356  235.49     356  244.56  356.04
   247.2  356.04  248.45  356.03  254.75  356.02   257.6  356.01   259.1     356
  259.88  356.04  262.22  356.13  262.67  356.15  272.42  356.42  274.41   356.5
  275.87  356.57  277.84  356.65  283.08   356.9  287.67   357.1  289.83   357.2
     291  357.25  295.04  357.45  305.68     358  327.61  359.52  335.25     360
  342.18  360.46  349.91  360.96  357.47  361.46  361.02  361.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  104.04     .04  114.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        104.04  114.29           102.11  104.17  106.57             .1       .3

CROSS SECTION


RIVER: Plumtree
```

REACH: Plumtree RS: 2485

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	368.38	4.47	368.19	8.54	368.03	9.3	368	11.37	367.71
12.69	367.6	12.97	367.59	21.49	367.83	21.72	367.79	24.75	367.98
24.78	367.97	25.94	368.02	27.18	368.02	28.49	367.97	29.82	367.87
30.25	367.77	31.68	367.58	33.56	367.26	35	366.85	38.23	366
38.64	365.88	39.08	365.73	41.93	364.86	44.58	364	51.26	362.13
51.81	362	52.07	361.95	53.08	361.71	59.58	360.24	60.5	360
66.26	358.56	68.19	358	79.86	356.07	80.2	356	108.17	354.1
116.73	353.3	136.32	353.03	148.67	352.95	152.4	351.89	153.8	351.49
156.31	351.59	159.04	352.43	164.74	351.94	168.76	349.2	174.15	349.34
176.14	352.31	183.78	352.86	185.84	353.01	202.53	353.09	228.12	353.77
242.58	354	243.08	354.08	268.03	355.47	271.1	355.65	276.88	356
279.61	356.42	290.09	358	293.7	358.35	295.16	358.52	296.99	358.71
299.04	359.06	299.15	359.06	301.56	358.95	310.74	358.55	311.53	358.57
326.08	360	343.08	362	362.94	363.92	363.84	364	373.86	364.98
379.95	365.59								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	164.74	.04	176.14	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
164.74	176.14	153.6	154.59	153.42	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2331

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.49	6.68	364.41	7.02	364.4	14.19	364.07	14.82	364.03
15.07	364	20.81	363.68	24.25	363.45	29.07	363.13	39.92	362.46
45.16	362.09	46.53	362	47.28	361.49	49.54	360	52.15	358.3
52.62	358	55.48	356.39	56.22	356	57.41	355.85	63.81	354.98
71.45	353.58	95.41	352.52	117.31	352.1	137.93	352.42	139.13	352.39
143.89	352.26	149.2	348.51	154.15	348.1	159.57	348.42	163.74	351.17
170.01	352.12	172.55	352.5	187.7	353.21	192.26	353.51	195.07	354
218.88	355.98	218.91	355.98	219.4	355.99	219.65	356	241.82	357.49
246.88	357.84	249.17	358	261.51	359.33	265.1	359.63	265.64	359.68
269.31	360	281.07	361.43	286.16	362	288.44	362.36	288.85	362.43
290.52	362.72	297.61	364	300.67	364.91	304.17	366	307.87	366.43
309	366.5	310.22	366.57	314.29	366.95	316.04	367.1	316.75	367.15
319.13	367.28								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	143.89	.04	163.74	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
143.89	163.74	179.37	177.6	175.87	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 2153

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	364.32	3.92	364.56	4.01	364.56	8.3	364.3	12.46	364.04
12.76	364.02	13.08	364	13.25	363.87	13.45	363.73	16.05	362
16.68	361.53	18.91	360	20.77	358.61	21.6	358	21.89	357.75
24.09	356	30.84	354.47	33.11	354	52.92	352.32	74.07	351.81
101.65	351.28	120.22	351.43	120.23	351.43	120.5	351.43	127.63	349.88
130.12	350.05	131.34	346.86	142	346.39	144.29	352.45	150.56	352.61
153.23	352.68	168.08	353.97	172.88	354.8	182.71	356	183.66	356.09
183.87	356.11	184.85	356.22	185.07	356.24	187.04	356.46	193.55	357.16
200.75	358	212.41	359.89	213.06	360	217.64	360.89	223.61	362

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  228.58  363.12  232.74     364  234.97  364.51  241.92     366  244.79  366.58
  251.21     368   256.5  369.43   258.4     370   259.7  370.42  264.45     372
  269.94  372.39  273.44  372.63

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  130.12     .04  144.29    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.12  144.29           160.15  158.75  157.04             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1994

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.16    1.03  359.27    6.73  358.67   10.37  358.29   12.97     358
   17.14  356.63      19     356   24.53  354.42   26.07     354   48.12   352.4
   57.17  351.28   75.62  351.28   92.39  351.14  101.12   350.8  106.95  350.57
  106.96  350.57  116.46  350.19   118.2  346.45  127.95  346.81  131.85  351.13
  136.96  351.29  150.75  351.72  165.28  352.31  177.37  352.98  196.01     354
  199.93  354.72  201.85  354.82  202.83  354.87  204.78  354.98  212.96  355.47
  214.68   355.8  216.21  355.53  218.47   355.7  222.42     356  236.41  357.33
  243.08     358  253.87   359.4  258.55     360  260.61  360.31  272.91     362
  275.22  362.56  277.16  363.07  277.31  363.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  116.46     .04  131.85    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        116.46  131.85           108.1  106.05  103.75             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1888

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354    68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        129.91  142.97           61.13   58.24    54.2             .3       .5

BRIDGE


RIVER: Plumtree
REACH: Plumtree           RS: 1850

INPUT
Description: Private Bridge
Distance from Upstream XS =    18.5
Deck/Roadway Width        =      16
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       8
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
```

```
    3.66  359.97            81.5  359.87  357.87   101.7 360.452 358.452
   126.6 360.865 358.865     153 360.835 358.835   175.1 360.491 358.491
     201 360.491 358.491  320.31   359.1

Upstream Bridge Cross Section Data
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.32    3.66  359.97    3.97  359.97    9.29  359.12    9.61   359.1
   10.06  359.05    11.3   358.9   12.39  358.76   16.42     358   26.85  356.12
    27.4     356   44.51  354.47   49.85     354    68.2  352.46   81.53  351.35
  104.16  350.46  120.73  349.86   122.9  349.65  122.92  349.65  129.91     349
  132.99  345.73  137.07  345.92  142.97   349.5  150.38  349.68  153.97  350.05
  163.02  350.99  180.43  351.29  195.81  351.74   212.9  353.83  217.47  354.81
  227.64  355.42  283.48     356  287.69  356.35  288.71  356.43  290.19  356.54
  297.25  357.04  307.21  357.78  310.66     358  311.09  358.05  315.51  358.54
   318.4  358.88  320.31   359.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  129.91     .04  142.97    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
        129.91  142.97             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0  359.24            91.4 359.823 357.823   114.8 360.523 358.523
   139.8  360.92  358.92     165 360.892 358.892   189.6 360.465 358.465
   211.7 359.771 357.771

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  359.24    2.43  358.98    4.52  358.77    8.77  358.35   11.48  358.04
   11.83     358   17.63  357.39   27.59  356.34   30.83     356    31.3  355.95
   50.96     354   66.68  349.58   82.55  349.15    94.6  350.53  103.53  350.29
  110.77  348.95  112.07  348.71  119.64  348.74   131.1  348.28  134.38  346.61
  143.36  346.68  149.09  351.02  155.33  350.92  161.76  350.82  177.15  351.12
  196.32  351.55  209.07  352.05  209.56  359.76  230.29  360.75  314.46  356.32
     319  356.67  323.81  357.07  332.17  357.73  334.02  357.88  335.57     358
  340.94  358.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   131.1     .04  149.09    .075

Bank Sta: Left   Right    Coeff Contr.   Expan.
         131.1  149.09             .3       .5

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #1-YR
```

E.G. US. (ft)	350.55	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	350.31	E.G. Elev (ft)	350.48	350.37
Q Total (cfs)	188.00	W.S. Elev (ft)	350.22	350.26
Q Bridge (cfs)	188.00	Crit W.S. (ft)	348.80	348.87
Q Weir (cfs)		Max Chl Dpth (ft)	4.49	3.65
Weir Sta Lft (ft)		Vel Total (ft/s)	3.33	2.13
Weir Sta Rgt (ft)		Flow Area (sq ft)	56.52	88.23
Weir Submerg		Froude # Chl	0.42	0.25
Weir Max Depth (ft)		Specif Force (cu ft)	103.75	126.74
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.26	1.93
Min El Prs (ft)	358.87	W.P. Total (ft)	47.18	47.60
Delta EG (ft)	0.23	Conv. Total (cfs)	3155.1	4538.7
Delta WS (ft)	0.08	Top Width (ft)	44.69	45.68
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.33	C & E Loss (ft)	0.08	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.27	0.20
BR Sel Method	Energy only	Power Total (lb/ft s)	0.88	0.42

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #2-YR

E.G. US. (ft)	350.78	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	350.55	E.G. Elev (ft)	350.72	350.62
Q Total (cfs)	208.00	W.S. Elev (ft)	350.47	350.50
Q Bridge (cfs)	208.00	Crit W.S. (ft)	348.97	348.99
Q Weir (cfs)		Max Chl Dpth (ft)	4.74	3.89
Weir Sta Lft (ft)		Vel Total (ft/s)	3.02	2.07
Weir Sta Rgt (ft)		Flow Area (sq ft)	68.99	100.67
Weir Submerg		Froude # Chl	0.40	0.24
Weir Max Depth (ft)		Specif Force (cu ft)	121.05	151.67
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.28	1.79
Min El Prs (ft)	358.87	W.P. Total (ft)	56.58	58.50
Delta EG (ft)	0.21	Conv. Total (cfs)	3715.4	5136.7
Delta WS (ft)	0.07	Top Width (ft)	54.07	56.21
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	3.02	C & E Loss (ft)	0.07	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.24	0.18
BR Sel Method	Energy only	Power Total (lb/ft s)	0.72	0.36

BRIDGE OUTPUT Profile #10-YR

E.G. US. (ft)	352.52	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	352.22	E.G. Elev (ft)	352.45	352.34
Q Total (cfs)	613.00	W.S. Elev (ft)	352.11	352.14
Q Bridge (cfs)	613.00	Crit W.S. (ft)	351.45	350.29
Q Weir (cfs)		Max Chl Dpth (ft)	6.38	5.53
Weir Sta Lft (ft)		Vel Total (ft/s)	2.80	2.47
Weir Sta Rgt (ft)		Flow Area (sq ft)	218.79	248.42
Weir Submerg		Froude # Chl	0.32	0.27
Weir Max Depth (ft)		Specif Force (cu ft)	394.93	467.31
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	1.86	2.10
Min El Prs (ft)	358.87	W.P. Total (ft)	121.05	122.37
Delta EG (ft)	0.26	Conv. Total (cfs)	10413.9	13284.4
Delta WS (ft)	0.08	Top Width (ft)	117.69	118.06
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.04	0.04
BR Open Vel (ft/s)	2.80	C & E Loss (ft)	0.07	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	0.39	0.27
BR Sel Method	Energy only	Power Total (lb/ft s)	1.10	0.67

BRIDGE OUTPUT Profile #50-YR

E.G. US. (ft)	353.89	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	353.56	E.G. Elev (ft)	353.82	353.73
Q Total (cfs)	1243.00	W.S. Elev (ft)	353.44	353.43
Q Bridge (cfs)	1243.00	Crit W.S. (ft)	352.48	351.87
Q Weir (cfs)		Max Chl Dpth (ft)	7.71	6.82
Weir Sta Lft (ft)		Vel Total (ft/s)	3.29	3.10
Weir Sta Rgt (ft)		Flow Area (sq ft)	378.07	400.97
Weir Submerg		Froude # Chl	0.31	0.30
Weir Max Depth (ft)		Specif Force (cu ft)	880.49	978.36
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.15	3.40
Min El Prs (ft)	358.87	W.P. Total (ft)	126.08	124.96
Delta EG (ft)	0.28	Conv. Total (cfs)	20822.2	24268.4

Delta WS (ft)	0.11	Top Width (ft)	120.20	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	3.29	C & E Loss (ft)	0.04	0.07
BR Sluice Coef		Shear Total (lb/sq ft)	0.67	0.53
BR Sel Method	Energy only	Power Total (lb/ft s)	2.19	1.63

BRIDGE OUTPUT Profile #100-YR

E.G. US. (ft)	354.47	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.11	E.G. Elev (ft)	354.38	354.30
Q Total (cfs)	1581.00	W.S. Elev (ft)	353.96	353.94
Q Bridge (cfs)	1581.00	Crit W.S. (ft)	352.83	352.34
Q Weir (cfs)		Max Chl Dpth (ft)	8.23	7.33
Weir Sta Lft (ft)		Vel Total (ft/s)	3.59	3.43
Weir Sta Rgt (ft)		Flow Area (sq ft)	440.61	461.21
Weir Submerg		Froude # Chl	0.32	0.31
Weir Max Depth (ft)		Specif Force (cu ft)	1151.90	1257.70
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	3.67	3.91
Min El Prs (ft)	358.87	W.P. Total (ft)	127.12	125.98
Delta EG (ft)	0.30	Conv. Total (cfs)	25806.7	29449.0
Delta WS (ft)	0.15	Top Width (ft)	120.12	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.05
BR Open Vel (ft/s)	3.59	C & E Loss (ft)	0.03	0.08
BR Sluice Coef		Shear Total (lb/sq ft)	0.81	0.66
BR Sel Method	Energy only	Power Total (lb/ft s)	2.91	2.26

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	354.99	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	354.64	E.G. Elev (ft)	354.90	354.82
Q Total (cfs)	1910.00	W.S. Elev (ft)	354.45	354.42
Q Bridge (cfs)	1910.00	Crit W.S. (ft)	353.13	352.68
Q Weir (cfs)		Max Chl Dpth (ft)	8.72	7.81
Weir Sta Lft (ft)		Vel Total (ft/s)	3.83	3.69
Weir Sta Rgt (ft)		Flow Area (sq ft)	499.21	517.83
Weir Submerg		Froude # Chl	0.32	0.32
Weir Max Depth (ft)		Specif Force (cu ft)	1440.04	1552.96
Min El Weir Flow (ft)	359.11	Hydr Depth (ft)	4.16	4.39
Min El Prs (ft)	358.87	W.P. Total (ft)	128.10	126.95
Delta EG (ft)	0.32	Conv. Total (cfs)	30877.8	34703.4
Delta WS (ft)	0.19	Top Width (ft)	120.05	118.05
BR Open Area (sq ft)	994.03	Frctn Loss (ft)	0.05	0.06
BR Open Vel (ft/s)	3.83	C & E Loss (ft)	0.02	0.09
BR Sluice Coef		Shear Total (lb/sq ft)	0.93	0.77
BR Sel Method	Energy only	Power Total (lb/ft s)	3.56	2.85

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1830

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.24	2.43	358.98	4.52	358.77	8.77	358.35	11.48	358.04
11.83	358	17.63	357.39	27.59	356.34	30.83	356	31.3	355.95
50.96	354	66.68	349.58	82.55	349.15	94.6	350.53	103.53	350.29
110.77	348.95	112.07	348.71	119.64	348.74	131.1	348.28	134.38	346.61
143.36	346.68	149.09	351.02	155.33	350.92	161.76	350.82	177.15	351.12
196.32	351.55	209.07	352.05	209.56	359.76	230.29	360.75	314.46	356.32
319	356.67	323.81	357.07	332.17	357.73	334.02	357.88	335.57	358
340.94	358.54								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	131.1	.04	149.09	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.1	149.09	183.1	189.46	194.94	.3	.5

CROSS SECTION

RIVER: Plumtree

REACH: Plumtree RS: 1641

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.1	4.25	358	4.42	357.95	4.44	357.94	5.13	357.91
5.87	357.89	19.69	357.39	35.1	356.79	40.55	356.56	48.51	356.22
50.1	356.16	53.65	356	83.2	353.06	108.43	350.69	126.88	349.28
127.65	348.68	128.6	347.92	138.1	348.36	140.07	345.19	146.51	345.53
151.14	349.6	158.59	349.89	158.6	349.89	162.23	350.02	178.14	350
203.35	350.65	232.7	352	242.28	353.59	244.74	354	245.26	354.15
247.65	354.81	250.51	355.6	252.04	356	253.98	356.59	258.69	358
258.77	358.02	262.44	359.03	266	360	266.2	360.05	268.14	360.44
269.28	360.66	271.48	361.07	272.68	361.28	273.3	361.39		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	138.1	.04	151.14	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.1	151.14	176.17	177.29	178.52	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1463

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	356.46	5.61	356.33	11.71	356.19	16.33	356.06	18.18	356.02
18.32	356.02	18.54	356	21.8	355.67	22.14	355.65	22.36	355.64
22.69	355.6	22.89	355.58	27.15	355.19	29.24	355.09	30.76	355.02
40.4	354.87	40.86	354.85	41.76	354.8	42.75	354.73	52.82	354
69.61	352.87	75.51	352.42	79.43	352.14	79.72	352.12	81.65	352
84.43	351.86	90.72	351.56	92.09	351.48	94.79	351.34	97.19	351.19
107.32	350.52	111.7	350.26	115.41	350	138.29	349.1	159.11	349.1
178.46	349.47	180.13	349.17	185.3	348.24	187.99	347.08	189.19	343.45
196.87	343.35	197.98	346.06	206.54	348.53	210.52	348.75	210.53	348.75
221.24	349.34	234.53	349.78	266.44	352.56	278.62	358	283.38	359.43
285.38	360	287	360.55	290.28	361.58	291.64	362	294.58	362.89
295.91	363.28	296.57	363.47	298.25	364	302.9	365.77	303.51	366
309.02	367.06	310.22	367.29	310.97	367.42	314.74	368	315.87	368.18
323.73	369.62								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	180.13	.04	206.54	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
180.13	206.54	172.51	172.28	171.74	.1	.3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 1291

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	363.49	2.9	363.09	10.68	362.14	11.86	362	19.26	360.55
22.08	360	26.38	358.97	30.59	358	34.4	357.21	38.91	356
43.26	354.82	46.23	354.17	47.03	354	49.14	353.62	58.14	352
66.85	350.97	70.1	350.58	71.43	350.42	75.07	350	108.53	348.38
120.68	348.74	128.48	348.81	133.87	347.09	136.5	346.81	137.71	345.2
141.95	344.89	151.53	345.15	155.49	348.28	157.84	348.3	161.16	349.47
178.09	349.55	199.34	350.93	214.63	351.7	228.4	351.81	242.53	351.32
264.66	350.52	286.44	349.15	310.41	348.72	338.21	349	371.72	348.77
400.9	348.48	416.8	348.59	427.74	348.67	430.58	344.68	431.8	344.26
436.65	344.85	441.26	344.51	442.29	347.58	447.46	349.08	448.01	349.24
458.85	350.67	471.3	352.75	481.29	354.33	491.23	357.26		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .075  427.74     .04  447.46    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        427.74  447.46            167.7  167.44  166.86             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 1124

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  365.04    4.51  364.72    9.16  364.27    9.25  364.27   12.12     364
    15.5  363.29   21.22     362   23.39  361.54   30.93     360   35.95  358.97
   39.85  358.17   50.58     356   54.08   355.4   62.03     354   62.65  353.83
   63.34  353.65   73.01   352.9   74.16  352.78   80.64     352   83.69  351.62
   99.16     350   114.6  348.69  124.02  348.63   131.1  347.62  149.71  348.01
  162.72  347.51  168.53  347.49  170.35  344.49  173.71  344.74  179.87  343.88
  182.52  344.16  184.05  346.89  186.24     347  189.68  348.23  195.55  348.19
     207   347.6  214.71  347.82  233.96  347.66  252.64   348.2  276.32   348.2
  304.29  347.84  332.45  347.91  346.81  348.51  347.97   348.3     348   348.3
  350.12  347.92  353.36   347.9  355.26  348.34   360.2  343.58   367.1  344.05
  375.37  349.26  378.03   349.7  378.05   349.7  380.33  350.08  392.73  351.02
  398.58  351.56  403.03  351.81  420.09     354  435.53     356  439.63  356.61
  442.77  357.02  450.32     358  455.33  358.77   457.5  359.06  460.77  359.47
  461.87  359.63  462.18  359.68   465.1     360  473.65  361.11  476.71  361.53
  479.97     362  480.72  362.12  480.94  362.16  483.56  362.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  355.26     .04  375.37    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        355.26  375.37           134.05  129.91   125.5             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     8.7    60.7     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 994

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   359.1    9.62     358   14.71  356.95    19.8     356   30.42  354.45
   33.38     354   36.49   353.7    54.6     352   57.99  351.76   59.66  351.64
   70.88  350.84   72.94   350.7   82.85     350  114.72  348.11  135.81   347.8
  150.43  347.49  170.48  346.43  171.74  343.41  176.87  342.99  186.86  344.33
  188.91  347.54  212.62   347.3  226.74     347  231.31  347.32  247.53  347.69
  256.13   347.8  270.71  347.72  281.14  348.11   284.5   347.5  286.04  347.21
  292.04  347.03  296.33  343.73  302.06  343.28  306.33  342.85  309.85  346.99
  314.78  348.42  315.81  348.64  315.83  348.64  320.17  349.59  333.26  350.57
     351  352.36  364.37     354     373   355.3  375.39  355.67  377.77     356
  383.23  356.87  390.35     358  393.92  358.56   397.2  359.05  403.45     360
  407.85  360.84  413.86     362  417.04  362.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  281.14     .04  315.83    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        281.14  315.83            82.93   82.66    81.8             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 911

INPUT
Description:
Station Elevation Data    num=      61
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359	2.24	358.56	3.51	358.32	5.22	358	12.31	356.66
15.03	356.09	15.46	356	22.75	354.09	23.08	354	23.55	353.96
24.83	353.84	24.92	353.83	25.43	353.83	29.76	353.58	30	353.57
30.58	353.5	31.25	353.48	33.98	353.69	35.3	353.7	36.97	353.98
37.02	353.98	37.13	354	37.9	354.04	38.06	354.05	38.27	354.04
38.32	354.04	38.42	354.03	38.82	354	38.99	353.95	39.2	353.82
44.56	353.53	50.12	353.05	56.89	352.42	59.95	352.14	61.41	352
82.47	350.57	91.08	350	100.51	349.7	117.56	348.31	130.96	347.87
157.71	347.03	178.22	347.23	181.99	344.27	189.47	343.55	196.66	344.12
201.78	347.5	223.44	347.06	243.05	346.93	252.46	346.76	252.6	346.85
292.54	347.06	306.34	347.38	312.43	347.51	317.18	343.33	321.46	342.92
325.5	343.21	332.27	348.29	337.05	349	337.06	349	351.26	351.11
381.21	355.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	312.43	.04	332.27	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
312.43	332.27	138.48	148.66	157.22	.1 .3

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 762

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.13	2.35	357.03	6.48	356.67	7.69	356.61	9.39	356.51
14.41	356	19.83	355.44	21	355.32	22.74	355.12	32.28	354
34.37	353.8	35.36	353.71	51.57	352.14	52.81	352.02	53.01	352
61.67	351.41	65.26	351.17	67.97	350.99	73.71	350.62	76.99	350.42
81.35	350.17	81.78	350.14	84.01	350.03	84.52	350	108.7	348.46
145.52	346.99	169.46	347.05	186.24	347.42	197.19	345.22	199.28	343.68
205.18	343.3	208.29	343.86	210.89	346.07	228.95	347.18	235.77	347.3
240.55	347.28	244.65	347.26	244.66	347.26	252.8	347.23	257.6	343.09
259.66	342.54	263.98	342.94	271.9	344.77	276.21	346.65	276.24	346.66
276.97	346.98	298.22	347.67	328.56	347.99	360.33	351.01	370.76	351.97
371.89	352	373.6	352.14	375.07	352.27	376.35	352.4	384.34	353.82
384.65	353.87	384.83	353.9	384.94	353.92	385.3	354	392	355.62
393.35	356	395.32	356.4	403.54	358	408.28	358.51	410.83	358.82
411.55	358.82	412.84	358.8	416.14	358.49				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	252.8	.04	276.97	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
252.8	276.97	101.69	104.14	104.96	.1 .3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
366.8	407.4	360

CROSS SECTION

RIVER: Plumtree
REACH: Plumtree RS: 658

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.95	2.26	358.79	5.3	358.55	9.28	358.2	11.48	358
14.26	357.65	16.66	357.36	20.41	356.87	26.22	356.16	35.44	355.02
41.74	354.15	42.79	354	59.31	352.1	59.6	352.07	59.76	352.05
60.3	352	70.49	351.39	76.4	351.02	86.06	350.44	92.55	350
118.81	348	200.75	346.51	222.09	346.42	240.58	346.42	240.59	346.42
245.1	346.43	248.95	343.16	255.63	340.34	262.8	340.2	267.31	342.59
270.68	343.91	277.89	346.74	301.79	346.57	332.03	346.36	388.47	347.88
391.63	347.92	394.29	347.92	394.49	347.91	400.05	348	401.61	348.21
402.93	348.4	404.42	348.65	405.7	348.87	406.58	349.04	407.19	349.17
412.03	350	415.92	350.98	417.72	351.13	418.47	351.21	420.03	351.39
422.64	351.75	422.86	351.79	424.26	352	426.31	352.71	429.22	353.83
429.43	353.91	429.85	354.09	434.45	356	442.51	357.75	442.83	357.83

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  443.54     358  450.24  358.39  464.98  359.29  465.18  359.32  466.53  359.48
  470.64     360  471.72  360.06  477.88   360.4  481.52  360.61  490.37  361.08

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075   245.1     .04  277.89    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         245.1  277.89           129.48  132.55  137.52             .1       .3

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 526

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  357.29    9.33  356.07    9.88     356   15.36  355.41   18.93  355.03
      21  354.81   28.17     354   30.46  353.79    34.1  353.48   42.62  352.81
   46.05  352.53    47.8   352.4   49.22  352.29   53.02     352   59.04  351.42
   61.87  351.16   67.63  350.62   73.95     350   93.12  348.67  121.73  346.39
  157.75  346.18  186.76  345.79  188.34  345.18  188.36  345.17  195.28  342.48
  203.56  341.63  212.23  342.05  213.87   346.6  218.56  346.44  218.57  346.44
  237.47   345.8  275.28  345.64  307.64  346.39  309.73  346.39   311.5  346.41
  313.11  346.41  314.75   346.4  329.39  346.38  337.83  346.31  340.98  346.28
  350.53  346.19  372.03     346  378.64  346.57  382.54   346.9  390.22  347.56
  395.28     348  402.02  349.12  407.12     350  408.46  350.19  409.19  350.29
  409.96  350.41  415.16  351.21  417.91  351.63  420.21     352  425.22  352.92
  430.26     354  432.81  354.65  434.33     355  437.88  355.74  438.42  355.87
  439.17     356  441.01  356.24   446.9  356.96  448.95  357.26  452.86  357.84
  453.18  357.89  453.89     358  458.07  358.55  459.62  358.79  462.41  359.19
  467.23     360  483.54  360.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  186.76     .04  213.87    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        186.76  213.87           143.66  145.78  147.57             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     443   476.3     360

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 380

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  366.67     .48  366.64   10.41     366   17.37  364.74   21.25     364
   25.91  363.14    31.6     362   37.28  360.91   41.95     360   46.91  359.56
   63.27     358   71.54  357.11   76.74  356.56   81.96     356   84.51  355.63
   95.36     354  101.45  352.61  104.07     352  106.08  351.38   110.9     350
  116.69  348.33  117.74     348  119.59   347.7   121.4  347.41  126.04  346.65
     130     346  133.26   346.1  135.45  346.16  138.15  346.24  146.78  346.47
  149.42  346.45  150.34  346.44   151.1  346.43  151.57  346.42  155.44  346.29
  164.04  345.66  193.28  345.53  212.79  346.39  212.81  346.39  215.37  346.51
  219.06  341.92   227.8  342.05  238.17  343.21  243.49   346.6   243.7   346.6
  243.72  346.59  260.79  346.48  291.92  346.27  304.59     346  319.84  347.43
  322.97  347.65  328.49     348  330.64  348.16  332.41  348.38   334.7  348.61
  337.77  348.94  346.14     350   350.1  350.95   354.1     352  360.75  353.66
  362.11     354  365.83  354.84  369.98  355.77  370.39  355.85  371.06     356
  372.08  356.17  382.09     358  386.28  358.59  390.61  359.14

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  215.37     .04   243.7    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        215.37   243.7            235.8  234.15  232.25             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
```

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      10    44.6     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 146

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     359    6.37  358.83   15.88  358.07   16.47  358.02   16.84     358
   21.14  357.01   25.77     356   28.06   355.5   30.16  355.06   34.73  354.18
    35.2  354.08   35.66     354   37.68  353.72    38.1  353.66    41.6  353.18
   44.05  352.85   45.88  352.61   50.58  352.01   50.71     352    52.8  351.88
   60.34   351.5   61.05  351.44    66.3  351.17    67.3  351.09   70.18  350.94
   72.76  350.72   76.24  350.54   81.27     350  100.43  348.85  105.06  348.54
  115.51     348  138.29   346.9  181.73  345.23  210.07  344.41  210.09  344.41
  215.13  344.26  220.35  341.19  225.41  340.73  231.22  340.96  236.01  344.28
  240.33  344.79  253.16  346.33  258.95  349.49  260.11  349.59  263.96  350.56
  267.35     352   269.7  353.13  271.51     354  273.55  355.07  275.21     356
  277.09  356.89  279.29     358  283.62  359.32   285.5  359.78  286.47     360
  291.06   360.4  294.96  360.73  299.25  361.08  301.38  361.31  304.13  361.54
  306.53  361.84  306.74  361.86  307.86     362  314.98  363.37   318.1     364
  325.64  365.64  327.27     366  335.18  367.64  336.93     368  339.58  368.18
  343.85  368.49  346.34  368.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  215.13     .04  236.01    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        215.13  236.01             88.09   82.88   77.62             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    15.2    56.5     365   296.2     338     370

CROSS SECTION


RIVER: Plumtree
REACH: Plumtree           RS: 63

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     354    7.34  353.26   12.41  352.73   16.79  352.29    19.4     352
    27.1  350.79   31.84     350   38.59  349.24   50.74     348   57.78  347.37
   58.67  347.29   60.21  347.18   62.82  346.94   66.66  346.68   68.29  346.54
   76.91     346   79.38  345.88   79.63  345.86      80  345.83   80.68  345.78
   83.85  345.58   87.55  345.35  103.02     344  108.36  342.62  114.01     342
  118.01     340  138.02     340  142.02     342   147.2  343.25  150.03     344
  151.66  344.32  153.16  344.61  153.93  344.74   155.1  344.92  156.66   345.2
  158.34  345.42  159.11  345.56  160.97  345.74  161.25  345.79   163.2  345.94
  163.62     346  170.72     346  174.59  346.47  175.77  346.56  176.48  346.66
  177.66  346.84  178.56  346.94  180.57  347.23  181.89   347.4   182.5  347.49
  185.96     348  187.92  348.58  193.03     350   195.4  350.82  198.31     352
  201.23  353.21  203.77     354   207.9  355.67  208.87     356  212.01  357.21
  214.25     358  216.21  358.46  223.24     360  225.85  360.29   227.5  360.52
  231.62  361.04  238.04     362  248.29  363.79  249.46     364  253.46   364.5
  253.68  364.53

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  103.02     .04  150.03    .075

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        103.02  150.03                0       0       0             .1       .3



SUMMARY OF MANNING'S N VALUES

River:Plumtree

      Reach          River Sta.       n1        n2        n3
```

Plumtree	10286	.085	.04	.085
Plumtree	10044	.085	.04	.085
Plumtree	9814	.085	.04	.085
Plumtree	9762	.085	.04	.085
Plumtree	9732	.075	.04	.075
Plumtree	9650	Culvert		
Plumtree	9589	.075	.04	.075
Plumtree	9499	.075	.04	.075
Plumtree	9398	.085	.04	.085
Plumtree	9301	.085	.04	.085
Plumtree	9196	.085	.04	.085
Plumtree	8987	.085	.04	.085
Plumtree	8753	.065	.04	.085
Plumtree	8579	.075	.04	.085
Plumtree	8374	.075	.04	.085
Plumtree	8229	.075	.04	.085
Plumtree	8094	.075	.04	.085
Plumtree	7954	.075	.04	.085
Plumtree	7800	.075	.04	.085
Plumtree	7548	.075	.04	.085
Plumtree	7367	.075	.04	.075
Plumtree	7216	.075	.04	.075
Plumtree	7030	.075	.04	.075
Plumtree	6893	.075	.04	.075
Plumtree	6766	.075	.04	.075
Plumtree	6663	.075	.04	.075
Plumtree	6568	.075	.04	.075
Plumtree	6454	.075	.04	.075
Plumtree	6350	.075	.04	.075
Plumtree	6296	.075	.04	.075
Plumtree	6250	Culvert		
Plumtree	6197	.075	.04	.075
Plumtree	6122	.075	.04	.075
Plumtree	6028	.075	.04	.075
Plumtree	5926	.075	.04	.075
Plumtree	5824	.075	.04	.075
Plumtree	5745	.075	.04	.075
Plumtree	5711	.075	.04	.075
Plumtree	5650	Culvert		
Plumtree	5614	.075	.04	.075
Plumtree	5560	.075	.04	.075
Plumtree	5510	.075	.04	.075
Plumtree	5500	Bridge		
Plumtree	5474	.075	.04	.075
Plumtree	5419	.075	.04	.075
Plumtree	5323	.075	.04	.075
Plumtree	5209	.075	.04	.075
Plumtree	5107	.075	.04	.075
Plumtree	5040	.075	.04	.075
Plumtree	5000	Culvert		
Plumtree	4932	.075	.04	.075
Plumtree	4845	.075	.04	.075
Plumtree	4745	.075	.04	.075
Plumtree	4636	.075	.04	.075
Plumtree	4550	.075	.04	.075
Plumtree	4400	Culvert		
Plumtree	4344	.075	.04	.075
Plumtree	4289	.075	.04	.075
Plumtree	4185	.075	.04	.075
Plumtree	4033	.075	.04	.075
Plumtree	3930	.075	.04	.075
Plumtree	3816	.075	.04	.075
Plumtree	3688	.075	.04	.075
Plumtree	3550	.075	.04	.075
Plumtree	3428	.075	.04	.075
Plumtree	3296	.075	.04	.075
Plumtree	3179	.075	.04	.075
Plumtree	3077	.075	.04	.075
Plumtree	2978	.075	.04	.075
Plumtree	2917	.075	.04	.075
Plumtree	2900	Culvert		
Plumtree	2827	.075	.04	.075
Plumtree	2759	.075	.04	.075
Plumtree	2589	.075	.04	.075
Plumtree	2485	.075	.04	.075
Plumtree	2331	.075	.04	.075
Plumtree	2153	.075	.04	.075
Plumtree	1994	.075	.04	.075
Plumtree	1888	.075	.04	.075

Plumtree	1850	Bridge		
Plumtree	1830	.075	.04	.075
Plumtree	1641	.075	.04	.075
Plumtree	1463	.075	.04	.075
Plumtree	1291	.075	.04	.075
Plumtree	1124	.075	.04	.075
Plumtree	994	.075	.04	.075
Plumtree	911	.075	.04	.075
Plumtree	762	.075	.04	.075
Plumtree	658	.075	.04	.075
Plumtree	526	.075	.04	.075
Plumtree	380	.075	.04	.075
Plumtree	146	.075	.04	.075
Plumtree	63	.075	.04	.075

SUMMARY OF REACH LENGTHS

River: Plumtree

Reach	River Sta.	Left	Channel	Right
Plumtree	10286	240.46	241.25	237.2
Plumtree	10044	233.9	230.57	222.97
Plumtree	9814	52.19	51.52	50.85
Plumtree	9762	32.64	30.09	27.57
Plumtree	9732	145.71	143.47	141.55
Plumtree	9650	Culvert		
Plumtree	9589	74.95	89.37	103.36
Plumtree	9499	98.65	101.8	104.92
Plumtree	9398	97.24	96.47	94.54
Plumtree	9301	109.84	105	100.42
Plumtree	9196	197.07	208.89	195.59
Plumtree	8987	233.38	233.77	226.61
Plumtree	8753	178.41	174.76	168.62
Plumtree	8579	198.29	204.23	206.04
Plumtree	8374	144.9	145.45	146.03
Plumtree	8229	135.27	135.16	134.66
Plumtree	8094	138.21	139.81	140.01
Plumtree	7954	155.28	153.64	152.99
Plumtree	7800	252.37	252.82	252.55
Plumtree	7548	174.12	180.41	186.79
Plumtree	7367	143.37	150.84	157.8
Plumtree	7216	190.28	186.42	181.46
Plumtree	7030	140.13	137.19	133.92
Plumtree	6893	124.46	126.53	128.02
Plumtree	6766	103.31	103.53	104.46
Plumtree	6663	90.58	94.53	97.72
Plumtree	6568	112.95	114.27	115.74
Plumtree	6454	102.69	103.78	104.74
Plumtree	6350	52.33	53.78	55.24
Plumtree	6296	98.47	99.02	99.58
Plumtree	6250	Culvert		
Plumtree	6197	75.78	74.81	73.83
Plumtree	6122	98.18	94.21	91.92
Plumtree	6028	100.93	101.91	101.19
Plumtree	5926	102.11	102.54	102.93
Plumtree	5824	75.62	79.21	82.75
Plumtree	5745	34.07	34.02	34.04
Plumtree	5711	96.24	96.18	98.71
Plumtree	5650	Culvert		
Plumtree	5614	60.47	54.67	45.26
Plumtree	5560	56.62	49.74	41.3
Plumtree	5510	36.56	36.42	38.18
Plumtree	5500	Bridge		
Plumtree	5474	54.4	54.86	54.94
Plumtree	5419	93.04	95.36	97.65
Plumtree	5323	116.69	114.31	111.9
Plumtree	5209	111.42	101.59	91.47
Plumtree	5107	67.29	67.07	66.86
Plumtree	5040	104.82	108.2	107.53
Plumtree	5000	Culvert		
Plumtree	4932	86.54	87.15	87.5
Plumtree	4845	89.54	100.49	110.66
Plumtree	4745	111.08	108.67	106.25
Plumtree	4636	90.09	85.72	81.01
Plumtree	4550	205.67	206.54	206.28

Plumtree	4400	Culvert			
Plumtree	4344		54.24	54.2	54.21
Plumtree	4289		104.83	104.42	103.52
Plumtree	4185		151.73	151.97	152.24
Plumtree	4033		105.3	103.27	101.24
Plumtree	3930		112.01	113.72	114.59
Plumtree	3816		128.5	127.87	127.21
Plumtree	3688		137.67	137.99	138.3
Plumtree	3550		121.58	121.96	122.09
Plumtree	3428		131.85	132.32	132.95
Plumtree	3296		117.57	116.94	115.99
Plumtree	3179		101.1	102.24	103.14
Plumtree	3077		99.64	98.98	98.39
Plumtree	2978		61.85	60.74	60.21
Plumtree	2917		89.63	90.26	89.98
Plumtree	2900	Culvert			
Plumtree	2827		59.3	67.61	75.81
Plumtree	2759		166.79	169.71	170.1
Plumtree	2589		102.11	104.17	106.57
Plumtree	2485		153.6	154.59	153.42
Plumtree	2331		179.37	177.6	175.87
Plumtree	2153		160.15	158.75	157.04
Plumtree	1994		108.1	106.05	103.75
Plumtree	1888		61.13	58.24	54.2
Plumtree	1850	Bridge			
Plumtree	1830		183.1	189.46	194.94
Plumtree	1641		176.17	177.29	178.52
Plumtree	1463		172.51	172.28	171.74
Plumtree	1291		167.7	167.44	166.86
Plumtree	1124		134.05	129.91	125.5
Plumtree	994		82.93	82.66	81.8
Plumtree	911		138.48	148.66	157.22
Plumtree	762		101.69	104.14	104.96
Plumtree	658		129.48	132.55	137.52
Plumtree	526		143.66	145.78	147.57
Plumtree	380		235.8	234.15	232.25
Plumtree	146		88.09	82.88	77.62
Plumtree	63		0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Plumtree

Reach	River Sta.	Contr.	Expan.
Plumtree	10286	.1	.3
Plumtree	10044	.1	.3
Plumtree	9814	.1	.3
Plumtree	9762	.1	.3
Plumtree	9732	.3	.5
Plumtree	9650	Culvert	
Plumtree	9589	.3	.5
Plumtree	9499	.1	.3
Plumtree	9398	.1	.3
Plumtree	9301	.1	.3
Plumtree	9196	.1	.3
Plumtree	8987	.1	.3
Plumtree	8753	.1	.3
Plumtree	8579	.1	.3
Plumtree	8374	.1	.3
Plumtree	8229	.1	.3
Plumtree	8094	.1	.3
Plumtree	7954	.1	.3
Plumtree	7800	.1	.3
Plumtree	7548	.1	.3
Plumtree	7367	.1	.3
Plumtree	7216	.1	.3
Plumtree	7030	.1	.3
Plumtree	6893	.1	.3
Plumtree	6766	.1	.3
Plumtree	6663	.1	.3
Plumtree	6568	.1	.3
Plumtree	6454	.1	.3
Plumtree	6350	.1	.3
Plumtree	6296	.3	.5
Plumtree	6250	Culvert	

Plumtree	6197	.3	.5
Plumtree	6122	.1	.3
Plumtree	6028	.1	.3
Plumtree	5926	.1	.3
Plumtree	5824	.1	.3
Plumtree	5745	.1	.3
Plumtree	5711	.3	.5
Plumtree	5650	Culvert	
Plumtree	5614	.3	.5
Plumtree	5560	.1	.3
Plumtree	5510	.3	.5
Plumtree	5500	Bridge	
Plumtree	5474	.3	.5
Plumtree	5419	.1	.3
Plumtree	5323	.1	.3
Plumtree	5209	.1	.3
Plumtree	5107	.1	.3
Plumtree	5040	.3	.5
Plumtree	5000	Culvert	
Plumtree	4932	.3	.5
Plumtree	4845	.1	.3
Plumtree	4745	.1	.3
Plumtree	4636	.1	.3
Plumtree	4550	.3	.5
Plumtree	4400	Culvert	
Plumtree	4344	.3	.5
Plumtree	4289	.1	.3
Plumtree	4185	.1	.3
Plumtree	4033	.1	.3
Plumtree	3930	.1	.3
Plumtree	3816	.1	.3
Plumtree	3688	.1	.3
Plumtree	3550	.1	.3
Plumtree	3428	.1	.3
Plumtree	3296	.1	.3
Plumtree	3179	.1	.3
Plumtree	3077	.1	.3
Plumtree	2978	.1	.3
Plumtree	2917	.3	.5
Plumtree	2900	Culvert	
Plumtree	2827	.3	.5
Plumtree	2759	.1	.3
Plumtree	2589	.1	.3
Plumtree	2485	.1	.3
Plumtree	2331	.1	.3
Plumtree	2153	.1	.3
Plumtree	1994	.1	.3
Plumtree	1888	.3	.5
Plumtree	1850	Bridge	
Plumtree	1830	.3	.5
Plumtree	1641	.1	.3
Plumtree	1463	.1	.3
Plumtree	1291	.1	.3
Plumtree	1124	.1	.3
Plumtree	994	.1	.3
Plumtree	911	.1	.3
Plumtree	762	.1	.3
Plumtree	658	.1	.3
Plumtree	526	.1	.3
Plumtree	380	.1	.3
Plumtree	146	.1	.3
Plumtree	63	.1	.3

HEC-RAS Plan: I River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	10286	1-YR	107.00	395.09	396.59	396.59	396.63	0.004941	2.11	88.83	144.57	0.44
Plumtree	10286	2-YR	173.00	395.09	396.71	396.59	396.78	0.007433	2.86	106.13	147.48	0.55
Plumtree	10286	10-YR	418.00	395.09	397.29	396.75	397.41	0.006537	3.81	196.25	161.80	0.56
Plumtree	10286	50-YR	790.00	395.09	397.89	397.15	398.08	0.006688	4.85	297.01	176.43	0.60
Plumtree	10286	100-YR	996.00	395.09	397.99	397.34	398.26	0.008931	5.79	314.89	178.94	0.70
Plumtree	10286	7-30-2016	1041.00	395.09	398.01	397.38	398.29	0.009433	5.99	318.44	179.29	0.72
Plumtree	10044	1-YR	107.00	392.49	394.00	393.88	394.13	0.014288	3.28	49.16	100.57	0.72
Plumtree	10044	2-YR	173.00	392.49	394.20	394.03	394.37	0.014140	3.87	71.41	120.73	0.75
Plumtree	10044	10-YR	418.00	392.49	394.62	394.53	394.95	0.017950	5.61	138.67	192.42	0.90
Plumtree	10044	50-YR	790.00	392.49	394.99	394.99	395.46	0.020398	7.07	211.64	205.20	1.00
Plumtree	10044	100-YR	996.00	392.49	395.43		395.79	0.011997	6.40	308.16	236.81	0.80
Plumtree	10044	7-30-2016	1041.00	392.49	395.52		395.86	0.010924	6.29	329.82	242.32	0.77
Plumtree	9814	1-YR	107.00	388.76	391.05	390.77	391.26	0.010955	3.66	29.27	31.73	0.67
Plumtree	9814	2-YR	173.00	388.76	391.48	391.11	391.71	0.009679	3.89	44.48	40.10	0.65
Plumtree	9814	10-YR	418.00	388.76	392.61	391.93	392.86	0.005451	4.07	111.79	113.39	0.53
Plumtree	9814	50-YR	790.00	388.76	394.88	392.83	394.93	0.000541	2.20	682.65	289.67	0.19
Plumtree	9814	100-YR	996.00	388.76	395.29	393.16	395.34	0.000573	2.41	802.84	305.18	0.20
Plumtree	9814	7-30-2016	1041.00	388.76	395.36	393.21	395.42	0.000582	2.46	827.25	312.10	0.20
Plumtree	9762	1-YR	107.00	388.00	389.88	389.88	390.40	0.026174	5.75	18.60	18.67	1.02
Plumtree	9762	2-YR	173.00	388.00	390.32	390.32	390.93	0.024229	6.25	27.66	23.32	1.01
Plumtree	9762	10-YR	418.00	388.00	392.52		392.64	0.002358	3.06	206.10	155.20	0.36
Plumtree	9762	50-YR	790.00	388.00	394.86		394.91	0.000440	2.11	701.27	259.96	0.17
Plumtree	9762	100-YR	996.00	388.00	395.26		395.31	0.000518	2.42	809.99	292.31	0.19
Plumtree	9762	7-30-2016	1041.00	388.00	395.34		395.40	0.000528	2.47	833.37	301.70	0.19
Plumtree	9732	1-YR	107.00	387.00	389.31	388.89	389.58	0.012352	4.17	25.65	24.41	0.72
Plumtree	9732	2-YR	173.00	387.00	389.94	389.43	390.20	0.007476	4.08	42.37	28.51	0.59
Plumtree	9732	10-YR	418.00	387.00	392.42	390.38	392.58	0.001554	3.20	132.19	44.29	0.31
Plumtree	9732	50-YR	790.00	387.00	394.78	391.38	394.89	0.000639	2.92	454.90	210.11	0.22
Plumtree	9732	100-YR	996.00	387.00	395.16	391.81	395.29	0.000737	3.28	538.18	226.00	0.23
Plumtree	9732	7-30-2016	1041.00	387.00	395.23	391.89	395.37	0.000757	3.35	555.33	229.14	0.24
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	107.00	386.27	389.00	387.70	389.07	0.001723	2.11	50.96	32.41	0.29
Plumtree	9589	2-YR	173.00	386.27	389.20	388.16	389.34	0.003064	3.03	57.62	34.58	0.40
Plumtree	9589	10-YR	418.00	386.27	390.69	389.16	390.93	0.002348	3.95	110.93	54.19	0.38
Plumtree	9589	50-YR	790.00	386.27	391.77	390.10	392.17	0.002878	5.28	196.41	85.01	0.44
Plumtree	9589	100-YR	996.00	386.27	392.30	390.54	392.75	0.002918	5.73	263.69	176.61	0.45
Plumtree	9589	7-30-2016	1041.00	386.27	392.46	390.63	392.90	0.002772	5.70	294.49	222.53	0.45
Plumtree	9499	1-YR	161.00	385.35	388.60		388.78	0.004342	3.47	53.90	41.11	0.46
Plumtree	9499	2-YR	188.00	385.35	388.84		389.01	0.004067	3.51	64.19	47.40	0.45
Plumtree	9499	10-YR	559.00	385.35	390.48		390.68	0.002721	4.10	232.64	154.34	0.40
Plumtree	9499	50-YR	1078.00	385.35	391.63		391.85	0.002373	4.70	417.55	167.28	0.40
Plumtree	9499	100-YR	1389.00	385.35	392.19		392.42	0.002279	4.99	512.13	173.12	0.40
Plumtree	9499	7-30-2016	1479.00	385.35	392.34		392.57	0.002250	5.06	538.64	174.48	0.40
Plumtree	9398	1-YR	161.00	384.42	388.12		388.36	0.003759	3.93	40.99	15.33	0.42
Plumtree	9398	2-YR	188.00	384.42	388.28		388.57	0.004366	4.33	43.46	15.67	0.46
Plumtree	9398	10-YR	559.00	384.42	389.92		390.30	0.004610	5.80	202.59	158.33	0.50
Plumtree	9398	50-YR	1078.00	384.42	391.30		391.57	0.003036	5.69	437.55	179.70	0.43
Plumtree	9398	100-YR	1389.00	384.42	391.90		392.16	0.002814	5.87	546.03	184.74	0.42
Plumtree	9398	7-30-2016	1479.00	384.42	392.05		392.32	0.002788	5.94	575.29	187.35	0.42
Plumtree	9301	1-YR	161.00	383.31	387.92		388.08	0.002046	3.22	55.95	31.16	0.32
Plumtree	9301	2-YR	188.00	383.31	388.04		388.24	0.002451	3.60	59.77	32.07	0.35
Plumtree	9301	10-YR	559.00	383.31	388.98	388.68	389.71	0.007422	7.35	120.23	86.84	0.64
Plumtree	9301	50-YR	1078.00	383.31	389.88	389.88	391.00	0.010106	9.80	204.15	97.61	0.77
Plumtree	9301	100-YR	1389.00	383.31	390.34	390.34	391.59	0.010709	10.70	250.09	102.09	0.81
Plumtree	9301	7-30-2016	1479.00	383.31	390.46	390.46	391.74	0.010891	10.94	262.23	103.24	0.82
Plumtree	9196	1-YR	161.00	383.81	386.98	386.74	387.57	0.016116	6.16	26.57	40.31	0.84
Plumtree	9196	2-YR	188.00	383.81	387.33	387.33	387.75	0.010327	5.40	53.97	104.88	0.69
Plumtree	9196	10-YR	559.00	383.81	388.45		388.81	0.007496	6.18	193.98	139.59	0.63
Plumtree	9196	50-YR	1078.00	383.81	389.50	388.80	389.85	0.006051	6.79	346.04	152.02	0.60
Plumtree	9196	100-YR	1389.00	383.81	389.98	389.12	390.35	0.005848	7.19	419.80	156.58	0.60
Plumtree	9196	7-30-2016	1479.00	383.81	390.11	389.19	390.49	0.005808	7.30	440.06	157.92	0.60
Plumtree	8987	1-YR	161.00	382.77	386.32		386.44	0.002232	3.11	94.84	109.52	0.33
Plumtree	8987	2-YR	188.00	382.77	386.46	385.12	386.59	0.002314	3.26	110.97	114.36	0.34
Plumtree	8987	10-YR	559.00	382.77	387.64		387.84	0.003065	4.72	254.01	128.91	0.41
Plumtree	8987	50-YR	1078.00	382.77	388.55		388.85	0.004045	6.21	376.17	139.39	0.49
Plumtree	8987	100-YR	1389.00	382.77	388.95		389.31	0.004557	6.94	433.36	143.20	0.53
Plumtree	8987	7-30-2016	1479.00	382.77	389.06		389.44	0.004676	7.13	449.32	144.25	0.54

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	8753	1-YR	161.00	381.99	385.06	385.05	385.47	0.009640	5.54	45.90	74.14	0.65
Plumtree	8753	2-YR	188.00	381.99	385.18	385.18	385.59	0.009577	5.72	55.39	78.27	0.65
Plumtree	8753	10-YR	559.00	381.99	386.32		386.72	0.008190	6.87	162.85	130.25	0.64
Plumtree	8753	50-YR	1078.00	381.99	387.49		387.77	0.005351	6.71	373.50	206.98	0.55
Plumtree	8753	100-YR	1389.00	381.99	388.04		388.27	0.004138	6.36	497.49	238.38	0.49
Plumtree	8753	7-30-2016	1479.00	381.99	388.18		388.40	0.003920	6.30	532.05	242.65	0.48
Plumtree	8579	1-YR	161.00	381.13	383.94		384.15	0.005499	4.09	65.29	83.78	0.51
Plumtree	8579	2-YR	188.00	381.13	384.11	383.46	384.31	0.004949	4.10	80.02	88.15	0.49
Plumtree	8579	10-YR	559.00	381.13	385.55		385.75	0.003548	4.86	227.27	113.83	0.45
Plumtree	8579	50-YR	1078.00	381.13	386.72		386.99	0.003649	5.94	373.02	135.09	0.48
Plumtree	8579	100-YR	1389.00	381.13	387.25		387.56	0.003797	6.50	447.72	146.66	0.50
Plumtree	8579	7-30-2016	1479.00	381.13	387.40		387.71	0.003813	6.63	468.78	148.92	0.50
Plumtree	8374	1-YR	161.00	380.31	383.54		383.62	0.001377	2.52	103.86	83.71	0.27
Plumtree	8374	2-YR	188.00	380.31	383.70		383.79	0.001427	2.65	117.98	86.04	0.28
Plumtree	8374	10-YR	559.00	380.31	385.03		385.19	0.002158	4.04	244.83	106.38	0.36
Plumtree	8374	50-YR	1078.00	380.31	386.10		386.35	0.002727	5.33	366.33	120.53	0.42
Plumtree	8374	100-YR	1389.00	380.31	386.57		386.88	0.003042	5.98	424.17	126.00	0.45
Plumtree	8374	7-30-2016	1479.00	380.31	386.69		387.02	0.003128	6.15	439.78	127.86	0.46
Plumtree	8229	1-YR	161.00	379.79	382.59	382.59	383.13	0.011503	6.23	39.45	53.85	0.73
Plumtree	8229	2-YR	188.00	379.79	382.76	382.76	383.29	0.011003	6.39	49.06	61.25	0.72
Plumtree	8229	10-YR	559.00	379.79	384.13		384.61	0.008189	7.44	166.53	105.72	0.67
Plumtree	8229	50-YR	1078.00	379.79	385.11		385.68	0.008555	8.87	284.62	132.26	0.72
Plumtree	8229	100-YR	1389.00	379.79	385.59		386.17	0.008317	9.31	348.95	138.88	0.72
Plumtree	8229	7-30-2016	1479.00	379.79	385.70		386.29	0.008421	9.50	364.13	140.40	0.72
Plumtree	8094	1-YR	161.00	378.24	381.54	380.53	381.86	0.005818	4.62	43.02	50.28	0.51
Plumtree	8094	2-YR	188.00	378.24	381.65	380.75	382.03	0.006743	5.06	49.18	58.89	0.55
Plumtree	8094	10-YR	559.00	378.24	382.69	382.69	383.35	0.010473	7.77	145.19	116.62	0.72
Plumtree	8094	50-YR	1078.00	378.24	383.50	383.50	384.29	0.012007	9.50	250.02	141.20	0.79
Plumtree	8094	100-YR	1389.00	378.24	383.81	383.81	384.72	0.013485	10.53	294.82	148.44	0.85
Plumtree	8094	7-30-2016	1479.00	378.24	383.91	383.91	384.84	0.013516	10.69	310.23	150.86	0.85
Plumtree	7954	1-YR	161.00	377.79	380.90	380.64	381.00	0.005582	3.63	106.57	153.64	0.48
Plumtree	7954	2-YR	188.00	377.79	380.98	380.70	381.09	0.005684	3.78	119.36	155.05	0.49
Plumtree	7954	10-YR	559.00	377.79	381.76	381.24	381.91	0.006812	5.23	244.30	168.15	0.57
Plumtree	7954	50-YR	1078.00	377.79	382.46	381.73	382.68	0.007740	6.55	369.32	184.12	0.63
Plumtree	7954	100-YR	1389.00	377.79	382.81	381.91	383.06	0.007974	7.10	433.75	189.57	0.65
Plumtree	7954	7-30-2016	1479.00	377.79	382.90	381.96	383.17	0.008025	7.24	451.52	191.04	0.66
Plumtree	7800	1-YR	161.00	378.73	379.75		379.82	0.010950	3.42	102.43	170.75	0.65
Plumtree	7800	2-YR	188.00	378.73	379.81		379.88	0.011129	3.61	112.68	172.32	0.67
Plumtree	7800	10-YR	559.00	378.73	380.46		380.60	0.010716	5.07	229.37	184.87	0.72
Plumtree	7800	50-YR	1078.00	378.73	381.16		381.36	0.009562	6.13	362.42	196.11	0.72
Plumtree	7800	100-YR	1389.00	378.73	381.52		381.75	0.009072	6.59	434.33	201.92	0.72
Plumtree	7800	7-30-2016	1479.00	378.73	381.62		381.86	0.008881	6.69	455.54	203.60	0.71
Plumtree	7548	1-YR	161.00	375.57	378.46		378.52	0.002957	2.94	159.68	269.81	0.37
Plumtree	7548	2-YR	188.00	375.57	378.55		378.60	0.002861	2.98	183.60	271.87	0.37
Plumtree	7548	10-YR	559.00	375.57	379.41		379.46	0.002375	3.43	426.41	291.99	0.35
Plumtree	7548	50-YR	1078.00	375.57	380.30		380.35	0.002030	3.78	693.98	310.70	0.34
Plumtree	7548	100-YR	1389.00	375.57	380.69		380.75	0.002042	4.05	815.42	315.96	0.35
Plumtree	7548	7-30-2016	1479.00	375.57	380.82		380.89	0.001970	4.06	858.96	317.79	0.34
Plumtree	7367	1-YR	161.00	378.30	377.54		377.59	0.010476		86.79	103.00	0.00
Plumtree	7367	2-YR	188.00	378.30	377.63		377.69	0.010660		96.28	111.46	0.00
Plumtree	7367	10-YR	559.00	378.30	378.74		378.81	0.006065	1.05	278.85	214.23	0.39
Plumtree	7367	50-YR	1078.00	378.30	379.77		379.83	0.004400	2.27	587.10	386.86	0.42
Plumtree	7367	100-YR	1389.00	378.30	380.23		380.29	0.003244	2.52	769.89	405.62	0.38
Plumtree	7367	7-30-2016	1479.00	378.30	380.41		380.46	0.002769	2.54	843.35	408.85	0.36
Plumtree	7216	1-YR	161.00	375.26	376.95	376.41	376.98	0.002031	1.73	143.40	185.13	0.30
Plumtree	7216	2-YR	188.00	375.26	377.04	376.47	377.07	0.002031	1.82	160.21	190.55	0.30
Plumtree	7216	10-YR	559.00	375.26	378.51	376.94	378.55	0.000742	1.92	499.44	260.49	0.21
Plumtree	7216	50-YR	1078.00	375.26	379.55	377.40	379.60	0.000756	2.42	786.93	293.30	0.22
Plumtree	7216	100-YR	1389.00	375.26	380.01	377.63	380.07	0.000794	2.68	924.88	307.22	0.23
Plumtree	7216	7-30-2016	1479.00	375.26	380.20	377.68	380.27	0.000748	2.69	985.64	311.39	0.23
Plumtree	7030	1-YR	161.00	373.43	375.92	375.92	376.15	0.014133	5.53	75.50	147.40	0.78
Plumtree	7030	2-YR	188.00	373.43	375.97	375.97	376.22	0.015515	5.91	82.64	150.75	0.82
Plumtree	7030	10-YR	559.00	373.43	378.39		378.41	0.000681	2.28	548.23	220.14	0.20
Plumtree	7030	50-YR	1078.00	373.43	379.40		379.44	0.000874	3.00	779.27	233.60	0.23
Plumtree	7030	100-YR	1389.00	373.43	379.85		379.90	0.001008	3.40	884.64	243.53	0.26
Plumtree	7030	7-30-2016	1479.00	373.43	380.05		380.10	0.000990	3.45	934.67	251.65	0.25

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	6893	1-YR	161.00	370.68	373.99	373.27	374.17	0.004847	3.70	72.45	102.10	0.48
Plumtree	6893	2-YR	188.00	370.68	374.13	373.44	374.30	0.004584	3.77	86.79	106.83	0.47
Plumtree	6893	10-YR	559.00	370.68	378.35		378.37	0.000149	1.46	823.79	226.67	0.10
Plumtree	6893	50-YR	1078.00	370.68	379.35		379.38	0.000278	2.20	1058.60	245.58	0.14
Plumtree	6893	100-YR	1389.00	370.68	379.78		379.82	0.000354	2.58	1165.97	253.64	0.16
Plumtree	6893	7-30-2016	1479.00	370.68	379.98		380.02	0.000356	2.63	1217.59	257.48	0.17
Plumtree	6766	1-YR	161.00	369.76	373.26		373.46	0.006459	3.80	58.02	88.73	0.54
Plumtree	6766	2-YR	188.00	369.76	373.79		373.88	0.002260	2.74	109.85	104.66	0.34
Plumtree	6766	10-YR	559.00	369.76	378.34		378.35	0.000096	1.23	979.66	272.11	0.08
Plumtree	6766	50-YR	1078.00	369.76	379.32		379.35	0.000194	1.91	1271.07	319.86	0.12
Plumtree	6766	100-YR	1389.00	369.76	379.75		379.78	0.000251	2.26	1411.53	343.38	0.14
Plumtree	6766	7-30-2016	1479.00	369.76	379.95		379.98	0.000252	2.30	1481.72	350.79	0.14
Plumtree	6663	1-YR	161.00	369.26	372.94		373.08	0.002204	3.03	62.16	61.85	0.33
Plumtree	6663	2-YR	188.00	369.26	373.65		373.73	0.001036	2.41	120.92	98.22	0.24
Plumtree	6663	10-YR	559.00	369.26	378.33		378.34	0.000075	1.18	1131.82	322.55	0.07
Plumtree	6663	50-YR	1078.00	369.26	379.31		379.33	0.000143	1.76	1457.30	342.72	0.10
Plumtree	6663	100-YR	1389.00	369.26	379.73		379.75	0.000183	2.05	1602.83	351.05	0.12
Plumtree	6663	7-30-2016	1479.00	369.26	379.93		379.96	0.000184	2.09	1674.25	355.39	0.12
Plumtree	6568	1-YR	167.00	368.65	372.61		372.82	0.003144	3.80	57.09	47.95	0.38
Plumtree	6568	2-YR	214.00	368.65	373.48		373.60	0.001561	3.15	119.12	93.77	0.28
Plumtree	6568	10-YR	626.00	368.65	378.32		378.33	0.000109	1.42	1062.03	275.41	0.08
Plumtree	6568	50-YR	1219.00	368.65	379.29		379.31	0.000221	2.17	1338.19	297.81	0.12
Plumtree	6568	100-YR	1566.00	368.65	379.70		379.73	0.000290	2.55	1463.19	309.71	0.14
Plumtree	6568	7-30-2016	1746.00	368.65	379.90		379.93	0.000325	2.74	1524.67	316.24	0.15
Plumtree	6454	1-YR	167.00	368.30	372.24		372.43	0.003719	3.50	49.48	32.40	0.43
Plumtree	6454	2-YR	214.00	368.30	373.33		373.44	0.001298	2.73	101.21	65.19	0.27
Plumtree	6454	10-YR	626.00	368.30	378.31		378.32	0.000092	1.37	957.35	226.90	0.08
Plumtree	6454	50-YR	1219.00	368.30	379.25		379.29	0.000204	2.19	1187.70	261.09	0.13
Plumtree	6454	100-YR	1566.00	368.30	379.65		379.70	0.000273	2.60	1294.83	275.78	0.15
Plumtree	6454	7-30-2016	1746.00	368.30	379.84		379.90	0.000308	2.80	1347.92	283.75	0.16
Plumtree	6350	1-YR	167.00	366.97	372.10	369.61	372.19	0.001277	2.41	69.37	24.64	0.25
Plumtree	6350	2-YR	214.00	366.97	373.25	370.11	373.33	0.000745	2.13	101.03	30.84	0.20
Plumtree	6350	10-YR	626.00	366.97	378.26	371.98	378.31	0.000192	1.95	554.55	211.75	0.12
Plumtree	6350	50-YR	1219.00	366.97	379.14	373.63	379.25	0.000444	3.17	733.11	250.16	0.18
Plumtree	6350	100-YR	1566.00	366.97	379.49	374.47	379.65	0.000601	3.77	815.37	265.36	0.21
Plumtree	6350	7-30-2016	1746.00	366.97	379.66	374.88	379.84	0.000679	4.06	856.09	271.51	0.23
Plumtree	6296	1-YR	167.00	367.41	371.93	370.25	372.09	0.002270	3.36	61.27	25.88	0.33
Plumtree	6296	2-YR	214.00	367.41	373.16	370.60	373.27	0.001127	2.92	97.94	33.89	0.24
Plumtree	6296	10-YR	626.00	367.41	378.21	372.49	378.29	0.000390	2.83	489.12	151.06	0.16
Plumtree	6296	50-YR	1219.00	367.41	379.01	374.28	379.21	0.000969	4.70	622.88	208.73	0.26
Plumtree	6296	100-YR	1566.00	367.41	379.33	374.93	379.59	0.001318	5.59	694.28	233.86	0.30
Plumtree	6296	7-30-2016	1746.00	367.41	379.48	375.86	379.77	0.001494	6.01	729.69	243.80	0.32
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	167.00	366.39	370.57	367.86	370.62	0.000474	1.75	95.97	29.40	0.17
Plumtree	6197	2-YR	214.00	366.39	371.11	368.09	371.16	0.000479	1.94	112.11	30.92	0.17
Plumtree	6197	10-YR	626.00	366.39	373.29	369.60	373.49	0.000922	3.60	186.52	37.12	0.26
Plumtree	6197	50-YR	1219.00	366.39	374.96	371.06	375.41	0.001536	5.44	255.63	52.75	0.34
Plumtree	6197	100-YR	1566.00	366.39	375.62	371.80	376.23	0.001892	6.38	296.47	70.25	0.39
Plumtree	6197	7-30-2016	1746.00	366.39	375.93	372.16	376.62	0.002056	6.81	319.25	78.34	0.40
Plumtree	6122	1-YR	167.00	366.62	369.59	369.28	370.31	0.016593	6.82	24.48	11.74	0.83
Plumtree	6122	2-YR	214.00	366.62	369.74	369.74	370.76	0.023781	8.11	26.39	12.95	1.00
Plumtree	6122	10-YR	626.00	366.62	372.06	371.83	373.08	0.011437	8.46	93.23	43.57	0.78
Plumtree	6122	50-YR	1219.00	366.62	373.41	373.41	374.86	0.011865	10.64	167.19	75.54	0.84
Plumtree	6122	100-YR	1566.00	366.62	373.98	373.98	375.63	0.012192	11.60	202.78	79.58	0.87
Plumtree	6122	7-30-2016	1746.00	366.62	374.26	374.26	375.99	0.012244	12.01	220.57	86.23	0.88
Plumtree	6028	1-YR	167.00	365.53	369.45	368.43	369.59	0.002865	3.24	73.66	64.76	0.38
Plumtree	6028	2-YR	214.00	365.53	369.83	368.91	369.97	0.002385	3.28	100.03	73.48	0.36
Plumtree	6028	10-YR	626.00	365.53	372.49	370.10	372.59	0.000911	3.23	388.78	149.72	0.25
Plumtree	6028	50-YR	1219.00	365.53	373.65	371.08	373.80	0.001264	4.34	575.58	204.75	0.30
Plumtree	6028	100-YR	1566.00	365.53	374.18	371.57	374.36	0.001394	4.81	668.64	216.80	0.32
Plumtree	6028	7-30-2016	1746.00	365.53	374.44	371.80	374.63	0.001449	5.03	714.56	223.00	0.33
Plumtree	5926	1-YR	167.00	365.38	368.89	368.24	369.18	0.005838	4.74	48.19	29.86	0.52
Plumtree	5926	2-YR	214.00	365.38	369.26	368.51	369.59	0.005851	5.19	60.40	38.48	0.54
Plumtree	5926	10-YR	626.00	365.38	372.29	370.25	372.46	0.001701	4.50	271.75	154.50	0.33
Plumtree	5926	50-YR	1219.00	365.38	373.25	371.61	373.59	0.003016	6.62	367.36	164.27	0.44
Plumtree	5926	100-YR	1566.00	365.38	373.68	372.05	374.12	0.003674	7.61	413.49	168.66	0.49
Plumtree	5926	7-30-2016	1746.00	365.38	373.89	372.28	374.37	0.003984	8.07	436.01	170.75	0.52

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5824	1-YR	167.00	365.08	367.51	367.42	368.15	0.019090	6.39	26.13	17.95	0.93
Plumtree	5824	2-YR	214.00	365.08	368.82		369.04	0.004355	3.80	56.30	28.30	0.47
Plumtree	5824	10-YR	626.00	365.08	372.19		372.32	0.000879	3.22	324.96	158.35	0.25
Plumtree	5824	50-YR	1219.00	365.08	373.11		373.35	0.001465	4.64	474.69	167.91	0.33
Plumtree	5824	100-YR	1566.00	365.08	373.53		373.83	0.001738	5.28	545.92	172.27	0.36
Plumtree	5824	7-30-2016	1746.00	365.08	373.73		374.06	0.001861	5.57	580.67	174.38	0.38
Plumtree	5745	1-YR	167.00	363.03	367.44	365.82	367.59	0.002392	3.10	53.85	22.00	0.35
Plumtree	5745	2-YR	214.00	363.03	368.76	366.13	368.85	0.001037	2.48	88.06	32.47	0.24
Plumtree	5745	10-YR	626.00	363.03	372.14	367.99	372.26	0.000626	3.01	278.84	101.15	0.21
Plumtree	5745	50-YR	1219.00	363.03	372.89	369.71	373.22	0.001505	5.03	341.61	117.73	0.33
Plumtree	5745	100-YR	1566.00	363.03	373.17	370.48	373.66	0.002119	6.12	366.31	134.53	0.40
Plumtree	5745	7-30-2016	1746.00	363.03	373.29	370.89	373.86	0.002471	6.67	376.77	141.91	0.43
Plumtree	5711	1-YR	167.00	362.51	367.42	364.98	367.51	0.001219	2.47	67.62	23.14	0.25
Plumtree	5711	2-YR	214.00	362.51	368.75	365.34	368.82	0.000608	2.11	107.97	38.57	0.19
Plumtree	5711	10-YR	626.00	362.51	372.14	367.32	372.24	0.000469	2.78	338.13	123.53	0.18
Plumtree	5711	50-YR	1219.00	362.51	372.89	369.15	373.16	0.001161	4.67	448.95	169.35	0.29
Plumtree	5711	100-YR	1566.00	362.51	373.17	369.99	373.57	0.001621	5.65	498.84	179.51	0.35
Plumtree	5711	7-30-2016	1746.00	362.51	373.30	370.34	373.75	0.001851	6.10	521.87	182.19	0.37
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	167.00	361.81	366.27	363.91	366.33	0.000816	2.04	81.86	28.57	0.21
Plumtree	5614	2-YR	214.00	361.81	366.78	364.17	366.86	0.000834	2.20	97.06	30.53	0.22
Plumtree	5614	10-YR	626.00	361.81	371.31	365.80	371.36	0.000227	2.01	520.38	178.37	0.13
Plumtree	5614	50-YR	1219.00	361.81	372.57	367.41	372.67	0.000404	2.97	769.55	220.23	0.18
Plumtree	5614	100-YR	1566.00	361.81	373.01	368.18	373.14	0.000522	3.49	869.02	235.27	0.20
Plumtree	5614	7-30-2016	1746.00	361.81	373.22	368.51	373.37	0.000572	3.71	919.53	238.69	0.21
Plumtree	5560	1-YR	167.00	362.08	366.17		366.27	0.001356	2.49	67.11	24.26	0.26
Plumtree	5560	2-YR	214.00	362.08	366.68		366.79	0.001392	2.68	79.94	26.36	0.27
Plumtree	5560	10-YR	626.00	362.08	371.30		371.34	0.000226	1.96	676.22	273.40	0.13
Plumtree	5560	50-YR	1219.00	362.08	372.57		372.63	0.000324	2.61	1054.16	315.05	0.16
Plumtree	5560	100-YR	1566.00	362.08	373.01		373.09	0.000401	3.00	1196.88	332.47	0.18
Plumtree	5560	7-30-2016	1746.00	362.08	373.22		373.31	0.000436	3.18	1268.98	341.22	0.18
Plumtree	5510	1-YR	167.00	362.16	365.80	364.84	366.12	0.006026	4.55	36.66	16.24	0.53
Plumtree	5510	2-YR	214.00	362.16	366.29	365.19	366.64	0.005655	4.75	45.04	17.76	0.53
Plumtree	5510	10-YR	626.00	362.16	371.22	367.24	371.32	0.000574	2.91	414.87	220.73	0.20
Plumtree	5510	50-YR	1219.00	362.16	372.45	369.34	372.60	0.000854	3.96	640.45	249.99	0.25
Plumtree	5510	100-YR	1566.00	362.16	372.85	369.91	373.04	0.001062	4.56	721.78	255.74	0.28
Plumtree	5510	7-30-2016	1746.00	362.16	373.05	370.70	373.26	0.001156	4.83	762.38	258.53	0.29
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	167.00	361.52	365.72	363.90	365.88	0.002335	3.23	51.66	18.67	0.34
Plumtree	5474	2-YR	214.00	361.52	366.21	364.24	366.40	0.002423	3.50	61.22	20.13	0.35
Plumtree	5474	10-YR	626.00	361.52	371.17	366.29	371.25	0.000409	2.57	450.99	172.17	0.17
Plumtree	5474	50-YR	1219.00	361.52	372.35	368.45	372.49	0.000688	3.68	674.10	203.13	0.22
Plumtree	5474	100-YR	1566.00	361.52	372.72	369.34	372.91	0.000890	4.31	750.82	207.62	0.25
Plumtree	5474	7-30-2016	1746.00	361.52	372.91	369.80	373.11	0.000987	4.60	788.90	209.81	0.27
Plumtree	5419	1-YR	167.00	361.46	365.52	363.95	365.72	0.002981	3.59	46.48	16.97	0.38
Plumtree	5419	2-YR	214.00	361.46	366.00	364.27	366.23	0.003113	3.90	54.81	18.09	0.40
Plumtree	5419	10-YR	626.00	361.46	371.15	366.35	371.22	0.000398	2.58	465.86	191.70	0.16
Plumtree	5419	50-YR	1219.00	361.46	372.31	368.72	372.45	0.000710	3.78	660.98	221.17	0.22
Plumtree	5419	100-YR	1566.00	361.46	372.67	369.66	372.85	0.000932	4.44	726.76	225.42	0.26
Plumtree	5419	7-30-2016	1746.00	361.46	372.85	369.92	373.05	0.001041	4.75	759.35	227.39	0.27
Plumtree	5323	1-YR	167.00	361.32	365.18		365.40	0.003781	3.81	43.85	17.40	0.42
Plumtree	5323	2-YR	214.00	361.32	365.65		365.91	0.003797	4.09	53.39	29.63	0.43
Plumtree	5323	10-YR	626.00	361.32	371.15		371.19	0.000218	1.98	614.48	150.56	0.12
Plumtree	5323	50-YR	1219.00	361.32	372.30		372.38	0.000434	3.04	797.16	167.21	0.18
Plumtree	5323	100-YR	1566.00	361.32	372.65		372.76	0.000598	3.66	856.99	173.20	0.21
Plumtree	5323	7-30-2016	1746.00	361.32	372.83		372.95	0.000683	3.96	886.76	175.93	0.22
Plumtree	5209	1-YR	167.00	361.10	364.40	363.54	364.80	0.007371	5.07	32.95	14.02	0.58
Plumtree	5209	2-YR	214.00	361.10	364.83	363.91	365.29	0.007529	5.46	39.20	15.03	0.60
Plumtree	5209	10-YR	626.00	361.10	371.13	366.38	371.16	0.000178	1.89	705.08	169.35	0.11
Plumtree	5209	50-YR	1219.00	361.10	372.27	367.63	372.33	0.000354	2.89	909.02	196.33	0.16
Plumtree	5209	100-YR	1566.00	361.10	372.61	368.14	372.69	0.000501	3.51	975.97	206.06	0.19
Plumtree	5209	7-30-2016	1746.00	361.10	372.77	368.37	372.87	0.000579	3.82	1009.55	211.12	0.21
Plumtree	5107	1-YR	167.00	359.92	363.35	362.72	363.87	0.011209	5.77	28.93	13.92	0.71
Plumtree	5107	2-YR	214.00	359.92	363.96	363.18	364.45	0.009132	5.61	38.17	16.58	0.65
Plumtree	5107	10-YR	626.00	359.92	371.07	365.33	371.13	0.000280	2.30	427.37	227.77	0.14

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	5107	50-YR	1219.00	359.92	372.13	367.17	372.28	0.000577	3.57	609.13	278.67	0.21
Plumtree	5107	100-YR	1566.00	359.92	372.41	367.87	372.62	0.000817	4.34	667.06	299.06	0.25
Plumtree	5107	7-30-2016	1746.00	359.92	372.55	368.18	372.78	0.000944	4.70	696.29	306.59	0.27
Plumtree	5040	1-YR	167.00	359.23	362.76	362.14	363.17	0.008944	5.18	32.24	16.19	0.65
Plumtree	5040	2-YR	214.00	359.23	363.64	362.48	363.95	0.004974	4.45	48.05	19.39	0.50
Plumtree	5040	10-YR	626.00	359.23	371.06	364.45	371.12	0.000219	2.16	519.63	232.69	0.13
Plumtree	5040	50-YR	1219.00	359.23	372.12	366.19	372.24	0.000418	3.22	795.60	285.24	0.18
Plumtree	5040	100-YR	1566.00	359.23	372.40	366.92	372.56	0.000576	3.85	876.43	294.23	0.21
Plumtree	5040	7-30-2016	1746.00	359.23	372.53	367.29	372.72	0.000670	4.19	916.10	310.08	0.23
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	167.00	359.04	362.01	361.16	362.28	0.005467	4.20	39.79	19.56	0.52
Plumtree	4932	2-YR	214.00	359.04	362.62	361.45	362.88	0.004138	4.09	52.35	21.55	0.46
Plumtree	4932	10-YR	626.00	359.04	368.43	363.21	368.57	0.000509	3.09	217.00	50.08	0.20
Plumtree	4932	50-YR	1219.00	359.04	371.98	364.83	372.11	0.000338	3.23	751.92	230.66	0.17
Plumtree	4932	100-YR	1566.00	359.04	372.30	365.58	372.47	0.000471	3.89	827.30	239.18	0.20
Plumtree	4932	7-30-2016	1746.00	359.04	372.42	365.97	372.63	0.000548	4.22	857.31	241.32	0.22
Plumtree	4845	1-YR	167.00	357.81	361.81	359.97	361.95	0.001911	3.00	55.70	19.72	0.31
Plumtree	4845	2-YR	214.00	357.81	362.45	360.27	362.60	0.001747	3.11	68.80	21.32	0.31
Plumtree	4845	10-YR	626.00	357.81	368.45	362.18	368.50	0.000227	2.06	449.24	117.60	0.13
Plumtree	4845	50-YR	1219.00	357.81	371.99	364.51	372.05	0.000185	2.36	841.79	175.11	0.12
Plumtree	4845	100-YR	1566.00	357.81	372.31	365.27	372.40	0.000271	2.91	890.41	183.31	0.15
Plumtree	4845	7-30-2016	1746.00	357.81	372.44	365.57	372.54	0.000322	3.19	910.15	186.41	0.16
Plumtree	4745	1-YR	167.00	357.45	361.63		361.75	0.001967	2.74	60.95	25.76	0.31
Plumtree	4745	2-YR	214.00	357.45	362.31		362.42	0.001567	2.69	79.56	29.18	0.29
Plumtree	4745	10-YR	626.00	357.45	368.46		368.48	0.000059	1.12	1145.50	270.77	0.07
Plumtree	4745	50-YR	1219.00	357.45	372.02		372.03	0.000040	1.17	2196.27	325.82	0.06
Plumtree	4745	100-YR	1566.00	357.45	372.35		372.37	0.000059	1.43	2306.09	332.90	0.07
Plumtree	4745	7-30-2016	1746.00	357.45	372.49		372.50	0.000070	1.57	2350.62	336.26	0.08
Plumtree	4636	1-YR	167.00	357.61	361.51		361.59	0.000978	2.28	73.16	23.61	0.23
Plumtree	4636	2-YR	214.00	357.61	362.20		362.29	0.000873	2.38	90.20	26.60	0.22
Plumtree	4636	10-YR	626.00	357.61	368.46		368.47	0.000039	0.97	1495.70	374.26	0.05
Plumtree	4636	50-YR	1219.00	357.61	372.02		372.02	0.000026	0.98	2944.94	518.71	0.05
Plumtree	4636	100-YR	1566.00	357.61	372.35		372.36	0.000037	1.19	3095.64	528.49	0.06
Plumtree	4636	7-30-2016	1746.00	357.61	372.49		372.49	0.000044	1.30	3156.29	532.39	0.06
Plumtree	4550	1-YR	167.00	357.24	361.43	359.18	361.51	0.001045	2.27	73.69	26.59	0.24
Plumtree	4550	2-YR	214.00	357.24	362.13	359.47	362.21	0.000903	2.28	94.03	33.28	0.23
Plumtree	4550	10-YR	626.00	357.24	368.42	361.20	368.46	0.000128	1.78	485.62	384.36	0.10
Plumtree	4550	50-YR	1219.00	357.24	372.02	362.86	372.02	0.000021	0.89	3232.56	498.58	0.04
Plumtree	4550	100-YR	1566.00	357.24	372.35	363.53	372.36	0.000030	1.09	3400.31	521.40	0.05
Plumtree	4550	7-30-2016	1746.00	357.24	372.48	363.85	372.49	0.000035	1.19	3468.03	540.50	0.06
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	167.00	351.69	359.37	354.50	359.40	0.000165	1.23	135.95	27.58	0.10
Plumtree	4344	2-YR	214.00	351.69	359.56	354.80	359.60	0.000244	1.52	141.23	27.87	0.12
Plumtree	4344	10-YR	626.00	351.69	361.51	356.53	361.66	0.000765	3.16	198.56	48.49	0.22
Plumtree	4344	50-YR	1219.00	351.69	362.83	358.25	363.19	0.001465	4.94	306.61	108.13	0.31
Plumtree	4344	100-YR	1566.00	351.69	363.38	359.06	363.85	0.001800	5.72	372.11	125.56	0.35
Plumtree	4344	7-30-2016	1746.00	351.69	363.92	359.45	364.38	0.001680	5.76	442.70	136.91	0.34
Plumtree	4289	1-YR	167.00	352.78	359.36		359.38	0.000171	1.17	142.56	33.33	0.10
Plumtree	4289	2-YR	214.00	352.78	359.55		359.58	0.000250	1.44	148.86	34.03	0.12
Plumtree	4289	10-YR	626.00	352.78	361.49		361.61	0.000684	2.82	232.54	64.30	0.21
Plumtree	4289	50-YR	1219.00	352.78	362.82		363.06	0.001112	4.13	404.41	157.35	0.28
Plumtree	4289	100-YR	1566.00	352.78	363.39		363.69	0.001276	4.66	498.36	171.58	0.30
Plumtree	4289	7-30-2016	1746.00	352.78	363.94		364.21	0.001128	4.59	594.99	179.21	0.28
Plumtree	4185	1-YR	188.00	354.77	359.08		359.31	0.004184	3.88	48.43	21.66	0.46
Plumtree	4185	2-YR	208.00	354.77	359.25		359.50	0.004135	3.98	52.22	22.23	0.46
Plumtree	4185	10-YR	613.00	354.77	360.90	359.83	361.41	0.005681	6.01	144.47	116.66	0.57
Plumtree	4185	50-YR	1243.00	354.77	362.50		362.86	0.003279	5.88	423.38	222.58	0.46
Plumtree	4185	100-YR	1581.00	354.77	363.20		363.50	0.002596	5.70	588.53	252.34	0.42
Plumtree	4185	7-30-2016	1910.00	354.77	363.78		364.05	0.002236	5.64	741.65	276.74	0.39
Plumtree	4033	1-YR	188.00	355.05	358.54		358.75	0.003204	3.65	51.53	20.63	0.41
Plumtree	4033	2-YR	208.00	355.05	358.71		358.93	0.003255	3.78	55.06	21.12	0.41
Plumtree	4033	10-YR	613.00	355.05	360.55		360.78	0.002453	4.51	256.49	163.08	0.39
Plumtree	4033	50-YR	1243.00	355.05	362.31		362.48	0.001497	4.44	609.17	260.25	0.32
Plumtree	4033	100-YR	1581.00	355.05	363.01		363.17	0.001428	4.66	807.50	299.97	0.32
Plumtree	4033	7-30-2016	1910.00	355.05	363.62		363.77	0.001219	4.57	995.71	314.88	0.30

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	3930	1-YR	188.00	354.49	357.86	357.14	358.25	0.007295	5.00	37.77	19.41	0.60
Plumtree	3930	2-YR	208.00	354.49	358.03	357.27	358.44	0.007095	5.13	41.11	21.15	0.60
Plumtree	3930	10-YR	613.00	354.49	360.13	359.57	360.47	0.003615	5.52	233.86	186.13	0.47
Plumtree	3930	50-YR	1243.00	354.49	362.20	360.58	362.33	0.001267	4.26	670.86	233.53	0.30
Plumtree	3930	100-YR	1581.00	354.49	362.91	360.87	363.03	0.001122	4.30	841.77	247.97	0.29
Plumtree	3930	7-30-2016	1910.00	354.49	363.52	361.12	363.64	0.001030	4.36	997.70	259.12	0.28
Plumtree	3816	1-YR	188.00	353.49	357.38	356.06	357.63	0.003735	4.02	50.79	30.64	0.43
Plumtree	3816	2-YR	208.00	353.49	357.57	356.19	357.82	0.003683	4.11	56.74	34.73	0.43
Plumtree	3816	10-YR	613.00	353.49	359.92	358.41	360.14	0.001938	4.48	273.42	142.27	0.35
Plumtree	3816	50-YR	1243.00	353.49	362.05	359.81	362.19	0.001093	4.24	637.07	204.46	0.28
Plumtree	3816	100-YR	1581.00	353.49	362.77	360.24	362.91	0.001028	4.38	770.23	220.74	0.27
Plumtree	3816	7-30-2016	1910.00	353.49	363.38	360.57	363.53	0.000997	4.53	884.73	229.08	0.27
Plumtree	3688	1-YR	188.00	352.86	356.98	355.30	357.20	0.002908	3.81	50.87	24.90	0.38
Plumtree	3688	2-YR	208.00	352.86	357.16	355.42	357.40	0.002927	3.97	55.89	31.38	0.39
Plumtree	3688	10-YR	613.00	352.86	359.62	357.89	359.88	0.002013	4.78	243.83	116.25	0.35
Plumtree	3688	50-YR	1243.00	352.86	361.84	359.51	362.03	0.001343	4.85	567.16	176.67	0.30
Plumtree	3688	100-YR	1581.00	352.86	362.56	360.05	362.76	0.001280	5.01	695.91	186.64	0.30
Plumtree	3688	7-30-2016	1910.00	352.86	363.18	360.46	363.38	0.001244	5.18	808.97	194.39	0.30
Plumtree	3550	1-YR	188.00	352.85	356.53	355.08	356.74	0.003878	3.71	51.09	25.54	0.44
Plumtree	3550	2-YR	208.00	352.85	356.73	355.23	356.95	0.003603	3.76	56.47	27.77	0.42
Plumtree	3550	10-YR	613.00	352.85	359.34	357.22	359.61	0.001937	4.45	211.28	96.76	0.35
Plumtree	3550	50-YR	1243.00	352.85	361.62	359.01	361.85	0.001301	4.68	480.81	150.09	0.31
Plumtree	3550	100-YR	1581.00	352.85	362.32	359.64	362.57	0.001343	5.06	574.06	162.26	0.32
Plumtree	3550	7-30-2016	1910.00	352.85	362.91	360.21	363.19	0.001383	5.39	656.88	175.50	0.32
Plumtree	3428	1-YR	188.00	351.86	356.08	354.38	356.32	0.003063	3.92	49.83	21.19	0.39
Plumtree	3428	2-YR	208.00	351.86	356.29	354.53	356.54	0.003071	4.05	54.37	23.17	0.39
Plumtree	3428	10-YR	613.00	351.86	358.87	356.85	359.30	0.002959	5.66	153.53	58.13	0.42
Plumtree	3428	50-YR	1243.00	351.86	361.10	359.05	361.60	0.002636	6.66	309.57	97.04	0.42
Plumtree	3428	100-YR	1581.00	351.86	361.69	359.68	362.30	0.003025	7.49	361.00	107.80	0.45
Plumtree	3428	7-30-2016	1910.00	351.86	362.19	360.26	362.90	0.003341	8.18	408.62	117.04	0.48
Plumtree	3296	1-YR	188.00	351.72	355.68		355.91	0.003083	3.81	49.38	16.28	0.39
Plumtree	3296	2-YR	208.00	351.72	355.88		356.12	0.003239	3.95	52.59	17.02	0.40
Plumtree	3296	10-YR	613.00	351.72	358.29		358.80	0.004867	5.73	107.10	29.07	0.52
Plumtree	3296	50-YR	1243.00	351.72	360.42		361.15	0.004071	7.04	226.91	97.98	0.51
Plumtree	3296	100-YR	1581.00	351.72	360.80	359.25	361.75	0.005063	8.17	266.53	112.39	0.57
Plumtree	3296	7-30-2016	1910.00	351.72	361.03	360.29	362.25	0.006295	9.34	293.68	121.36	0.64
Plumtree	3179	1-YR	188.00	350.39	355.40	353.77	355.54	0.002816	3.04	61.78	27.80	0.36
Plumtree	3179	2-YR	208.00	350.39	355.58	353.89	355.73	0.002952	3.10	67.20	30.82	0.37
Plumtree	3179	10-YR	613.00	350.39	358.28	355.83	358.42	0.001286	3.10	218.79	84.06	0.27
Plumtree	3179	50-YR	1243.00	350.39	360.63	357.06	360.79	0.000860	3.45	482.08	156.20	0.24
Plumtree	3179	100-YR	1581.00	350.39	361.09	357.57	361.30	0.001049	4.00	538.50	162.32	0.27
Plumtree	3179	7-30-2016	1910.00	350.39	361.42	358.02	361.68	0.001261	4.52	580.36	166.62	0.30
Plumtree	3077	1-YR	188.00	350.72	355.03		355.21	0.003736	3.38	56.19	43.48	0.42
Plumtree	3077	2-YR	208.00	350.72	355.24		355.40	0.003398	3.33	70.13	76.00	0.40
Plumtree	3077	10-YR	613.00	350.72	358.27		358.32	0.000480	2.25	506.55	181.96	0.18
Plumtree	3077	50-YR	1243.00	350.72	360.65		360.70	0.000353	2.49	972.06	222.34	0.16
Plumtree	3077	100-YR	1581.00	350.72	361.12		361.19	0.000443	2.91	1079.71	236.93	0.18
Plumtree	3077	7-30-2016	1910.00	350.72	361.47		361.55	0.000536	3.29	1163.08	245.38	0.20
Plumtree	2978	1-YR	188.00	350.53	354.66	352.88	354.85	0.003392	3.53	53.26	22.32	0.40
Plumtree	2978	2-YR	208.00	350.53	354.86	353.05	355.06	0.003449	3.59	57.98	24.19	0.41
Plumtree	2978	10-YR	613.00	350.53	358.03	355.26	358.23	0.001368	3.76	209.18	73.07	0.29
Plumtree	2978	50-YR	1243.00	350.53	360.39	356.95	360.63	0.001133	4.41	450.12	144.96	0.28
Plumtree	2978	100-YR	1581.00	350.53	360.77	357.70	361.09	0.001458	5.17	508.52	160.58	0.33
Plumtree	2978	7-30-2016	1910.00	350.53	361.02	358.27	361.43	0.001830	5.92	549.07	163.30	0.37
Plumtree	2917	1-YR	188.00	350.36	354.42	352.78	354.64	0.003600	3.78	49.80	19.49	0.42
Plumtree	2917	2-YR	208.00	350.36	354.61	352.92	354.84	0.003647	3.88	53.67	20.40	0.42
Plumtree	2917	10-YR	613.00	350.36	357.93	355.23	358.14	0.001464	3.78	194.76	77.41	0.30
Plumtree	2917	50-YR	1243.00	350.36	360.38	356.85	360.54	0.000881	3.86	632.14	257.35	0.25
Plumtree	2917	100-YR	1581.00	350.36	360.77	357.56	360.98	0.001059	4.38	738.54	278.34	0.28
Plumtree	2917	7-30-2016	1910.00	350.36	361.04	358.26	361.29	0.001277	4.92	813.67	292.32	0.31
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	188.00	350.08	354.18	353.47	354.43	0.007377	4.05	46.73	33.97	0.58
Plumtree	2827	2-YR	208.00	350.08	354.34	353.61	354.59	0.006738	4.04	52.54	38.09	0.56
Plumtree	2827	10-YR	613.00	350.08	355.80	355.02	356.32	0.006218	5.96	115.48	112.59	0.60
Plumtree	2827	50-YR	1243.00	350.08	356.97	356.32	357.49	0.005099	6.69	320.27	158.78	0.57
Plumtree	2827	100-YR	1581.00	350.08	357.49	356.76	358.02	0.004793	7.00	406.88	174.22	0.57
Plumtree	2827	7-30-2016	1910.00	350.08	357.89	357.06	358.45	0.004774	7.38	479.20	185.58	0.57

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	2759	1-YR	188.00	349.32	353.96		354.14	0.002269	3.47	58.92	35.04	0.32
Plumtree	2759	2-YR	208.00	349.32	354.11		354.31	0.002379	3.65	64.97	44.78	0.33
Plumtree	2759	10-YR	613.00	349.32	355.61		355.92	0.003269	5.35	242.86	169.69	0.41
Plumtree	2759	50-YR	1243.00	349.32	356.81		357.11	0.003263	6.13	481.24	223.50	0.42
Plumtree	2759	100-YR	1581.00	349.32	357.37		357.64	0.002996	6.20	611.33	243.16	0.41
Plumtree	2759	7-30-2016	1910.00	349.32	357.79		358.06	0.002970	6.42	716.44	257.95	0.41
Plumtree	2589	1-YR	188.00	349.71	353.56		353.69	0.002960	3.59	96.01	66.17	0.36
Plumtree	2589	2-YR	208.00	349.71	353.72		353.85	0.002853	3.61	107.13	70.57	0.36
Plumtree	2589	10-YR	613.00	349.71	355.13		355.31	0.003448	5.02	265.88	148.41	0.41
Plumtree	2589	50-YR	1243.00	349.71	356.26		356.49	0.003841	6.13	456.38	213.01	0.45
Plumtree	2589	100-YR	1581.00	349.71	356.77		357.03	0.004357	6.92	572.54	239.14	0.49
Plumtree	2589	7-30-2016	1910.00	349.71	357.23		357.48	0.003956	6.91	686.08	253.91	0.47
Plumtree	2485	1-YR	188.00	349.20	352.22	352.10	353.01	0.016727	7.22	29.03	21.70	0.85
Plumtree	2485	2-YR	208.00	349.20	352.37	352.28	353.19	0.016198	7.39	32.56	25.39	0.85
Plumtree	2485	10-YR	613.00	349.20	354.27		354.77	0.007235	7.31	190.09	140.81	0.62
Plumtree	2485	50-YR	1243.00	349.20	355.70		356.04	0.004632	7.09	424.68	187.27	0.52
Plumtree	2485	100-YR	1581.00	349.20	356.28		356.59	0.004037	7.07	538.63	200.15	0.50
Plumtree	2485	7-30-2016	1910.00	349.20	356.79		357.08	0.003626	7.05	641.58	206.55	0.48
Plumtree	2331	1-YR	188.00	348.10	351.50		351.75	0.003886	4.01	47.23	20.97	0.45
Plumtree	2331	2-YR	208.00	348.10	351.71		351.97	0.003697	4.08	51.83	22.66	0.44
Plumtree	2331	10-YR	613.00	348.10	353.63		354.00	0.003356	5.47	196.26	121.77	0.46
Plumtree	2331	50-YR	1243.00	348.10	355.03		355.44	0.003218	6.42	380.99	144.01	0.47
Plumtree	2331	100-YR	1581.00	348.10	355.57		356.01	0.003297	6.90	461.94	154.52	0.48
Plumtree	2331	7-30-2016	1910.00	348.10	356.06		356.52	0.003309	7.25	539.58	164.43	0.49
Plumtree	2153	1-YR	188.00	346.39	351.08		351.25	0.001993	3.35	60.88	21.65	0.29
Plumtree	2153	2-YR	208.00	346.39	351.28		351.47	0.002063	3.50	65.48	23.51	0.30
Plumtree	2153	10-YR	613.00	346.39	353.12		353.42	0.002969	5.15	217.85	114.84	0.37
Plumtree	2153	50-YR	1243.00	346.39	354.49		354.84	0.003315	6.25	395.27	140.34	0.41
Plumtree	2153	100-YR	1581.00	346.39	355.02		355.39	0.003476	6.71	470.48	146.21	0.42
Plumtree	2153	7-30-2016	1910.00	346.39	355.50		355.89	0.003520	7.03	543.18	152.35	0.43
Plumtree	1994	1-YR	188.00	346.45	350.65		350.87	0.002805	3.74	52.67	26.61	0.36
Plumtree	1994	2-YR	208.00	346.45	350.85		351.08	0.002838	3.88	58.47	31.84	0.37
Plumtree	1994	10-YR	613.00	346.45	352.53		352.89	0.003609	5.62	203.94	122.93	0.44
Plumtree	1994	50-YR	1243.00	346.45	353.88		354.28	0.003695	6.65	399.30	166.16	0.46
Plumtree	1994	100-YR	1581.00	346.45	354.45		354.83	0.003515	6.86	496.46	174.03	0.46
Plumtree	1994	7-30-2016	1910.00	346.45	354.97		355.34	0.003334	7.00	588.48	181.98	0.45
Plumtree	1888	1-YR	188.00	345.73	350.31	348.79	350.55	0.003146	4.10	60.85	48.16	0.40
Plumtree	1888	2-YR	208.00	345.73	350.55	348.95	350.78	0.002817	4.07	73.57	56.96	0.38
Plumtree	1888	10-YR	613.00	345.73	352.22	351.39	352.52	0.003118	5.54	235.03	128.56	0.43
Plumtree	1888	50-YR	1243.00	345.73	353.56	352.46	353.89	0.003226	6.57	425.48	155.52	0.45
Plumtree	1888	100-YR	1581.00	345.73	354.11	352.86	354.47	0.003235	6.95	515.34	165.68	0.46
Plumtree	1888	7-30-2016	1910.00	345.73	354.64	353.14	354.99	0.003124	7.17	604.97	174.10	0.46
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	188.00	346.61	350.23		350.32	0.001562	2.83	106.23	71.71	0.29
Plumtree	1830	2-YR	208.00	346.61	350.48		350.57	0.001401	2.79	125.57	82.53	0.28
Plumtree	1830	10-YR	613.00	346.61	352.14		352.26	0.001466	3.71	325.03	151.48	0.30
Plumtree	1830	50-YR	1243.00	346.61	353.44		353.62	0.001709	4.72	526.37	156.22	0.34
Plumtree	1830	100-YR	1581.00	346.61	353.96		354.16	0.001845	5.19	608.03	158.10	0.36
Plumtree	1830	7-30-2016	1910.00	346.61	354.45		354.68	0.001948	5.60	685.98	162.80	0.37
Plumtree	1641	1-YR	188.00	345.19	349.67		349.89	0.003011	3.90	60.73	31.29	0.38
Plumtree	1641	2-YR	208.00	345.19	349.97		350.18	0.002639	3.87	71.93	43.17	0.36
Plumtree	1641	10-YR	613.00	345.19	351.16		351.66	0.005534	6.76	175.18	110.87	0.54
Plumtree	1641	50-YR	1243.00	345.19	352.44		352.97	0.005557	7.93	342.10	145.47	0.57
Plumtree	1641	100-YR	1581.00	345.19	352.98		353.51	0.005326	8.23	424.28	154.60	0.56
Plumtree	1641	7-30-2016	1910.00	345.19	353.56		354.05	0.004729	8.20	516.59	163.97	0.54
Plumtree	1463	1-YR	188.00	343.35	349.52		349.59	0.000850	2.11	110.61	99.03	0.21
Plumtree	1463	2-YR	208.00	343.35	349.87		349.93	0.000655	1.98	149.03	116.96	0.18
Plumtree	1463	10-YR	613.00	343.35	350.91		351.07	0.001614	3.69	286.58	146.19	0.30
Plumtree	1463	50-YR	1243.00	343.35	352.05		352.30	0.002214	5.00	470.11	179.60	0.37
Plumtree	1463	100-YR	1581.00	343.35	352.57		352.84	0.002298	5.39	567.40	192.87	0.38
Plumtree	1463	7-30-2016	1910.00	343.35	353.20		353.46	0.002040	5.41	691.63	203.08	0.36
Plumtree	1291	1-YR	416.00	344.26	349.06		349.23	0.003575	4.12	196.95	221.19	0.41
Plumtree	1291	2-YR	580.00	344.26	349.37		349.56	0.003911	4.59	270.40	239.06	0.44
Plumtree	1291	10-YR	1263.00	344.26	350.42		350.61	0.003624	5.28	565.73	310.89	0.44
Plumtree	1291	50-YR	2272.00	344.26	351.67		351.83	0.002750	5.42	998.31	385.46	0.40
Plumtree	1291	100-YR	2818.00	344.26	352.25		352.40	0.002389	5.38	1232.84	411.53	0.38

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Plumtree	1291	7-30-2016	3535.00	344.26	352.93		353.07	0.002019	5.30	1515.75	419.45	0.35
Plumtree	1124	1-YR	416.00	343.58	348.38		348.59	0.004029	4.53	213.86	244.34	0.45
Plumtree	1124	2-YR	580.00	343.58	348.81		348.96	0.003191	4.30	322.47	261.46	0.41
Plumtree	1124	10-YR	1263.00	343.58	349.99		350.11	0.002337	4.39	641.05	280.47	0.37
Plumtree	1124	50-YR	2272.00	343.58	351.32		351.44	0.001882	4.69	1033.54	309.39	0.34
Plumtree	1124	100-YR	2818.00	343.58	351.92		352.05	0.001769	4.85	1223.63	322.60	0.34
Plumtree	1124	7-30-2016	3535.00	343.58	352.62		352.76	0.001679	5.07	1454.16	333.88	0.33
Plumtree	994	1-YR	416.00	342.85	347.98		348.11	0.003013	3.47	221.97	185.62	0.39
Plumtree	994	2-YR	580.00	342.85	348.47		348.58	0.002459	3.39	320.12	206.41	0.36
Plumtree	994	10-YR	1263.00	342.85	349.67		349.81	0.002199	4.05	583.72	232.94	0.36
Plumtree	994	50-YR	2272.00	342.85	351.02		351.18	0.001962	4.66	923.42	269.41	0.36
Plumtree	994	100-YR	2818.00	342.85	351.63		351.80	0.001897	4.93	1090.55	283.87	0.36
Plumtree	994	7-30-2016	3535.00	342.85	352.33		352.52	0.001841	5.24	1295.79	299.59	0.36
Plumtree	911	1-YR	416.00	342.92	347.69		347.85	0.003058	4.09	220.82	194.64	0.40
Plumtree	911	2-YR	580.00	342.92	348.27		348.39	0.002179	3.76	340.47	213.52	0.34
Plumtree	911	10-YR	1263.00	342.92	349.50		349.63	0.002021	4.37	618.47	237.52	0.35
Plumtree	911	50-YR	2272.00	342.92	350.87		351.02	0.001903	4.99	967.91	271.60	0.35
Plumtree	911	100-YR	2818.00	342.92	351.48		351.64	0.001860	5.25	1137.87	284.77	0.35
Plumtree	911	7-30-2016	3535.00	342.92	352.19		352.37	0.001827	5.55	1345.06	299.29	0.35
Plumtree	762	1-YR	416.00	342.54	347.03		347.30	0.004545	4.70	125.86	82.18	0.49
Plumtree	762	2-YR	580.00	342.54	347.51		347.89	0.005304	5.60	187.49	161.02	0.55
Plumtree	762	10-YR	1263.00	342.54	349.02		349.27	0.002976	5.41	506.37	239.59	0.44
Plumtree	762	50-YR	2272.00	342.54	350.49		350.72	0.002283	5.66	886.57	279.06	0.40
Plumtree	762	100-YR	2818.00	342.54	351.12		351.35	0.002139	5.85	1068.56	295.63	0.39
Plumtree	762	7-30-2016	3535.00	342.54	351.85		352.09	0.002018	6.07	1290.42	311.64	0.39
Plumtree	658	1-YR	416.00	340.20	346.95		347.07	0.000947	2.83	196.91	177.76	0.24
Plumtree	658	2-YR	580.00	340.20	347.47		347.61	0.001038	3.20	301.71	225.63	0.26
Plumtree	658	10-YR	1263.00	340.20	348.92		349.07	0.001037	3.82	702.18	299.30	0.27
Plumtree	658	50-YR	2272.00	340.20	350.40		350.55	0.000972	4.26	1163.55	326.93	0.27
Plumtree	658	100-YR	2818.00	340.20	351.03		351.19	0.000970	4.48	1374.82	340.32	0.27
Plumtree	658	7-30-2016	3535.00	340.20	351.76		351.92	0.000982	4.77	1629.02	358.36	0.28
Plumtree	526	1-YR	416.00	341.63	346.82		346.93	0.001186	2.97	276.91	265.29	0.26
Plumtree	526	2-YR	580.00	341.63	347.38		347.46	0.000982	2.94	427.50	278.70	0.24
Plumtree	526	10-YR	1263.00	341.63	348.85		348.93	0.000828	3.25	861.94	309.81	0.23
Plumtree	526	50-YR	2272.00	341.63	350.32		350.41	0.000801	3.70	1340.39	338.71	0.24
Plumtree	526	100-YR	2818.00	341.63	350.95		351.05	0.000807	3.92	1558.16	349.43	0.24
Plumtree	526	7-30-2016	3535.00	341.63	351.68		351.79	0.000823	4.19	1816.38	361.88	0.25
Plumtree	380	1-YR	416.00	341.92	346.43		346.67	0.002717	4.08	142.24	148.27	0.39
Plumtree	380	2-YR	580.00	341.92	347.04	345.25	347.24	0.002222	4.07	254.64	192.03	0.36
Plumtree	380	10-YR	1263.00	341.92	348.57		348.75	0.001711	4.44	569.24	218.42	0.33
Plumtree	380	50-YR	2272.00	341.92	350.04		350.24	0.001616	5.05	902.71	235.51	0.34
Plumtree	380	100-YR	2818.00	341.92	350.66		350.88	0.001622	5.36	1050.66	240.28	0.34
Plumtree	380	7-30-2016	3535.00	341.92	351.36		351.61	0.001657	5.75	1222.44	245.54	0.35
Plumtree	146	1-YR	416.00	340.73	344.02	344.02	345.21	0.019844	8.77	47.41	20.08	1.01
Plumtree	146	2-YR	580.00	340.73	344.78	344.78	346.05	0.015218	9.06	69.14	43.16	0.92
Plumtree	146	10-YR	1263.00	340.73	346.67	346.67	347.86	0.009274	9.77	217.53	109.52	0.78
Plumtree	146	50-YR	2272.00	340.73	347.94	347.94	349.36	0.009524	11.54	376.77	139.45	0.82
Plumtree	146	100-YR	2818.00	340.73	348.47	348.47	349.98	0.009712	12.30	452.61	150.60	0.84
Plumtree	146	7-30-2016	3535.00	340.73	349.04	349.04	350.68	0.010005	13.19	542.50	160.94	0.86
Plumtree	63	1-YR	416.00	340.00	343.59	342.24	343.82	0.003500	3.90	106.69	43.85	0.44
Plumtree	63	2-YR	580.00	340.00	344.18	342.75	344.47	0.003507	4.33	134.10	49.96	0.45
Plumtree	63	10-YR	1263.00	340.00	345.81	344.14	346.33	0.003506	5.86	239.02	81.21	0.49
Plumtree	63	50-YR	2272.00	340.00	347.44	345.62	348.18	0.003501	7.20	413.78	125.14	0.51
Plumtree	63	100-YR	2818.00	340.00	348.13	346.39	348.95	0.003500	7.73	503.99	136.88	0.52
Plumtree	63	7-30-2016	3535.00	340.00	348.91	347.15	349.83	0.003504	8.32	615.53	147.30	0.53

HEC-RAS Plan: I River: Plumtree Reach: Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	10286	1-YR	396.63	396.59	0.04	1.88	0.01	0.49	50.53	55.98	144.57	0.22
Plumtree	10286	2-YR	396.78	396.71	0.07	2.39	0.01	1.27	79.63	92.10	147.48	0.39
Plumtree	10286	10-YR	397.41	397.29	0.12	2.43	0.02	9.67	178.52	229.81	161.80	0.58
Plumtree	10286	50-YR	398.08	397.89	0.19	2.59	0.03	31.80	322.52	435.68	176.43	0.84
Plumtree	10286	100-YR	398.26	397.99	0.27	2.46	0.01	42.94	404.06	549.00	178.94	1.18
Plumtree	10286	7-30-2016	398.29	398.01	0.29	2.42	0.01	45.56	421.73	573.70	179.29	1.26
Plumtree	10044	1-YR	394.13	394.00	0.13	2.86	0.01		78.13	28.87	100.57	0.57
Plumtree	10044	2-YR	394.37	394.20	0.17	2.66	0.01		121.43	51.57	120.73	0.72
Plumtree	10044	10-YR	394.95	394.62	0.33	2.08	0.02		267.18	150.82	192.42	1.34
Plumtree	10044	50-YR	395.46	394.99	0.47	0.36	0.13	0.04	440.44	349.52	205.20	1.96
Plumtree	10044	100-YR	395.79	395.43	0.36	0.35	0.09	0.70	511.31	483.99	236.81	1.48
Plumtree	10044	7-30-2016	395.86	395.52	0.34	0.35	0.09	0.95	525.54	514.51	242.32	1.41
Plumtree	9814	1-YR	391.26	391.05	0.21	0.83	0.03		107.00		31.73	0.62
Plumtree	9814	2-YR	391.71	391.48	0.24	0.75	0.04		173.00		40.10	0.66
Plumtree	9814	10-YR	392.86	392.61	0.25	0.18	0.04	2.54	413.01	2.45	113.39	0.62
Plumtree	9814	50-YR	394.93	394.88	0.05	0.02	0.00	53.99	502.19	233.81	289.67	0.14
Plumtree	9814	100-YR	395.34	395.29	0.06	0.03	0.00	76.71	603.60	315.69	305.18	0.16
Plumtree	9814	7-30-2016	395.42	395.36	0.06	0.03	0.00	81.98	626.74	332.28	312.10	0.17
Plumtree	9762	1-YR	390.40	389.88	0.51	0.52	0.07		107.00		18.67	1.53
Plumtree	9762	2-YR	390.93	390.32	0.61	0.37	0.10		173.00		23.32	1.70
Plumtree	9762	10-YR	392.64	392.52	0.12	0.06	0.00	0.72	342.45	74.83	155.20	0.32
Plumtree	9762	50-YR	394.91	394.86	0.04	0.02	0.01	32.16	479.34	278.50	259.96	0.12
Plumtree	9762	100-YR	395.31	395.26	0.06	0.02	0.01	48.65	596.24	351.11	292.31	0.16
Plumtree	9762	7-30-2016	395.40	395.34	0.06	0.02	0.01	52.18	617.62	371.20	301.70	0.16
Plumtree	9732	1-YR	389.58	389.31	0.27				107.00		24.41	0.78
Plumtree	9732	2-YR	390.20	389.94	0.26				173.00		28.51	0.67
Plumtree	9732	10-YR	392.58	392.42	0.16			0.69	416.95	0.35	44.29	0.31
Plumtree	9732	50-YR	394.89	394.78	0.11			23.45	646.40	120.14	210.11	0.22
Plumtree	9732	100-YR	395.29	395.16	0.13			36.55	772.87	186.59	226.00	0.27
Plumtree	9732	7-30-2016	395.37	395.23	0.14			39.62	799.49	201.89	229.14	0.28
Plumtree	9650 Michaels Way		Culvert									
Plumtree	9589	1-YR	389.07	389.00	0.07	0.26	0.03	0.00	106.96	0.04	32.41	0.17
Plumtree	9589	2-YR	389.34	389.20	0.14	0.32	0.01	0.05	172.76	0.19	34.58	0.34
Plumtree	9589	10-YR	390.93	390.69	0.24	0.23	0.02	4.02	408.45	5.53	54.19	0.48
Plumtree	9589	50-YR	392.17	391.77	0.40	0.23	0.09	46.63	723.17	20.20	85.01	0.77
Plumtree	9589	100-YR	392.75	392.30	0.45	0.23	0.11	81.36	880.01	34.63	176.61	0.88
Plumtree	9589	7-30-2016	392.90	392.46	0.44	0.22	0.10	89.98	902.70	48.32	222.53	0.86
Plumtree	9499	1-YR	388.78	388.60	0.18	0.41	0.01		151.03	9.97	41.11	0.46
Plumtree	9499	2-YR	389.01	388.84	0.18	0.43	0.01		173.39	14.61	47.40	0.46
Plumtree	9499	10-YR	390.68	390.48	0.20	0.35	0.02	42.74	403.63	112.63	154.34	0.52
Plumtree	9499	50-YR	391.85	391.63	0.22	0.27	0.01	185.76	627.77	264.47	167.28	0.62
Plumtree	9499	100-YR	392.42	392.19	0.23	0.26	0.00	281.36	751.16	356.49	173.12	0.67
Plumtree	9499	7-30-2016	392.57	392.34	0.24	0.25	0.00	310.34	785.40	383.26	174.48	0.68
Plumtree	9398	1-YR	388.36	388.12	0.24	0.26	0.02		161.00		15.33	0.53
Plumtree	9398	2-YR	388.57	388.28	0.29	0.31	0.03		188.00		15.67	0.64
Plumtree	9398	10-YR	390.30	389.92	0.39	0.56	0.03	82.72	409.89	66.39	158.33	1.00
Plumtree	9398	50-YR	391.57	391.30	0.27	0.49	0.08	315.76	536.24	226.00	179.70	0.88
Plumtree	9398	100-YR	392.16	391.90	0.26	0.47	0.10	451.01	611.66	326.34	184.74	0.90
Plumtree	9398	7-30-2016	392.32	392.05	0.26	0.47	0.10	492.35	635.01	351.64	187.35	0.92
Plumtree	9301	1-YR	388.08	387.92	0.16	0.47	0.04	3.29	157.71		31.16	0.34
Plumtree	9301	2-YR	388.24	388.04	0.20	0.47	0.02	5.20	182.80		32.07	0.42
Plumtree	9301	10-YR	389.71	388.98	0.73	0.79	0.11	46.04	484.92	28.03	86.84	1.61
Plumtree	9301	50-YR	391.00	389.88	1.12	0.81	0.23	126.96	789.74	161.29	97.61	2.68
Plumtree	9301	100-YR	391.59	390.34	1.24	0.82	0.26	182.70	942.00	264.31	102.09	3.10
Plumtree	9301	7-30-2016	391.74	390.46	1.28	0.82	0.27	199.31	984.64	295.04	103.24	3.22
Plumtree	9196	1-YR	387.57	386.98	0.59	0.99	0.14	0.07	160.93		40.31	1.50
Plumtree	9196	2-YR	387.75	387.33	0.42	0.88	0.09	14.52	172.34	1.14	104.88	1.10
Plumtree	9196	10-YR	388.81	388.45	0.36	0.93	0.05	200.32	316.15	42.53	139.59	1.25
Plumtree	9196	50-YR	389.85	389.50	0.35	0.99	0.02	470.06	468.90	139.04	152.02	1.36
Plumtree	9196	100-YR	390.35	389.98	0.38	1.04	0.00	634.93	555.88	198.19	156.58	1.47
Plumtree	9196	7-30-2016	390.49	390.11	0.38	1.05	0.00	682.71	580.65	215.64	157.92	1.50
Plumtree	8987	1-YR	386.44	386.32	0.12	0.95	0.03	9.07	131.62	20.31	109.52	0.33
Plumtree	8987	2-YR	386.59	386.46	0.13	0.97	0.03	13.41	145.20	29.39	114.36	0.36
Plumtree	8987	10-YR	387.84	387.64	0.20	1.10	0.02	83.38	296.77	178.85	128.91	0.66
Plumtree	8987	50-YR	388.85	388.55	0.30	1.07	0.01	198.99	478.30	400.71	139.39	1.08
Plumtree	8987	100-YR	389.31	388.95	0.36	1.01	0.04	274.84	578.81	535.35	143.20	1.31
Plumtree	8987	7-30-2016	389.44	389.06	0.38	0.99	0.05	297.50	606.76	574.75	144.25	1.37
Plumtree	8753	1-YR	385.47	385.06	0.41	1.25	0.06	22.66	137.94	0.41	74.14	1.13

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	8753	2-YR	385.59	385.18	0.41	1.18	0.06	36.52	150.30	1.18	78.27	1.18
Plumtree	8753	10-YR	386.72	386.32	0.40	0.91	0.06	268.11	267.06	23.83	130.25	1.49
Plumtree	8753	50-YR	387.77	387.49	0.28	0.77	0.00	671.10	347.30	59.61	206.98	1.30
Plumtree	8753	100-YR	388.27	388.04	0.23	0.70	0.01	947.22	367.50	74.28	238.38	1.12
Plumtree	8753	7-30-2016	388.40	388.18	0.22	0.68	0.01	1023.73	374.18	81.09	242.65	1.09
Plumtree	8579	1-YR	384.15	383.94	0.21	0.50	0.04	31.04	128.01	1.95	83.78	0.62
Plumtree	8579	2-YR	384.31	384.11	0.20	0.49	0.03	44.38	139.09	4.52	88.15	0.61
Plumtree	8579	10-YR	385.75	385.55	0.20	0.55	0.01	220.41	272.95	65.64	113.83	0.72
Plumtree	8579	50-YR	386.99	386.72	0.27	0.63	0.00	463.22	441.47	173.31	135.09	0.98
Plumtree	8579	100-YR	387.56	387.25	0.31	0.68	0.00	613.35	536.25	239.39	146.66	1.13
Plumtree	8579	7-30-2016	387.71	387.40	0.32	0.69	0.00	655.98	561.51	261.51	148.92	1.17
Plumtree	8374	1-YR	383.62	383.54	0.08	0.44	0.05	34.78	126.22		83.71	0.21
Plumtree	8374	2-YR	383.79	383.70	0.08	0.45	0.05	47.29	140.71		86.04	0.23
Plumtree	8374	10-YR	385.19	385.03	0.16	0.55	0.03	239.05	319.79	0.16	106.38	0.48
Plumtree	8374	50-YR	386.35	386.10	0.25	0.65	0.03	537.18	535.40	5.42	120.53	0.78
Plumtree	8374	100-YR	386.88	386.57	0.31	0.69	0.03	721.05	656.02	11.93	126.00	0.95
Plumtree	8374	7-30-2016	387.02	386.69	0.32	0.70	0.03	774.75	690.26	13.99	127.86	0.99
Plumtree	8229	1-YR	383.13	382.59	0.54	1.07	0.07	13.54	143.31	4.15	53.85	1.40
Plumtree	8229	2-YR	383.29	382.76	0.54	1.15	0.05	23.94	157.94	6.12	61.25	1.44
Plumtree	8229	10-YR	384.61	384.13	0.48	1.25	0.02	193.24	288.67	77.10	105.72	1.68
Plumtree	8229	50-YR	385.68	385.11	0.56	1.36	0.02	430.96	433.23	213.81	132.26	2.21
Plumtree	8229	100-YR	386.17	385.59	0.58	1.41	0.03	579.26	500.35	309.38	138.88	2.37
Plumtree	8229	7-30-2016	386.29	385.70	0.59	1.42	0.03	621.62	520.99	336.39	140.40	2.45
Plumtree	8094	1-YR	381.86	381.54	0.32	0.79	0.07	6.04	154.64	0.32	50.28	0.76
Plumtree	8094	2-YR	382.03	381.65	0.37	0.86	0.08	9.92	176.88	1.20	58.89	0.90
Plumtree	8094	10-YR	383.35	382.69	0.65	1.16	0.15	112.60	379.49	66.92	116.62	1.91
Plumtree	8094	50-YR	384.29	383.50	0.79	1.33	0.17	290.75	567.25	220.00	141.20	2.67
Plumtree	8094	100-YR	384.72	383.81	0.91	1.42	0.20	394.34	672.32	322.34	148.44	3.21
Plumtree	8094	7-30-2016	384.84	383.91	0.92	1.43	0.20	426.38	697.50	355.11	150.86	3.29
Plumtree	7954	1-YR	381.00	380.90	0.10	1.17	0.01	65.58	66.87	28.54	153.64	0.52
Plumtree	7954	2-YR	381.09	380.98	0.10	1.19	0.01	77.38	72.91	37.71	155.05	0.56
Plumtree	7954	10-YR	381.91	381.76	0.15	1.30	0.00	238.10	143.66	177.24	168.15	0.95
Plumtree	7954	50-YR	382.68	382.46	0.22	1.32	0.01	463.40	228.49	386.11	184.12	1.37
Plumtree	7954	100-YR	383.06	382.81	0.25	1.31	0.01	605.49	273.59	509.92	189.57	1.56
Plumtree	7954	7-30-2016	383.17	382.90	0.26	1.30	0.01	646.96	286.25	545.79	191.04	1.61
Plumtree	7800	1-YR	379.82	379.75	0.07	1.29	0.00	36.59	42.44	81.96	170.75	0.56
Plumtree	7800	2-YR	379.88	379.81	0.07	1.27	0.01	43.55	47.90	96.55	172.32	0.61
Plumtree	7800	10-YR	380.60	380.46	0.14	1.11	0.03	147.15	115.39	296.47	184.87	1.01
Plumtree	7800	50-YR	381.36	381.16	0.20	0.96	0.04	303.50	201.77	572.73	196.11	1.31
Plumtree	7800	100-YR	381.75	381.52	0.23	0.95	0.05	400.93	251.62	736.45	201.92	1.44
Plumtree	7800	7-30-2016	381.86	381.62	0.23	0.92	0.05	429.72	265.73	783.55	203.60	1.47
Plumtree	7548	1-YR	378.52	378.46	0.05	0.93	0.00	26.14	56.69	78.18	269.81	0.32
Plumtree	7548	2-YR	378.60	378.55	0.05	0.92	0.00	38.35	59.99	89.66	271.87	0.33
Plumtree	7548	10-YR	379.46	379.41	0.05	0.66	0.00	231.32	97.91	229.78	291.99	0.39
Plumtree	7548	50-YR	380.35	380.30	0.06	0.52	0.00	525.25	140.65	412.10	310.70	0.43
Plumtree	7548	100-YR	380.75	380.69	0.06	0.46	0.00	701.24	165.87	521.89	315.96	0.48
Plumtree	7548	7-30-2016	380.89	380.82	0.06	0.42	0.00	754.24	171.90	552.86	317.79	0.48
Plumtree	7367	1-YR	377.59	377.54	0.05	0.60	0.01	0.02		160.98	103.00	
Plumtree	7367	2-YR	377.69	377.63	0.06	0.60	0.01	0.27		187.73	111.46	
Plumtree	7367	10-YR	378.81	378.74	0.07	0.25	0.01	59.74	1.15	498.11	214.23	0.08
Plumtree	7367	50-YR	379.83	379.77	0.06	0.23	0.00	231.34	21.93	824.73	386.86	0.24
Plumtree	7367	100-YR	380.29	380.23	0.05	0.22	0.00	359.04	36.71	993.25	405.62	0.26
Plumtree	7367	7-30-2016	380.46	380.41	0.05	0.20	0.00	403.54	41.76	1033.70	408.85	0.26
Plumtree	7216	1-YR	376.98	376.95	0.03	0.80	0.02	44.35	103.57	13.08	185.13	0.13
Plumtree	7216	2-YR	377.07	377.04	0.04	0.82	0.02	52.39	118.73	16.88	190.55	0.14
Plumtree	7216	10-YR	378.55	378.51	0.03	0.13	0.00	172.41	287.11	99.48	260.49	0.12
Plumtree	7216	50-YR	379.60	379.55	0.05	0.15	0.00	346.84	506.06	225.09	293.30	0.17
Plumtree	7216	100-YR	380.07	380.01	0.06	0.17	0.00	455.11	631.92	301.97	307.22	0.20
Plumtree	7216	7-30-2016	380.27	380.20	0.06	0.16	0.00	491.32	663.03	324.65	311.39	0.20
Plumtree	7030	1-YR	376.15	375.92	0.23	1.07	0.02	83.58	72.64	4.78	147.40	1.24
Plumtree	7030	2-YR	376.22	375.97	0.25	1.06	0.02	101.60	80.01	6.39	150.75	1.40
Plumtree	7030	10-YR	378.41	378.39	0.02	0.04	0.00	393.85	76.69	88.46	220.14	0.15
Plumtree	7030	50-YR	379.44	379.40	0.04	0.06	0.00	759.08	126.40	192.52	233.60	0.25
Plumtree	7030	100-YR	379.90	379.85	0.05	0.08	0.00	985.60	156.15	247.25	243.53	0.31
Plumtree	7030	7-30-2016	380.10	380.05	0.05	0.08	0.00	1056.66	164.34	258.00	251.65	0.31
Plumtree	6893	1-YR	374.17	373.99	0.18	0.70	0.00	28.19	131.50	1.31	102.10	0.52
Plumtree	6893	2-YR	374.30	374.13	0.17	0.39	0.02	41.66	144.19	2.15	106.83	0.53
Plumtree	6893	10-YR	378.37	378.35	0.01	0.01	0.00	315.53	175.13	68.34	226.67	0.05
Plumtree	6893	50-YR	379.38	379.35	0.03	0.03	0.00	628.48	306.26	143.27	245.58	0.12

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	6893	100-YR	379.82	379.78	0.04	0.04	0.00	818.32	380.49	190.19	253.64	0.16
Plumtree	6893	7-30-2016	380.02	379.98	0.04	0.04	0.00	875.05	398.74	205.21	257.48	0.16
Plumtree	6766	1-YR	373.46	373.26	0.21	0.36	0.02	14.01	146.96	0.03	88.73	0.58
Plumtree	6766	2-YR	373.88	373.79	0.09	0.15	0.00	43.36	143.51	1.12	104.66	0.27
Plumtree	6766	10-YR	378.35	378.34	0.01	0.01	0.00	277.18	206.24	75.57	272.11	0.04
Plumtree	6766	50-YR	379.35	379.32	0.02	0.02	0.00	539.85	368.47	169.68	319.86	0.09
Plumtree	6766	100-YR	379.78	379.75	0.03	0.02	0.00	705.91	459.38	223.71	343.38	0.12
Plumtree	6766	7-30-2016	379.98	379.95	0.03	0.02	0.00	752.11	479.80	247.09	350.79	0.12
Plumtree	6663	1-YR	373.08	372.94	0.14	0.25	0.01	3.74	157.26		61.85	0.31
Plumtree	6663	2-YR	373.73	373.65	0.08	0.12	0.00	27.83	160.07	0.10	98.22	0.18
Plumtree	6663	10-YR	378.34	378.33	0.01	0.01	0.00	275.38	192.98	90.64	322.55	0.03
Plumtree	6663	50-YR	379.33	379.31	0.02	0.02	0.00	546.12	322.46	209.43	342.72	0.07
Plumtree	6663	100-YR	379.75	379.73	0.02	0.02	0.00	708.23	394.52	286.24	351.05	0.09
Plumtree	6663	7-30-2016	379.96	379.93	0.02	0.02	0.00	756.12	410.56	312.33	355.39	0.10
Plumtree	6568	1-YR	372.82	372.61	0.21	0.39	0.01	10.48	156.52		47.95	0.48
Plumtree	6568	2-YR	373.60	373.48	0.12	0.16	0.00	42.46	166.48	5.05	93.77	0.31
Plumtree	6568	10-YR	378.33	378.32	0.01	0.01	0.00	318.63	167.43	139.94	275.41	0.05
Plumtree	6568	50-YR	379.31	379.29	0.02	0.02	0.00	647.91	284.34	286.75	297.81	0.11
Plumtree	6568	100-YR	379.73	379.70	0.03	0.03	0.00	840.12	348.52	377.35	309.71	0.15
Plumtree	6568	7-30-2016	379.93	379.90	0.04	0.04	0.00	939.24	380.88	425.88	316.24	0.17
Plumtree	6454	1-YR	372.43	372.24	0.19	0.21	0.03	0.28	166.19	0.52	32.40	0.44
Plumtree	6454	2-YR	373.44	373.33	0.11	0.10	0.01	7.63	198.05	8.31	65.19	0.24
Plumtree	6454	10-YR	378.32	378.31	0.01	0.01	0.00	116.55	254.43	255.02	226.90	0.04
Plumtree	6454	50-YR	379.29	379.25	0.03	0.03	0.01	239.93	453.87	525.20	261.09	0.11
Plumtree	6454	100-YR	379.70	379.65	0.05	0.04	0.01	316.01	564.11	685.88	275.78	0.15
Plumtree	6454	7-30-2016	379.90	379.84	0.05	0.05	0.01	356.30	619.62	770.07	283.75	0.17
Plumtree	6350	1-YR	372.19	372.10	0.09	0.09	0.01		167.00		24.64	0.19
Plumtree	6350	2-YR	373.33	373.25	0.07	0.05	0.00		213.84	0.16	30.84	0.14
Plumtree	6350	10-YR	378.31	378.26	0.05	0.01	0.00	109.67	480.06	36.26	211.75	0.09
Plumtree	6350	50-YR	379.25	379.14	0.11	0.03	0.01	260.13	859.56	99.31	250.16	0.23
Plumtree	6350	100-YR	379.65	379.49	0.15	0.05	0.01	359.54	1064.32	142.14	265.36	0.32
Plumtree	6350	7-30-2016	379.84	379.66	0.18	0.05	0.01	415.62	1164.70	165.68	271.51	0.36
Plumtree	6296	1-YR	372.09	371.93	0.16			20.83	146.17	0.00	25.88	0.37
Plumtree	6296	2-YR	373.27	373.16	0.11			38.48	174.28	1.24	33.89	0.25
Plumtree	6296	10-YR	378.29	378.21	0.07			223.31	357.35	45.34	151.06	0.18
Plumtree	6296	50-YR	379.21	379.01	0.19			506.05	643.80	69.15	208.73	0.50
Plumtree	6296	100-YR	379.59	379.33	0.26			674.57	789.00	102.43	233.86	0.70
Plumtree	6296	7-30-2016	379.77	379.48	0.30			763.29	859.43	123.28	243.80	0.80
Plumtree	6250 Hearthstone Rd		Culvert									
Plumtree	6197	1-YR	370.62	370.57	0.05	0.10	0.20	0.06	166.91	0.02	29.40	0.09
Plumtree	6197	2-YR	371.16	371.11	0.06	0.11	0.29	0.33	213.52	0.14	30.92	0.11
Plumtree	6197	10-YR	373.49	373.29	0.20	0.17	0.25	7.77	614.45	3.79	37.12	0.33
Plumtree	6197	50-YR	375.41	374.96	0.45	0.25	0.30	23.76	1181.71	13.53	52.75	0.69
Plumtree	6197	100-YR	376.23	375.62	0.61	0.29	0.31	38.23	1502.11	25.66	70.25	0.93
Plumtree	6197	7-30-2016	376.62	375.93	0.69	0.31	0.31	50.74	1661.15	34.11	78.34	1.04
Plumtree	6122	1-YR	370.31	369.59	0.72	0.54	0.17		167.00		11.74	1.76
Plumtree	6122	2-YR	370.76	369.74	1.02	0.52	0.27		214.00		12.95	2.50
Plumtree	6122	10-YR	373.08	372.06	1.02	0.21	0.28	16.72	569.15	40.13	43.57	2.22
Plumtree	6122	50-YR	374.86	373.41	1.45	0.27	0.39	101.62	982.13	135.24	75.54	3.16
Plumtree	6122	100-YR	375.63	373.98	1.65	0.30	0.44	176.82	1193.87	195.32	79.58	3.62
Plumtree	6122	7-30-2016	375.99	374.26	1.73	0.31	0.46	218.93	1298.73	228.34	86.23	3.82
Plumtree	6028	1-YR	369.59	369.45	0.14	0.40	0.01	23.24	142.99	0.77	64.76	0.37
Plumtree	6028	2-YR	369.97	369.83	0.14	0.36	0.02	41.91	169.62	2.47	73.48	0.36
Plumtree	6028	10-YR	372.59	372.49	0.09	0.12	0.01	236.21	336.98	52.81	149.72	0.28
Plumtree	6028	50-YR	373.80	373.65	0.15	0.19	0.02	534.43	551.81	132.76	204.75	0.47
Plumtree	6028	100-YR	374.36	374.18	0.18	0.22	0.03	718.78	662.48	184.74	216.80	0.56
Plumtree	6028	7-30-2016	374.63	374.44	0.19	0.23	0.03	814.72	717.15	214.13	223.00	0.61
Plumtree	5926	1-YR	369.18	368.89	0.29	0.99	0.03	35.58	131.23	0.20	29.86	0.79
Plumtree	5926	2-YR	369.59	369.26	0.33	0.51	0.03	47.92	164.17	1.91	38.48	0.90
Plumtree	5926	10-YR	372.46	372.29	0.17	0.12	0.01	198.74	290.01	137.25	154.50	0.53
Plumtree	5926	50-YR	373.59	373.25	0.34	0.21	0.03	374.85	495.81	348.35	164.27	1.10
Plumtree	5926	100-YR	374.12	373.68	0.44	0.25	0.04	473.93	605.64	486.43	168.66	1.42
Plumtree	5926	7-30-2016	374.37	373.89	0.49	0.27	0.05	524.35	660.28	561.37	170.75	1.59
Plumtree	5824	1-YR	368.15	367.51	0.63	0.41	0.15		167.00		17.95	1.66
Plumtree	5824	2-YR	369.04	368.82	0.22	0.15	0.04		214.00	0.00	28.30	0.53
Plumtree	5824	10-YR	372.32	372.19	0.13	0.06	0.00	54.53	508.52	62.95	158.35	0.27
Plumtree	5824	50-YR	373.35	373.11	0.24	0.12	0.01	154.93	860.23	203.84	167.91	0.54
Plumtree	5824	100-YR	373.83	373.53	0.30	0.15	0.02	220.94	1045.96	299.10	172.27	0.68

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5824	7-30-2016	374.06	373.73	0.33	0.17	0.02	256.77	1138.05	351.18	174.38	0.75
Plumtree	5745	1-YR	367.59	367.44	0.15	0.06	0.02		167.00		22.00	0.33
Plumtree	5745	2-YR	368.85	368.76	0.10	0.03	0.01		213.46	0.54	32.47	0.19
Plumtree	5745	10-YR	372.26	372.14	0.12	0.02	0.01	39.16	544.43	42.41	101.15	0.23
Plumtree	5745	50-YR	373.22	372.89	0.33	0.04	0.02	112.22	1015.44	91.34	117.73	0.61
Plumtree	5745	100-YR	373.66	373.17	0.49	0.06	0.03	161.10	1284.26	120.64	134.53	0.90
Plumtree	5745	7-30-2016	373.86	373.29	0.58	0.07	0.04	187.37	1422.73	135.90	141.91	1.06
Plumtree	5711	1-YR	367.51	367.42	0.09				167.00		23.14	0.20
Plumtree	5711	2-YR	368.82	368.75	0.07				211.40	2.60	38.57	0.13
Plumtree	5711	10-YR	372.24	372.14	0.10			26.64	528.18	71.18	123.53	0.19
Plumtree	5711	50-YR	373.16	372.89	0.28			74.68	981.17	163.16	169.35	0.51
Plumtree	5711	100-YR	373.57	373.17	0.39			111.44	1229.95	224.61	179.51	0.74
Plumtree	5711	7-30-2016	373.75	373.30	0.45			131.68	1348.49	265.83	182.19	0.86
Plumtree	5650 Brookmede Rd		Culvert									
Plumtree	5614	1-YR	366.33	366.27	0.06	0.06	0.01		167.00		28.57	0.14
Plumtree	5614	2-YR	366.86	366.78	0.08	0.06	0.01		214.00		30.53	0.15
Plumtree	5614	10-YR	371.36	371.31	0.05	0.01	0.00	93.56	493.26	39.18	178.37	0.10
Plumtree	5614	50-YR	372.67	372.57	0.10	0.02	0.02	210.60	855.68	152.71	220.23	0.20
Plumtree	5614	100-YR	373.14	373.01	0.13	0.02	0.03	279.73	1055.80	230.47	235.27	0.27
Plumtree	5614	7-30-2016	373.37	373.22	0.15	0.03	0.03	323.82	1149.18	273.00	238.69	0.31
Plumtree	5560	1-YR	366.27	366.17	0.10	0.12	0.02		167.00		24.26	0.21
Plumtree	5560	2-YR	366.79	366.68	0.11	0.12	0.02		214.00		26.36	0.23
Plumtree	5560	10-YR	371.34	371.30	0.04	0.02	0.01	143.57	413.35	69.08	273.40	0.09
Plumtree	5560	50-YR	372.63	372.57	0.06	0.02	0.01	384.53	644.61	189.86	315.05	0.16
Plumtree	5560	100-YR	373.09	373.01	0.08	0.03	0.01	520.97	778.24	266.79	332.47	0.20
Plumtree	5560	7-30-2016	373.31	373.22	0.08	0.03	0.01	594.14	843.30	308.56	341.22	0.23
Plumtree	5510	1-YR	366.12	365.80	0.32	0.06	0.01		167.00		16.24	0.75
Plumtree	5510	2-YR	366.64	366.29	0.35	0.05	0.01		214.00		17.76	0.78
Plumtree	5510	10-YR	371.32	371.22	0.09	0.01	0.02	91.96	440.74	93.30	220.73	0.21
Plumtree	5510	50-YR	372.60	372.45	0.15	0.01	0.04	245.27	708.25	265.48	249.99	0.37
Plumtree	5510	100-YR	373.04	372.85	0.19	0.01	0.05	332.69	857.00	376.32	255.74	0.48
Plumtree	5510	7-30-2016	373.26	373.05	0.21	0.01	0.05	379.55	929.55	436.90	258.53	0.54
Plumtree	5500 Driveway		Bridge									
Plumtree	5474	1-YR	365.88	365.72	0.16	0.14	0.01		167.00		18.67	0.35
Plumtree	5474	2-YR	366.40	366.21	0.19	0.15	0.01		214.00		20.13	0.40
Plumtree	5474	10-YR	371.25	371.17	0.08	0.02	0.00	112.80	458.64	54.55	172.17	0.16
Plumtree	5474	50-YR	372.49	372.35	0.14	0.04	0.00	288.36	761.14	169.50	203.13	0.32
Plumtree	5474	100-YR	372.91	372.72	0.18	0.05	0.00	388.65	929.54	247.80	207.62	0.43
Plumtree	5474	7-30-2016	373.11	372.91	0.20	0.06	0.00	442.15	1012.33	291.52	209.81	0.48
Plumtree	5419	1-YR	365.72	365.52	0.20	0.32	0.00		167.00		16.97	0.44
Plumtree	5419	2-YR	366.23	366.00	0.24	0.33	0.00		214.00		18.09	0.50
Plumtree	5419	10-YR	371.22	371.15	0.07	0.03	0.01	115.88	412.63	97.49	191.70	0.16
Plumtree	5419	50-YR	372.45	372.31	0.13	0.05	0.02	296.58	695.24	227.17	221.17	0.33
Plumtree	5419	100-YR	372.85	372.67	0.18	0.07	0.02	399.61	851.50	314.89	225.42	0.45
Plumtree	5419	7-30-2016	373.05	372.85	0.20	0.08	0.02	454.61	928.48	362.91	227.39	0.51
Plumtree	5323	1-YR	365.40	365.18	0.23	0.59	0.02		167.00		17.40	0.51
Plumtree	5323	2-YR	365.91	365.65	0.26	0.59	0.02	0.28	213.72		29.63	0.57
Plumtree	5323	10-YR	371.19	371.15	0.03	0.02	0.00	239.05	319.57	67.38	150.56	0.09
Plumtree	5323	50-YR	372.38	372.30	0.08	0.04	0.01	495.66	562.27	161.07	167.21	0.21
Plumtree	5323	100-YR	372.76	372.65	0.11	0.06	0.01	648.95	702.84	214.21	173.20	0.30
Plumtree	5323	7-30-2016	372.95	372.83	0.13	0.07	0.01	730.03	773.20	242.77	175.93	0.35
Plumtree	5209	1-YR	364.80	364.40	0.40	0.91	0.01		167.00		14.02	0.92
Plumtree	5209	2-YR	365.29	364.83	0.46	0.84	0.00		214.00		15.03	1.04
Plumtree	5209	10-YR	371.16	371.13	0.03	0.02	0.00	236.36	258.95	130.70	169.35	0.08
Plumtree	5209	50-YR	372.33	372.27	0.06	0.05	0.01	496.87	447.75	274.37	196.33	0.19
Plumtree	5209	100-YR	372.69	372.61	0.08	0.06	0.01	639.85	562.69	363.46	206.06	0.27
Plumtree	5209	7-30-2016	372.87	372.77	0.10	0.07	0.01	714.13	620.91	410.97	211.12	0.32
Plumtree	5107	1-YR	363.87	363.35	0.52	0.67	0.03		167.00		13.92	1.24
Plumtree	5107	2-YR	364.45	363.96	0.49	0.44	0.05		214.00		16.58	1.13
Plumtree	5107	10-YR	371.13	371.07	0.06	0.02	0.00	38.66	468.27	119.07	227.77	0.12
Plumtree	5107	50-YR	372.28	372.13	0.14	0.03	0.01	161.29	821.72	235.99	278.67	0.29
Plumtree	5107	100-YR	372.62	372.41	0.20	0.05	0.01	233.34	1027.74	304.92	299.06	0.42
Plumtree	5107	7-30-2016	372.78	372.55	0.24	0.05	0.01	275.10	1130.18	340.72	306.59	0.49
Plumtree	5040	1-YR	363.17	362.76	0.42				167.00		16.19	1.00
Plumtree	5040	2-YR	363.95	363.64	0.31				214.00		19.39	0.69
Plumtree	5040	10-YR	371.12	371.06	0.06			71.43	527.95	26.63	232.69	0.11
Plumtree	5040	50-YR	372.24	372.12	0.12			253.48	881.69	83.83	285.24	0.23

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	5040	100-YR	372.56	372.40	0.16			363.94	1084.34	117.73	294.23	0.32
Plumtree	5040	7-30-2016	372.72	372.53	0.19			414.00	1194.58	137.42	310.08	0.38
Plumtree	5000 Longview Dr		Culvert									
Plumtree	4932	1-YR	362.28	362.01	0.27	0.26	0.07		167.00		19.56	0.64
Plumtree	4932	2-YR	362.88	362.62	0.26	0.22	0.05		214.00		21.55	0.58
Plumtree	4932	10-YR	368.57	368.43	0.14	0.03	0.05	5.60	610.21	10.19	50.08	0.22
Plumtree	4932	50-YR	372.11	371.98	0.13	0.02	0.03	212.09	930.28	76.63	230.66	0.22
Plumtree	4932	100-YR	372.47	372.30	0.18	0.03	0.04	302.70	1150.41	112.89	239.18	0.31
Plumtree	4932	7-30-2016	372.63	372.42	0.20	0.04	0.05	351.42	1262.72	131.86	241.32	0.37
Plumtree	4845	1-YR	361.95	361.81	0.14	0.19	0.01		167.00		19.72	0.30
Plumtree	4845	2-YR	362.60	362.45	0.15	0.17	0.01		214.00		21.32	0.31
Plumtree	4845	10-YR	368.50	368.45	0.05	0.01	0.01	152.79	457.31	15.90	117.60	0.10
Plumtree	4845	50-YR	372.05	371.99	0.06	0.01	0.01	373.45	748.92	96.63	175.11	0.12
Plumtree	4845	100-YR	372.40	372.31	0.09	0.01	0.02	485.70	948.20	132.10	183.31	0.18
Plumtree	4845	7-30-2016	372.54	372.44	0.11	0.01	0.03	543.95	1051.07	150.98	186.41	0.21
Plumtree	4745	1-YR	361.75	361.63	0.12	0.15	0.01		167.00		25.76	0.26
Plumtree	4745	2-YR	362.42	362.31	0.11	0.12	0.01		214.00		29.18	0.24
Plumtree	4745	10-YR	368.48	368.46	0.01	0.01	0.00	117.87	313.17	194.96	270.77	0.03
Plumtree	4745	50-YR	372.03	372.02	0.01	0.00	0.00	277.34	460.64	481.01	325.82	0.03
Plumtree	4745	100-YR	372.37	372.35	0.01	0.00	0.00	360.92	581.53	623.55	332.90	0.04
Plumtree	4745	7-30-2016	372.50	372.49	0.02	0.01	0.00	404.72	644.43	696.85	336.26	0.05
Plumtree	4636	1-YR	361.59	361.51	0.08	0.09	0.00		167.00		23.61	0.17
Plumtree	4636	2-YR	362.29	362.20	0.09	0.08	0.00	0.03	213.97		26.60	0.17
Plumtree	4636	10-YR	368.47	368.46	0.01	0.01	0.00	49.46	238.55	337.99	374.26	0.02
Plumtree	4636	50-YR	372.02	372.02	0.01	0.00	0.00	170.09	326.24	722.67	518.71	0.02
Plumtree	4636	100-YR	372.36	372.35	0.01	0.00	0.00	225.85	407.66	932.49	528.49	0.03
Plumtree	4636	7-30-2016	372.49	372.49	0.01	0.00	0.00	254.92	449.70	1041.38	532.39	0.03
Plumtree	4550	1-YR	361.51	361.43	0.08				167.00		26.59	0.17
Plumtree	4550	2-YR	362.21	362.13	0.08				213.95	0.05	33.28	0.16
Plumtree	4550	10-YR	368.46	368.42	0.04			63.20	507.44	55.36	384.36	0.07
Plumtree	4550	50-YR	372.02	372.02	0.00			148.44	351.74	718.81	498.58	0.02
Plumtree	4550	100-YR	372.36	372.35	0.01			196.84	440.83	928.32	521.40	0.02
Plumtree	4550	7-30-2016	372.49	372.48	0.01			222.19	486.81	1037.00	540.50	0.03
Plumtree	4400 US 40		Culvert									
Plumtree	4344	1-YR	359.40	359.37	0.02	0.01	0.00		167.00		27.58	0.04
Plumtree	4344	2-YR	359.60	359.56	0.04	0.01	0.00		214.00		27.87	0.06
Plumtree	4344	10-YR	361.66	361.51	0.16	0.04	0.02	0.04	625.65	0.31	48.49	0.26
Plumtree	4344	50-YR	363.19	362.83	0.36	0.07	0.06	15.13	1170.22	33.64	108.13	0.59
Plumtree	4344	100-YR	363.85	363.38	0.47	0.08	0.09	36.32	1451.12	78.57	125.56	0.78
Plumtree	4344	7-30-2016	364.38	363.92	0.46	0.07	0.09	61.25	1552.16	132.60	136.91	0.77
Plumtree	4289	1-YR	359.38	359.36	0.02	0.05	0.02		167.00		33.33	0.04
Plumtree	4289	2-YR	359.58	359.55	0.03	0.07	0.02		214.00		34.03	0.06
Plumtree	4289	10-YR	361.61	361.49	0.12	0.16	0.04		622.23	3.77	64.30	0.21
Plumtree	4289	50-YR	363.06	362.82	0.25	0.19	0.01	42.01	1125.18	51.81	157.35	0.42
Plumtree	4289	100-YR	363.69	363.39	0.30	0.18	0.00	87.78	1374.05	104.17	171.58	0.52
Plumtree	4289	7-30-2016	364.21	363.94	0.28	0.16	0.00	138.90	1452.94	154.16	179.21	0.50
Plumtree	4185	1-YR	359.31	359.08	0.23	0.55	0.01		188.00		21.66	0.54
Plumtree	4185	2-YR	359.50	359.25	0.25	0.56	0.01		208.00		22.23	0.56
Plumtree	4185	10-YR	361.41	360.90	0.51	0.54	0.09	52.98	560.02	0.00	116.66	1.12
Plumtree	4185	50-YR	362.86	362.50	0.36	0.32	0.06	381.33	801.06	60.61	222.58	0.94
Plumtree	4185	100-YR	363.50	363.20	0.30	0.29	0.04	561.64	882.95	136.41	252.34	0.85
Plumtree	4185	7-30-2016	364.05	363.78	0.27	0.25	0.04	730.36	960.76	218.88	276.74	0.80
Plumtree	4033	1-YR	358.75	358.54	0.21	0.48	0.02		188.00		20.63	0.46
Plumtree	4033	2-YR	358.93	358.71	0.22	0.48	0.02		208.00		21.12	0.48
Plumtree	4033	10-YR	360.78	360.55	0.23	0.30	0.01	7.13	434.84	171.04	163.08	0.59
Plumtree	4033	50-YR	362.48	362.31	0.16	0.14	0.01	90.76	605.71	546.54	260.25	0.51
Plumtree	4033	100-YR	363.17	363.01	0.17	0.13	0.01	156.45	709.37	715.17	299.97	0.54
Plumtree	4033	7-30-2016	363.77	363.62	0.15	0.11	0.01	213.39	758.26	938.35	314.88	0.50
Plumtree	3930	1-YR	358.25	357.86	0.39	0.58	0.04	0.08	187.92		19.41	0.90
Plumtree	3930	2-YR	358.44	358.03	0.41	0.57	0.05	0.35	207.65		21.15	0.93
Plumtree	3930	10-YR	360.47	360.13	0.34	0.29	0.04	36.20	438.49	138.31	186.13	0.88
Plumtree	3930	50-YR	362.33	362.20	0.13	0.13	0.00	143.01	503.64	596.35	233.53	0.46
Plumtree	3930	100-YR	363.03	362.91	0.12	0.12	0.00	208.54	566.10	806.36	247.97	0.45
Plumtree	3930	7-30-2016	363.64	363.52	0.12	0.12	0.00	282.56	623.74	1003.70	259.12	0.45
Plumtree	3816	1-YR	357.63	357.38	0.25	0.42	0.01		185.21	2.79	30.64	0.55
Plumtree	3816	2-YR	357.82	357.57	0.26	0.42	0.00		202.89	5.11	34.73	0.57
Plumtree	3816	10-YR	360.14	359.92	0.21	0.25	0.00	39.10	406.97	166.93	142.27	0.55

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	3816	50-YR	362.19	362.05	0.14	0.15	0.01	157.27	544.58	541.15	204.46	0.44
Plumtree	3816	100-YR	362.91	362.77	0.14	0.15	0.01	230.21	617.32	733.47	220.74	0.45
Plumtree	3816	7-30-2016	363.53	363.38	0.14	0.14	0.01	302.15	687.65	920.20	229.08	0.47
Plumtree	3688	1-YR	357.20	356.98	0.23	0.46	0.00	0.71	187.25	0.03	24.90	0.48
Plumtree	3688	2-YR	357.40	357.16	0.24	0.45	0.01	1.52	206.12	0.37	31.38	0.51
Plumtree	3688	10-YR	359.88	359.62	0.26	0.27	0.00	64.84	432.81	115.35	116.25	0.61
Plumtree	3688	50-YR	362.03	361.84	0.20	0.18	0.00	214.19	608.13	420.68	176.67	0.56
Plumtree	3688	100-YR	362.76	362.56	0.19	0.18	0.01	313.06	686.12	581.82	186.64	0.59
Plumtree	3688	7-30-2016	363.38	363.18	0.19	0.18	0.01	409.21	758.95	741.85	194.39	0.61
Plumtree	3550	1-YR	356.74	356.53	0.21	0.42	0.00	0.17	187.83		25.54	0.49
Plumtree	3550	2-YR	356.95	356.73	0.22	0.41	0.00	0.62	207.38		27.77	0.49
Plumtree	3550	10-YR	359.61	359.34	0.26	0.29	0.02	56.43	513.30	43.27	96.76	0.54
Plumtree	3550	50-YR	361.85	361.62	0.23	0.22	0.03	257.96	784.81	200.23	150.09	0.53
Plumtree	3550	100-YR	362.57	362.32	0.25	0.24	0.04	361.22	928.65	291.13	162.26	0.60
Plumtree	3550	7-30-2016	363.19	362.91	0.27	0.25	0.04	462.62	1062.63	384.75	175.50	0.66
Plumtree	3428	1-YR	356.32	356.08	0.24	0.41	0.00	1.16	186.84		21.19	0.50
Plumtree	3428	2-YR	356.54	356.29	0.25	0.42	0.00	2.30	205.70		23.17	0.53
Plumtree	3428	10-YR	359.30	358.87	0.43	0.49	0.01	76.90	522.99	13.11	58.13	0.87
Plumtree	3428	50-YR	361.60	361.10	0.50	0.43	0.02	270.08	857.10	115.82	97.04	1.07
Plumtree	3428	100-YR	362.30	361.69	0.61	0.51	0.03	362.16	1035.09	183.75	107.80	1.32
Plumtree	3428	7-30-2016	362.90	362.19	0.70	0.59	0.05	451.63	1197.77	260.60	117.04	1.55
Plumtree	3296	1-YR	355.91	355.68	0.23	0.34	0.02		188.00		16.28	0.48
Plumtree	3296	2-YR	356.12	355.88	0.24	0.36	0.03		208.00		17.02	0.52
Plumtree	3296	10-YR	358.80	358.29	0.51	0.26	0.11	0.09	612.91		29.07	1.00
Plumtree	3296	50-YR	361.15	360.42	0.73	0.19	0.17	15.14	1174.02	53.84	97.98	1.30
Plumtree	3296	100-YR	361.75	360.80	0.96	0.23	0.22	24.99	1450.52	105.49	112.39	1.72
Plumtree	3296	7-30-2016	362.25	361.03	1.22	0.28	0.29	34.60	1717.80	157.60	121.36	2.22
Plumtree	3179	1-YR	355.54	355.40	0.14	0.33	0.00		188.00		27.80	0.34
Plumtree	3179	2-YR	355.73	355.58	0.15	0.32	0.00		208.00		30.82	0.35
Plumtree	3179	10-YR	358.42	358.28	0.15	0.08	0.03	8.55	597.44	7.01	84.06	0.28
Plumtree	3179	50-YR	360.79	360.63	0.16	0.05	0.03	49.66	1062.16	131.19	156.20	0.30
Plumtree	3179	100-YR	361.30	361.09	0.21	0.07	0.04	71.52	1317.89	191.58	162.32	0.40
Plumtree	3179	7-30-2016	361.68	361.42	0.27	0.08	0.05	93.84	1565.32	250.84	166.62	0.50
Plumtree	3077	1-YR	355.21	355.03	0.18	0.35	0.00	0.07	187.93		43.48	0.42
Plumtree	3077	2-YR	355.40	355.24	0.17	0.34	0.00	3.20	204.80		76.00	0.40
Plumtree	3077	10-YR	358.32	358.27	0.05	0.07	0.02	185.77	340.64	86.59	181.96	0.14
Plumtree	3077	50-YR	360.70	360.65	0.05	0.06	0.02	439.45	552.07	251.48	222.34	0.15
Plumtree	3077	100-YR	361.19	361.12	0.07	0.07	0.03	565.81	684.09	331.10	236.93	0.20
Plumtree	3077	7-30-2016	361.55	361.47	0.08	0.09	0.03	695.31	807.17	407.52	245.38	0.25
Plumtree	2978	1-YR	354.85	354.66	0.19	0.21	0.00		188.00		22.32	0.44
Plumtree	2978	2-YR	355.06	354.86	0.20	0.22	0.00		208.00		24.19	0.45
Plumtree	2978	10-YR	358.23	358.03	0.20	0.09	0.00	13.39	556.23	43.37	73.07	0.39
Plumtree	2978	50-YR	360.63	360.39	0.24	0.06	0.02	119.14	954.16	169.70	144.96	0.47
Plumtree	2978	100-YR	361.09	360.77	0.32	0.08	0.03	178.50	1176.30	226.20	160.58	0.63
Plumtree	2978	7-30-2016	361.43	361.02	0.41	0.09	0.05	241.59	1388.59	279.82	163.30	0.82
Plumtree	2917	1-YR	354.64	354.42	0.22				188.00		19.49	0.50
Plumtree	2917	2-YR	354.84	354.61	0.23				208.00		20.40	0.52
Plumtree	2917	10-YR	358.14	357.93	0.21			14.38	579.23	19.39	77.41	0.40
Plumtree	2917	50-YR	360.54	360.38	0.17			254.32	891.49	97.19	257.35	0.36
Plumtree	2917	100-YR	360.98	360.77	0.21			382.85	1068.34	129.81	278.34	0.46
Plumtree	2917	7-30-2016	361.29	361.04	0.25			507.14	1241.46	161.40	292.32	0.57
Plumtree	2900 Frederick Rd		Culvert									
Plumtree	2827	1-YR	354.43	354.18	0.26	0.25	0.04	0.16	187.84		33.97	0.66
Plumtree	2827	2-YR	354.59	354.34	0.25	0.25	0.02	0.65	207.35	0.00	38.09	0.64
Plumtree	2827	10-YR	356.32	355.80	0.53	0.30	0.11	20.87	582.38	9.75	112.59	1.13
Plumtree	2827	50-YR	357.49	356.97	0.52	0.27	0.11	291.47	903.06	48.47	158.78	1.27
Plumtree	2827	100-YR	358.02	357.49	0.53	0.25	0.13	435.38	1061.37	84.25	174.22	1.34
Plumtree	2827	7-30-2016	358.45	357.89	0.57	0.25	0.14	576.15	1212.57	121.28	185.58	1.45
Plumtree	2759	1-YR	354.14	353.96	0.18	0.44	0.02	2.52	185.43	0.05	35.04	0.39
Plumtree	2759	2-YR	354.31	354.11	0.20	0.44	0.02	4.30	203.31	0.40	44.78	0.43
Plumtree	2759	10-YR	355.92	355.61	0.31	0.57	0.04	126.61	416.16	70.23	169.69	0.82
Plumtree	2759	50-YR	357.11	356.81	0.30	0.60	0.02	381.54	584.92	276.54	223.50	1.00
Plumtree	2759	100-YR	357.64	357.37	0.27	0.61	0.00	534.09	643.22	403.69	243.16	1.00
Plumtree	2759	7-30-2016	358.06	357.79	0.28	0.58	0.01	679.29	705.45	525.27	257.95	1.05
Plumtree	2589	1-YR	353.69	353.56	0.13	0.61	0.07		110.46	77.54	66.17	0.44
Plumtree	2589	2-YR	353.85	353.72	0.12	0.59	0.07		117.12	90.88	70.57	0.44
Plumtree	2589	10-YR	355.31	355.13	0.18	0.51	0.03	23.20	234.97	354.83	148.41	0.75
Plumtree	2589	50-YR	356.49	356.26	0.23	0.44	0.01	129.08	358.34	755.59	213.01	1.04

HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	2589	100-YR	357.03	356.77	0.26	0.44	0.00	219.53	439.89	921.58	239.14	1.29
Plumtree	2589	7-30-2016	357.48	357.23	0.25	0.40	0.00	295.18	472.32	1142.51	253.91	1.26
Plumtree	2485	1-YR	353.01	352.22	0.79	1.09	0.16	5.23	182.77		21.70	1.93
Plumtree	2485	2-YR	353.19	352.37	0.82	1.05	0.17	8.29	199.71	0.01	25.39	1.98
Plumtree	2485	10-YR	354.77	354.27	0.50	0.73	0.04	157.33	355.85	99.82	140.81	1.59
Plumtree	2485	50-YR	356.04	355.70	0.34	0.59	0.01	404.92	460.70	377.37	187.27	1.36
Plumtree	2485	100-YR	356.59	356.28	0.30	0.56	0.01	540.42	506.06	534.52	200.15	1.31
Plumtree	2485	7-30-2016	357.08	356.79	0.29	0.53	0.02	674.35	545.73	689.91	206.55	1.27
Plumtree	2331	1-YR	351.75	351.50	0.25	0.48	0.02		187.86	0.14	20.97	0.55
Plumtree	2331	2-YR	351.97	351.71	0.26	0.48	0.02		207.51	0.49	22.66	0.56
Plumtree	2331	10-YR	354.00	353.63	0.37	0.56	0.02	95.29	485.03	32.67	121.77	0.85
Plumtree	2331	50-YR	355.44	355.03	0.41	0.58	0.02	364.62	748.03	130.35	144.01	1.07
Plumtree	2331	100-YR	356.01	355.57	0.44	0.60	0.02	511.69	877.34	191.97	154.52	1.20
Plumtree	2331	7-30-2016	356.52	356.06	0.46	0.61	0.02	660.08	993.10	256.82	164.43	1.29
Plumtree	2153	1-YR	351.25	351.08	0.17	0.37	0.00	4.42	183.58		21.65	0.36
Plumtree	2153	2-YR	351.47	351.28	0.18	0.38	0.00	6.36	201.64		23.51	0.38
Plumtree	2153	10-YR	353.42	353.12	0.30	0.52	0.01	179.70	429.52	3.78	114.84	0.75
Plumtree	2153	50-YR	354.84	354.49	0.35	0.56	0.00	551.75	642.98	48.27	140.34	1.03
Plumtree	2153	100-YR	355.39	355.02	0.37	0.56	0.00	759.36	739.79	81.85	146.21	1.16
Plumtree	2153	7-30-2016	355.89	355.50	0.39	0.55	0.00	966.79	823.71	119.49	152.35	1.25
Plumtree	1994	1-YR	350.87	350.65	0.22	0.31	0.00	1.07	186.93		26.61	0.46
Plumtree	1994	2-YR	351.08	350.85	0.23	0.30	0.00	2.78	205.22		31.84	0.49
Plumtree	1994	10-YR	352.89	352.53	0.36	0.36	0.02	141.70	442.51	28.79	122.93	0.90
Plumtree	1994	50-YR	354.28	353.88	0.39	0.37	0.02	426.69	661.82	154.50	166.16	1.17
Plumtree	1994	100-YR	354.83	354.45	0.38	0.36	0.01	591.48	742.69	246.83	174.03	1.21
Plumtree	1994	7-30-2016	355.34	354.97	0.37	0.34	0.01	758.37	814.44	337.20	181.98	1.23
Plumtree	1888	1-YR	350.55	350.31	0.24	0.06	0.01	7.66	175.03	5.32	48.16	0.54
Plumtree	1888	2-YR	350.78	350.55	0.23	0.05	0.01	12.67	186.55	8.78	56.96	0.52
Plumtree	1888	10-YR	352.52	352.22	0.30	0.06	0.01	141.55	374.61	96.84	128.56	0.85
Plumtree	1888	50-YR	353.89	353.56	0.34	0.06	0.01	374.55	559.32	309.13	155.52	1.11
Plumtree	1888	100-YR	354.47	354.11	0.35	0.06	0.02	505.98	642.42	432.60	165.68	1.21
Plumtree	1888	7-30-2016	354.99	354.64	0.35	0.06	0.03	639.21	711.68	559.11	174.10	1.25
Plumtree	1850 Pedestrian Bridg		Bridge									
Plumtree	1830	1-YR	350.32	350.23	0.10	0.40	0.04	47.79	140.21		71.71	0.26
Plumtree	1830	2-YR	350.57	350.48	0.09	0.35	0.03	57.55	150.45		82.53	0.25
Plumtree	1830	10-YR	352.26	352.14	0.12	0.48	0.12	266.50	309.56	36.95	151.48	0.38
Plumtree	1830	50-YR	353.62	353.44	0.17	0.53	0.11	558.31	505.66	179.03	156.22	0.58
Plumtree	1830	100-YR	354.16	353.96	0.20	0.55	0.10	713.13	604.07	263.80	158.10	0.68
Plumtree	1830	7-30-2016	354.68	354.45	0.23	0.55	0.08	854.48	700.40	355.12	162.80	0.77
Plumtree	1641	1-YR	349.89	349.67	0.21	0.26	0.04	19.35	168.65	0.01	31.29	0.50
Plumtree	1641	2-YR	350.18	349.97	0.21	0.21	0.05	24.91	182.49	0.60	43.17	0.48
Plumtree	1641	10-YR	351.66	351.16	0.51	0.48	0.10	111.80	423.21	77.99	110.87	1.32
Plumtree	1641	50-YR	352.97	352.44	0.54	0.59	0.09	274.06	628.88	340.06	145.47	1.68
Plumtree	1641	100-YR	353.51	352.98	0.53	0.59	0.08	364.50	710.85	505.66	154.60	1.76
Plumtree	1641	7-30-2016	354.05	353.56	0.49	0.53	0.07	460.10	770.29	679.61	163.97	1.70
Plumtree	1463	1-YR	349.59	349.52	0.07	0.35	0.01	4.11	180.81	3.08	99.03	0.14
Plumtree	1463	2-YR	349.93	349.87	0.06	0.35	0.01	12.77	188.61	6.63	116.96	0.12
Plumtree	1463	10-YR	351.07	350.91	0.16	0.46	0.00	108.58	452.09	52.33	146.19	0.39
Plumtree	1463	50-YR	352.30	352.05	0.25	0.44	0.03	321.29	761.65	160.06	179.60	0.67
Plumtree	1463	100-YR	352.84	352.57	0.28	0.41	0.04	456.64	896.37	228.00	192.87	0.76
Plumtree	1463	7-30-2016	353.46	353.20	0.26	0.35	0.04	603.22	989.70	317.08	203.08	0.74
Plumtree	1291	1-YR	349.23	349.06	0.17	0.64	0.00	163.70	252.30		221.19	0.56
Plumtree	1291	2-YR	349.56	349.37	0.19	0.59	0.01	270.25	309.69	0.06	239.06	0.68
Plumtree	1291	10-YR	350.61	350.42	0.19	0.48	0.02	792.43	465.35	5.22	310.89	0.82
Plumtree	1291	50-YR	351.83	351.67	0.16	0.38	0.01	1632.77	610.74	28.50	385.46	0.80
Plumtree	1291	100-YR	352.40	352.25	0.15	0.34	0.01	2104.33	668.38	45.29	411.53	0.76
Plumtree	1291	7-30-2016	353.07	352.93	0.14	0.31	0.00	2736.54	729.28	69.19	419.45	0.71
Plumtree	1124	1-YR	348.59	348.38	0.21	0.46	0.02	151.79	264.21		244.34	0.67
Plumtree	1124	2-YR	348.96	348.81	0.15	0.37	0.01	294.25	285.75		261.46	0.58
Plumtree	1124	10-YR	350.11	349.99	0.12	0.30	0.00	866.84	395.38	0.78	280.47	0.56
Plumtree	1124	50-YR	351.44	351.32	0.12	0.25	0.00	1710.22	547.44	14.34	309.39	0.58
Plumtree	1124	100-YR	352.05	351.92	0.13	0.24	0.00	2162.33	625.58	30.10	322.60	0.60
Plumtree	1124	7-30-2016	352.76	352.62	0.14	0.23	0.01	2749.25	724.67	61.08	333.88	0.64
Plumtree	994	1-YR	348.11	347.98	0.13	0.25	0.00	148.71	267.29		185.62	0.42
Plumtree	994	2-YR	348.58	348.47	0.11	0.19	0.00	263.69	316.31		206.41	0.38
Plumtree	994	10-YR	349.81	349.67	0.13	0.17	0.00	716.21	545.45	1.34	232.94	0.49
Plumtree	994	50-YR	351.18	351.02	0.16	0.16	0.00	1407.03	846.27	18.70	269.41	0.58
Plumtree	994	100-YR	351.80	351.63	0.18	0.16	0.00	1781.97	998.25	37.77	283.87	0.63

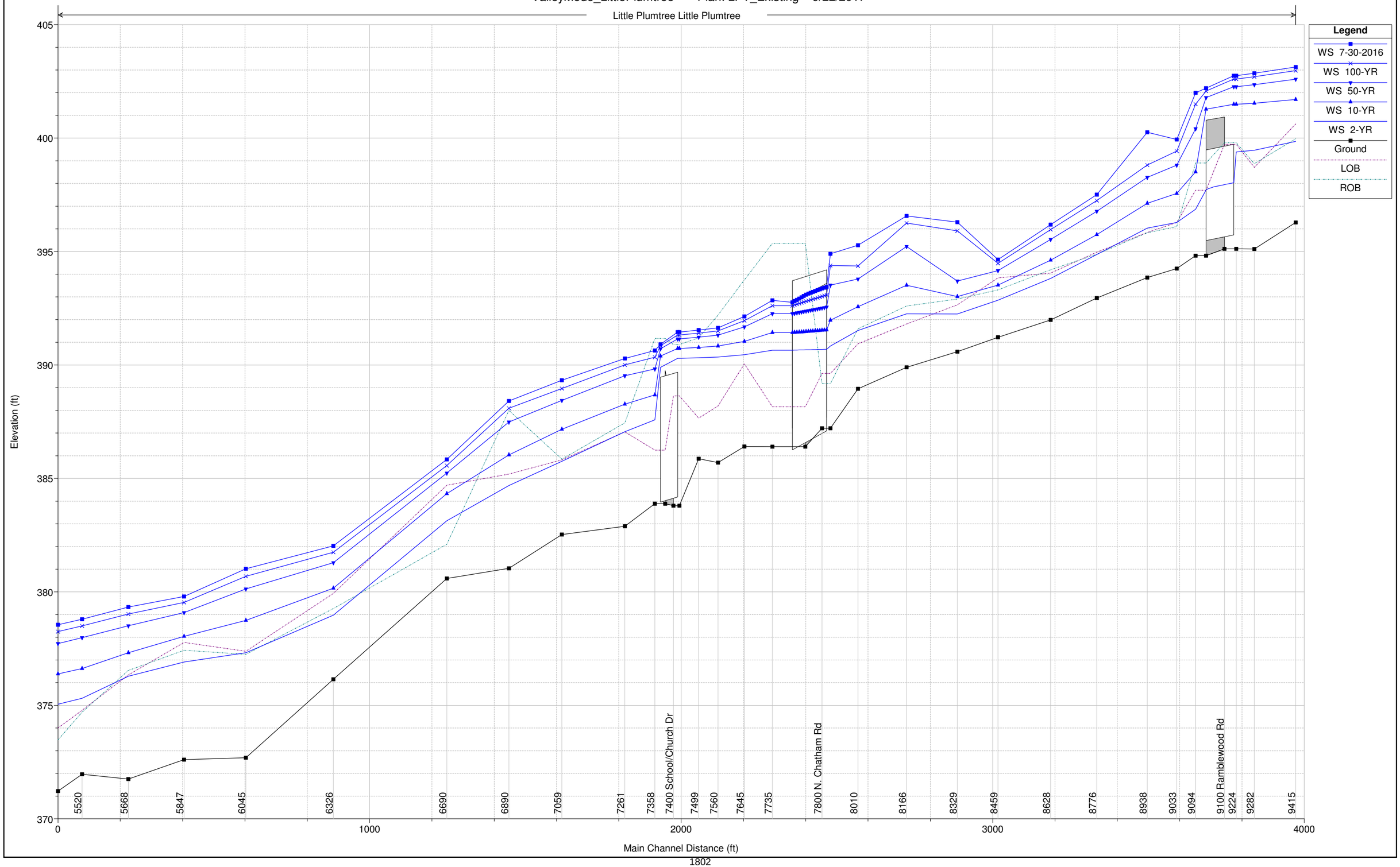
HEC-RAS Plan: I River: Plumtree Reach: Plumtree (Continued)

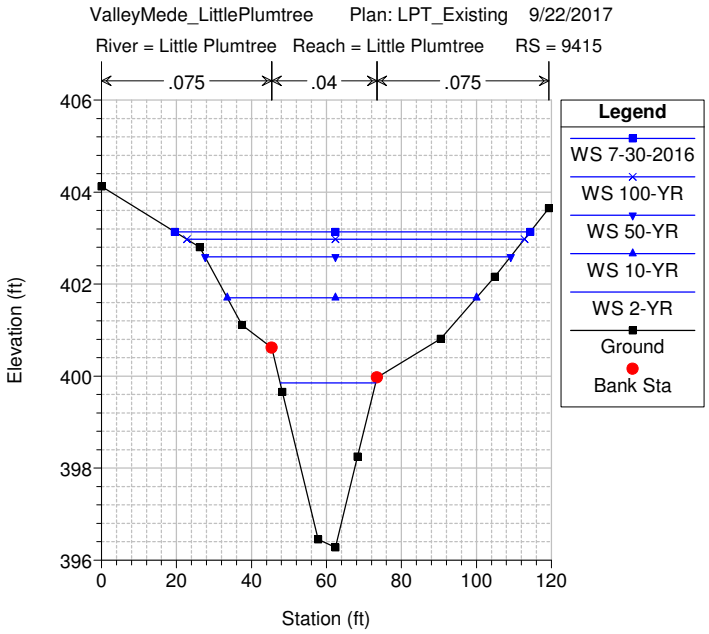
Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Plumtree	994	7-30-2016	352.52	352.33	0.19	0.15	0.01	2275.97	1188.69	70.34	299.59	0.68
Plumtree	911	1-YR	347.85	347.69	0.17	0.54	0.01	160.90	255.10		194.64	0.54
Plumtree	911	2-YR	348.39	348.27	0.12	0.47	0.03	303.21	276.79		213.52	0.43
Plumtree	911	10-YR	349.63	349.50	0.13	0.35	0.01	830.71	429.15	3.14	237.52	0.53
Plumtree	911	50-YR	351.02	350.87	0.15	0.30	0.01	1623.66	625.53	22.81	271.60	0.64
Plumtree	911	100-YR	351.64	351.48	0.16	0.28	0.01	2056.97	721.35	39.68	284.77	0.69
Plumtree	911	7-30-2016	352.37	352.19	0.18	0.27	0.01	2626.73	841.13	67.14	299.29	0.75
Plumtree	762	1-YR	347.30	347.03	0.27	0.19	0.05	99.72	316.28	0.01	82.18	0.73
Plumtree	762	2-YR	347.89	347.51	0.38	0.21	0.07	135.34	442.04	2.63	161.02	0.99
Plumtree	762	10-YR	349.27	349.02	0.25	0.17	0.03	541.48	623.95	97.56	239.59	0.81
Plumtree	762	50-YR	350.72	350.49	0.22	0.15	0.02	1117.55	854.36	300.10	279.06	0.81
Plumtree	762	100-YR	351.35	351.12	0.23	0.14	0.02	1429.35	971.51	417.14	295.63	0.84
Plumtree	762	7-30-2016	352.09	351.85	0.23	0.14	0.02	1835.55	1116.06	583.39	311.64	0.87
Plumtree	658	1-YR	347.07	346.95	0.12	0.14	0.00	9.45	397.54	9.01	177.76	0.23
Plumtree	658	2-YR	347.61	347.47	0.14	0.13	0.02	36.97	503.99	39.04	225.63	0.28
Plumtree	658	10-YR	349.07	348.92	0.15	0.12	0.02	240.36	782.19	240.45	299.30	0.37
Plumtree	658	50-YR	350.55	350.40	0.15	0.12	0.02	600.88	1077.69	593.42	326.93	0.43
Plumtree	658	100-YR	351.19	351.03	0.15	0.12	0.02	801.35	1227.73	788.92	340.32	0.46
Plumtree	658	7-30-2016	351.92	351.76	0.17	0.12	0.02	1075.34	1420.00	1039.66	358.36	0.51
Plumtree	526	1-YR	346.93	346.82	0.11	0.25	0.01	22.56	325.65	67.79	265.29	0.26
Plumtree	526	2-YR	347.46	347.38	0.09	0.21	0.01	56.89	366.97	156.14	278.70	0.25
Plumtree	526	10-YR	348.93	348.85	0.08	0.17	0.01	206.53	535.44	521.04	309.81	0.27
Plumtree	526	50-YR	350.41	350.32	0.09	0.16	0.01	449.91	756.74	1065.35	338.71	0.33
Plumtree	526	100-YR	351.05	350.95	0.10	0.16	0.01	592.80	868.54	1356.65	349.43	0.36
Plumtree	526	7-30-2016	351.79	351.68	0.11	0.17	0.01	785.38	1010.78	1738.84	361.88	0.40
Plumtree	380	1-YR	346.67	346.43	0.24	1.36	0.10	29.04	384.99	1.97	148.27	0.52
Plumtree	380	2-YR	347.24	347.04	0.20	1.09	0.11	92.71	454.74	32.56	192.03	0.49
Plumtree	380	10-YR	348.75	348.57	0.18	0.78	0.10	360.45	688.36	214.19	218.42	0.52
Plumtree	380	50-YR	350.24	350.04	0.20	0.76	0.12	753.43	994.00	524.57	235.51	0.63
Plumtree	380	100-YR	350.88	350.66	0.22	0.77	0.13	963.04	1148.85	706.10	240.28	0.69
Plumtree	380	7-30-2016	351.61	351.36	0.24	0.78	0.14	1238.47	1347.51	949.03	245.54	0.77
Plumtree	146	1-YR	345.21	344.02	1.20	0.58	0.29		416.00		20.08	2.69
Plumtree	146	2-YR	346.05	344.78	1.26	0.53	0.29	4.69	574.27	1.05	43.16	2.64
Plumtree	146	10-YR	347.86	346.67	1.19	0.45	0.20	205.90	1003.22	53.88	109.52	2.61
Plumtree	146	50-YR	349.36	347.94	1.41	0.45	0.20	618.51	1492.25	161.24	139.45	3.38
Plumtree	146	100-YR	349.98	348.47	1.51	0.46	0.21	872.41	1724.77	220.82	150.60	3.73
Plumtree	146	7-30-2016	350.68	349.04	1.64	0.46	0.22	1228.31	2008.36	298.33	160.94	4.18
Plumtree	63	1-YR	343.82	343.59	0.24				416.00		43.85	0.52
Plumtree	63	2-YR	344.47	344.18	0.29			0.04	579.94	0.02	49.96	0.61
Plumtree	63	10-YR	346.33	345.81	0.52			20.14	1233.48	9.38	81.21	0.95
Plumtree	63	50-YR	348.18	347.44	0.74			126.14	2067.58	78.28	125.14	1.30
Plumtree	63	100-YR	348.95	348.13	0.82			210.98	2469.61	137.41	136.88	1.44
Plumtree	63	7-30-2016	349.83	348.91	0.91			340.50	2964.79	229.71	147.30	1.61

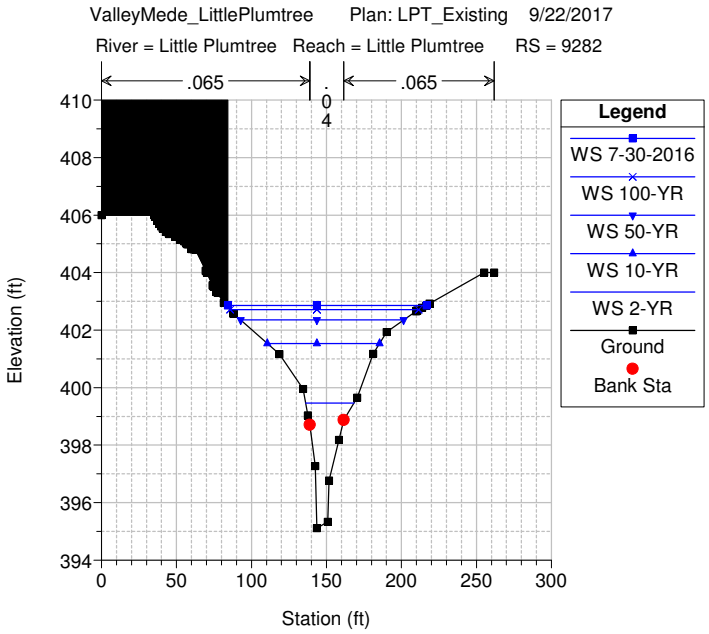
Appendix H-11

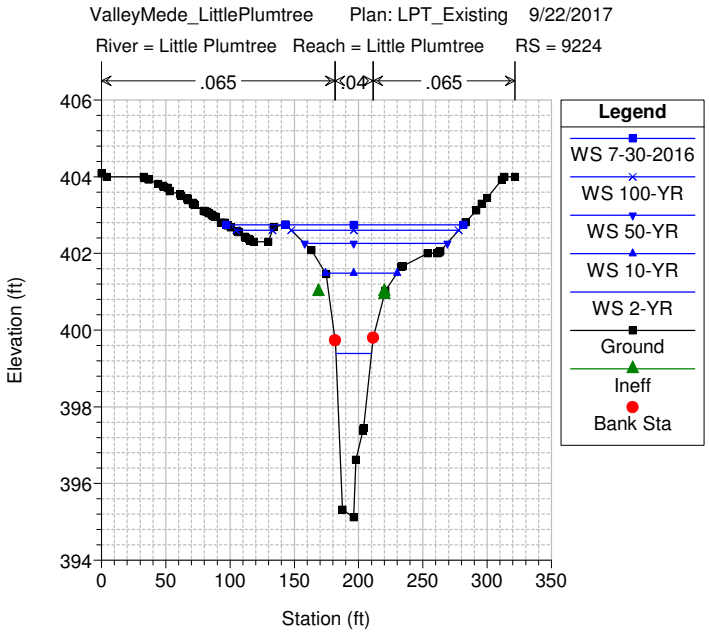
Little Plumtree Branch: Existing Conditions Hydraulic Modeling

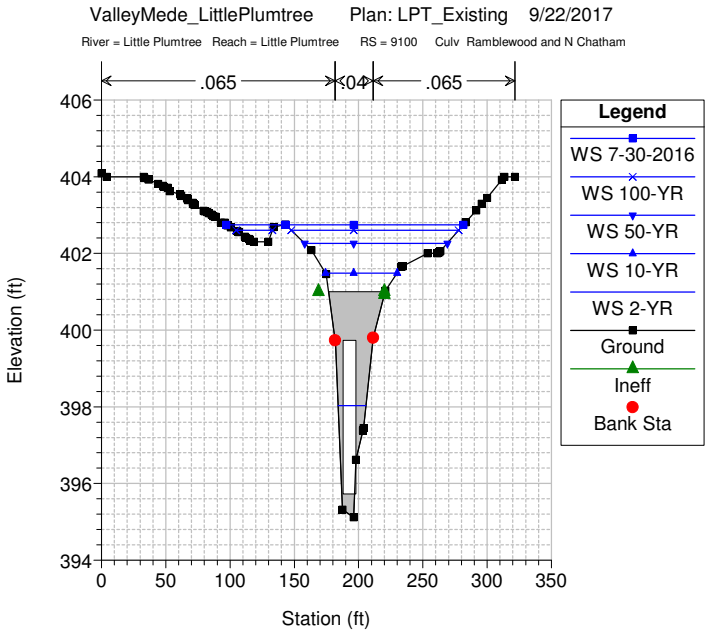
ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017

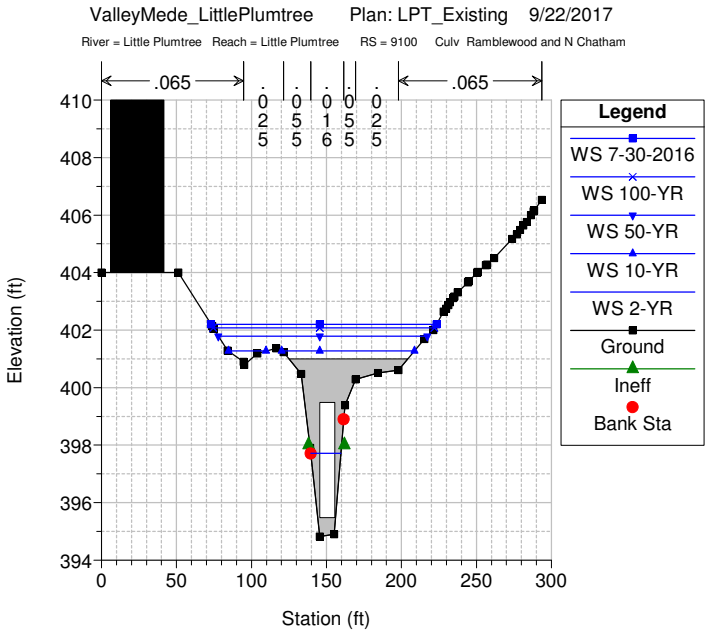


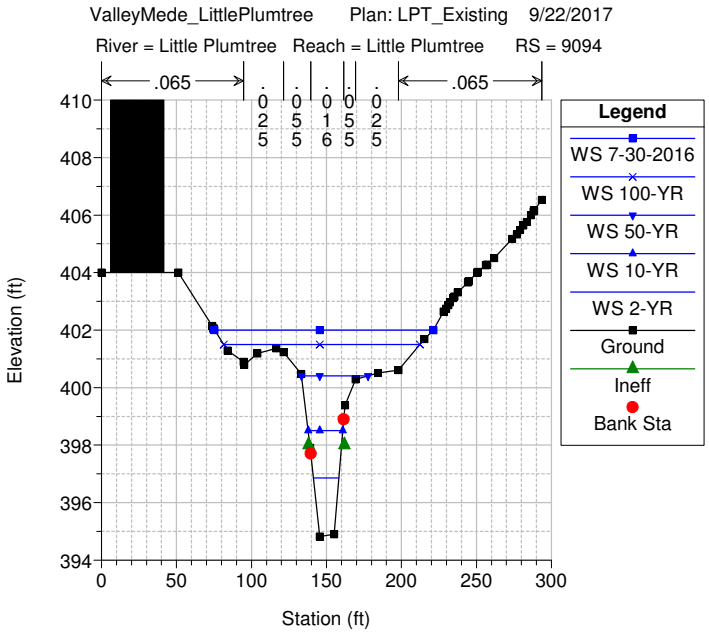

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9415
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

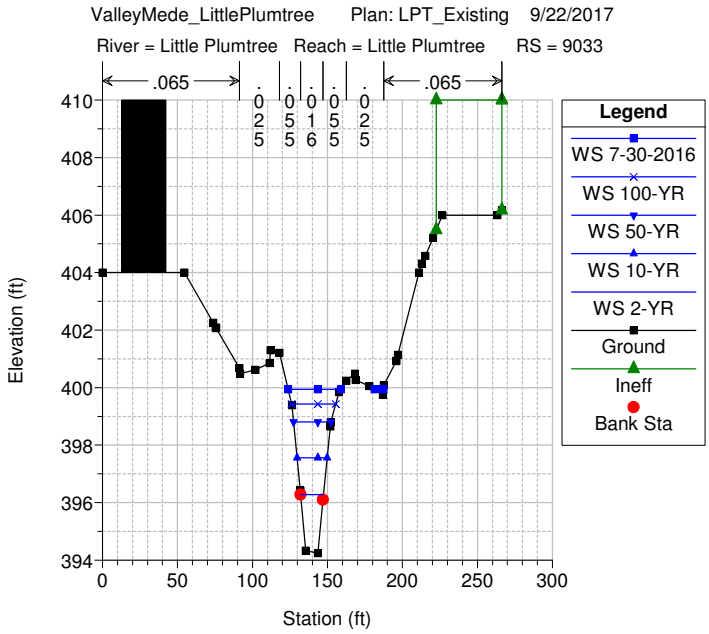

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9282
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

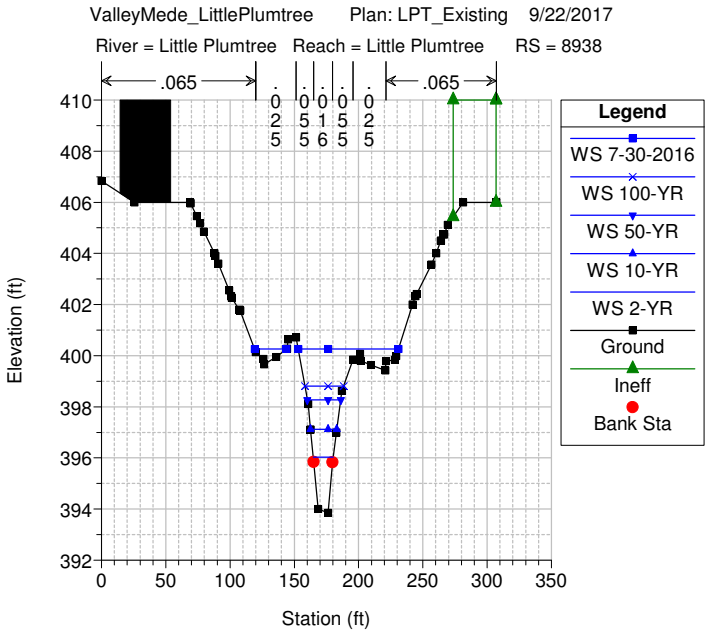

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9224
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

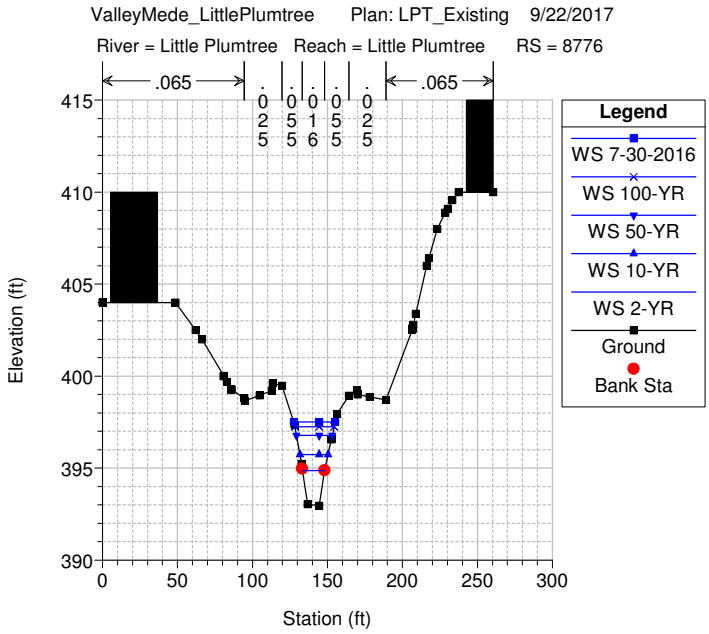

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9100 Culv Ramblewood and N Chatham
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

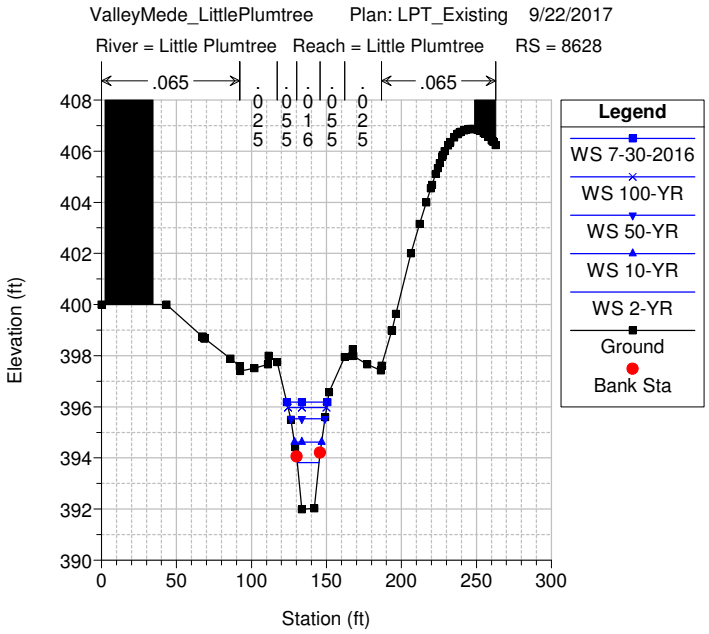

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9100 Culv Ramblewood and N Chatham
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

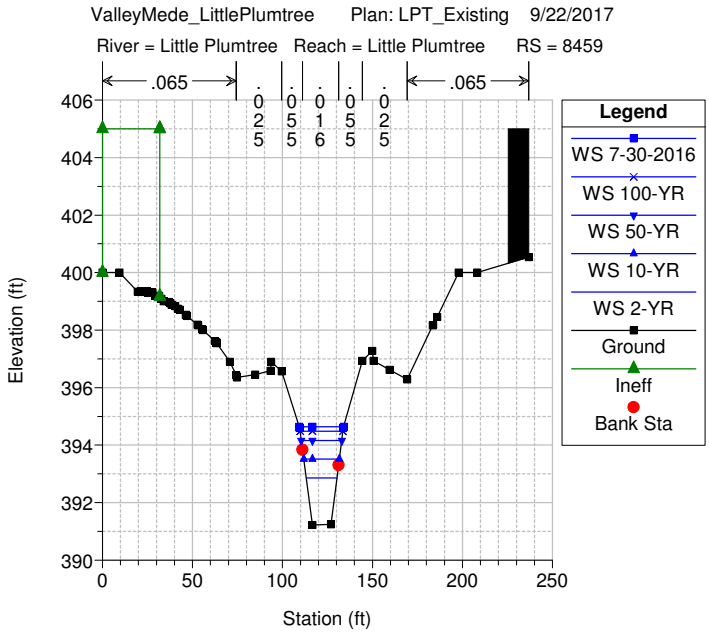

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9094
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

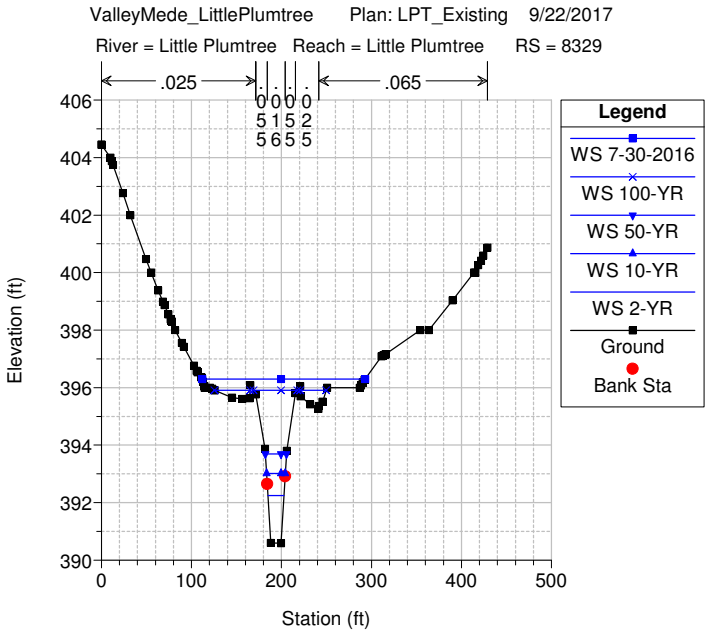

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9033
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

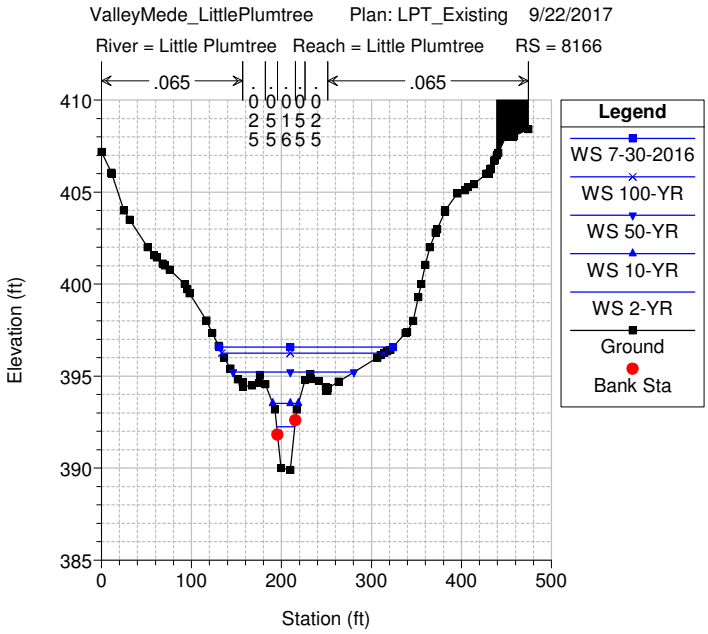

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8938
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

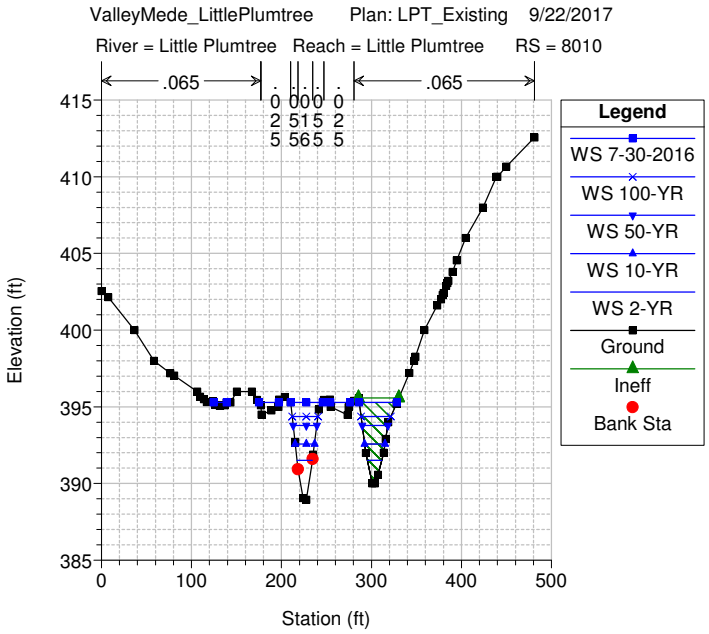

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8776
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

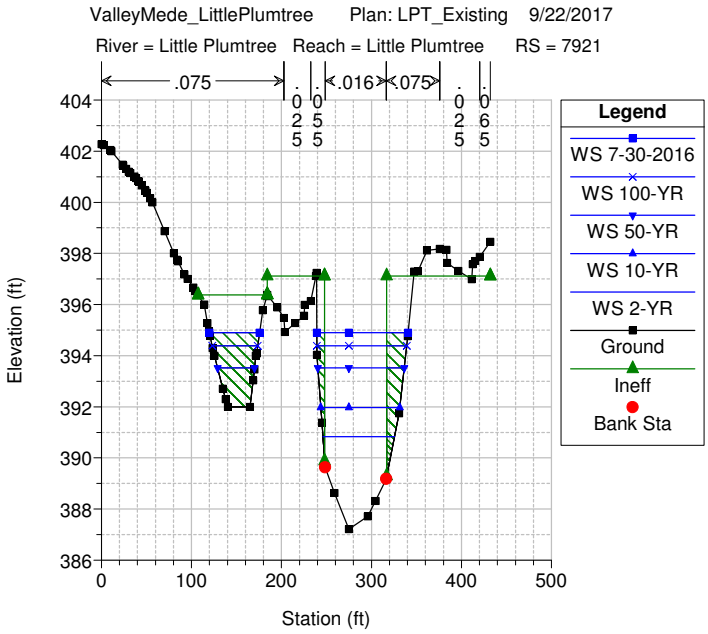

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8628
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

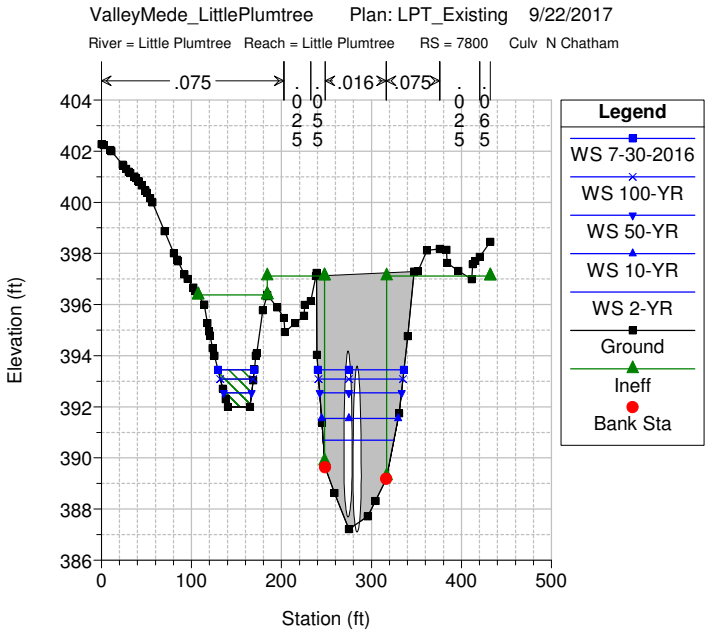

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8459
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

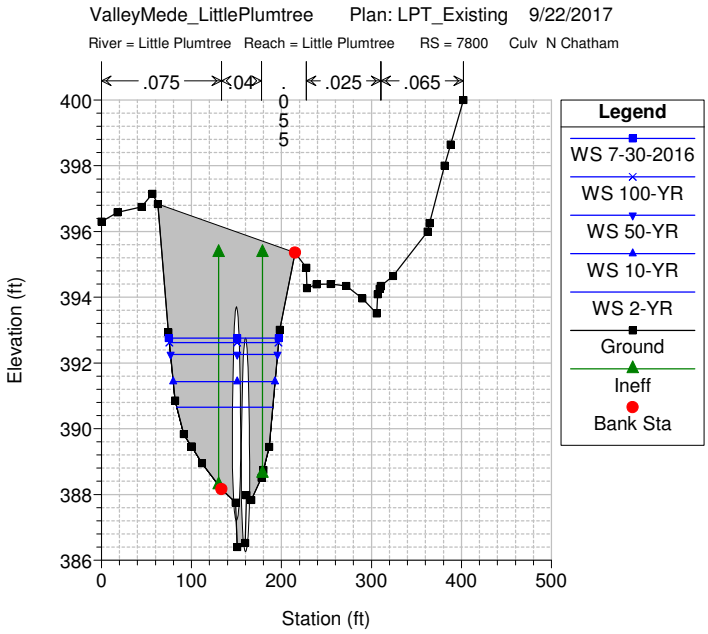

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8329
.025
.065
.055
.065
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

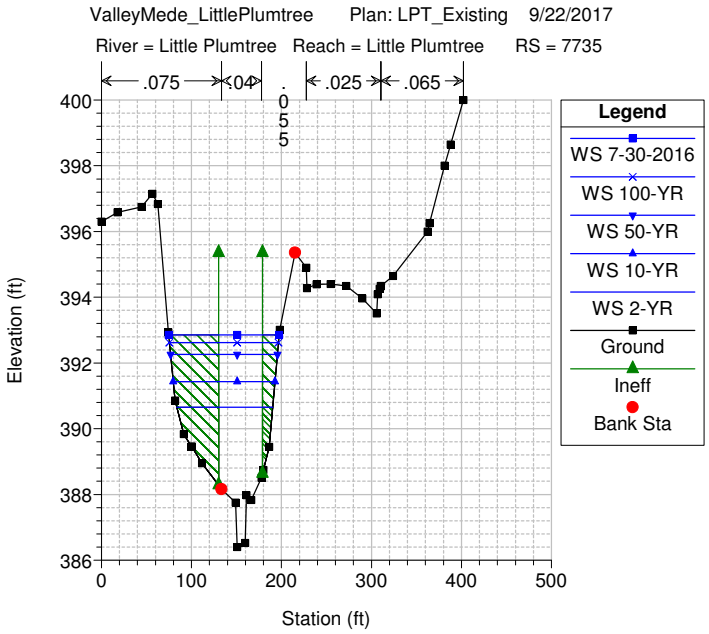

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8166
.065
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

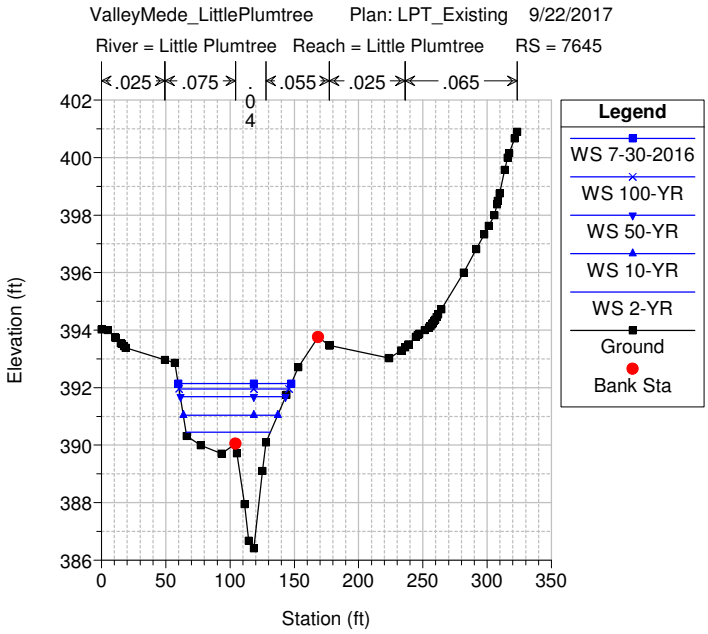

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8010
.065
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

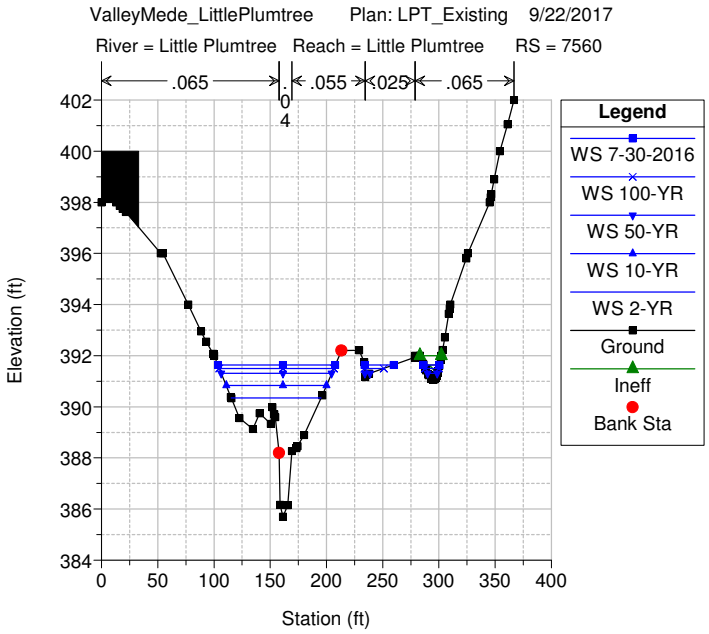

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7921
.075
.016
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

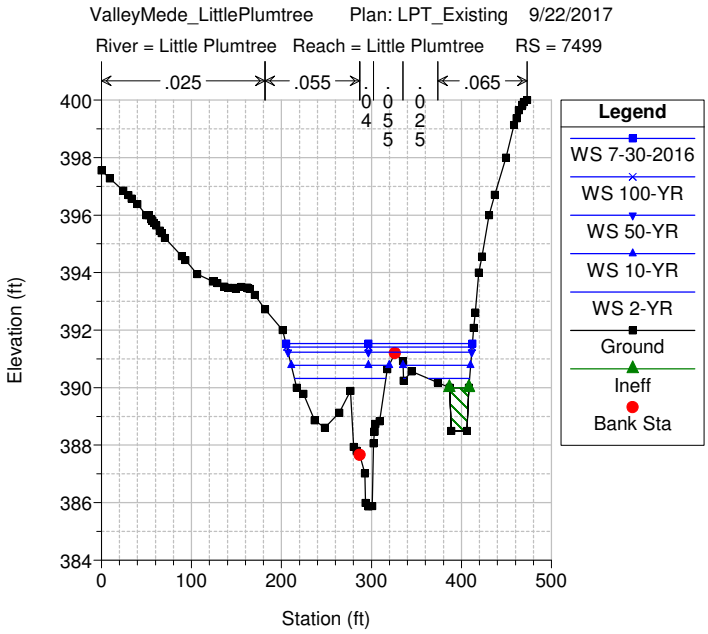

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7800 Culv N Chatham
.075
.016
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

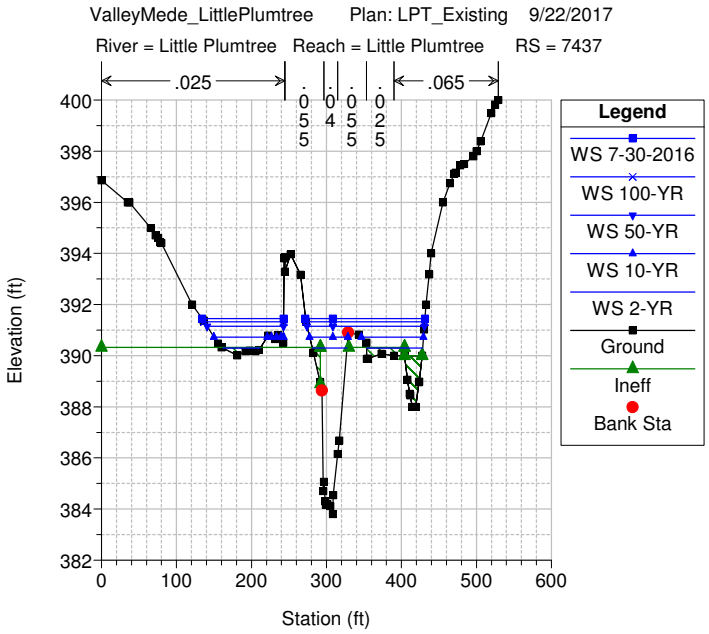

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7800 Culv N Chatham
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

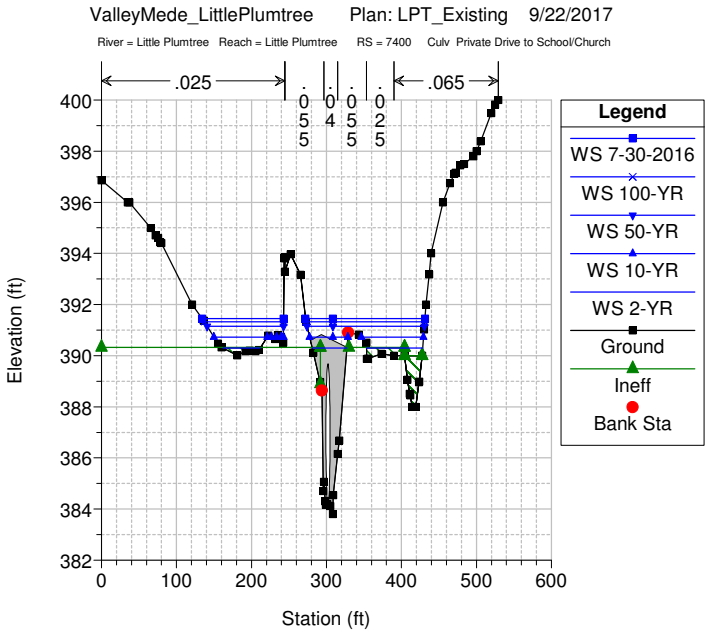

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7735
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

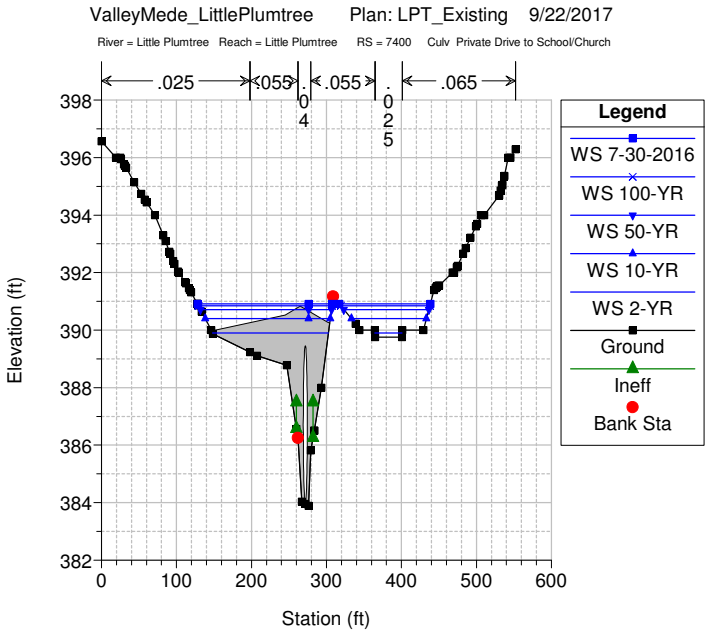

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7645
.025 .075 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

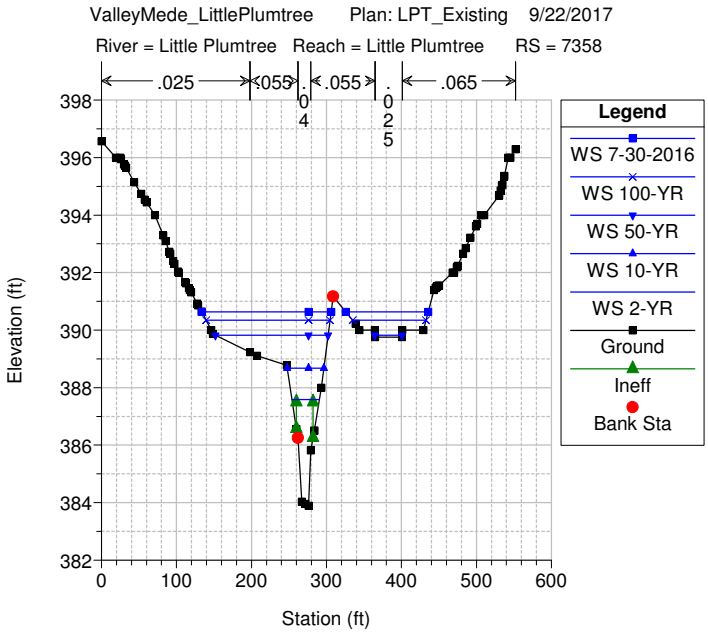

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7560
.065 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

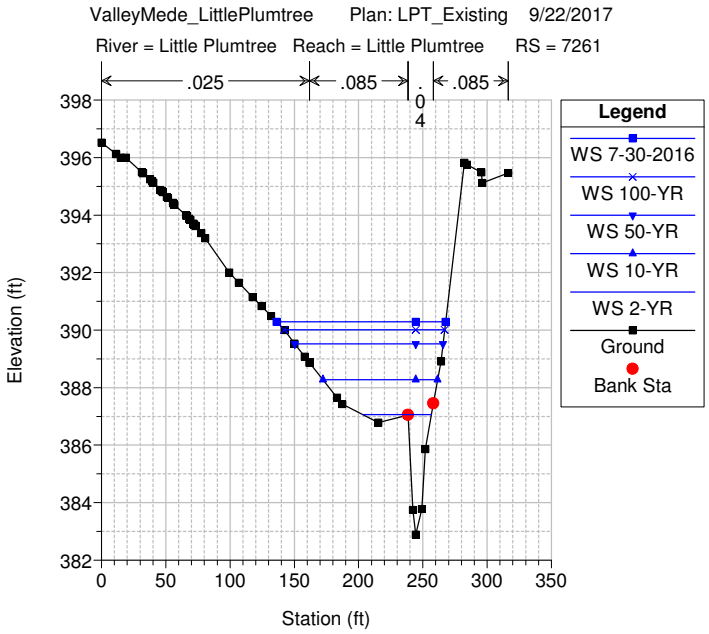

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7499
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

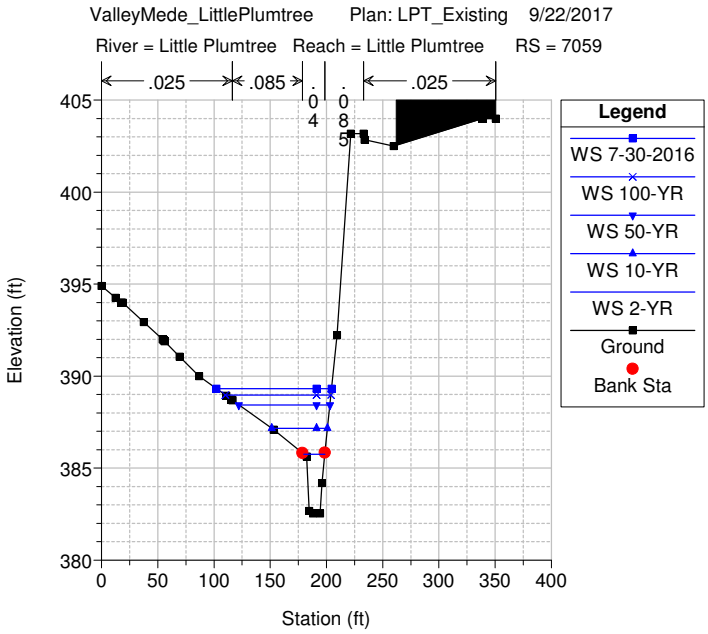

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7437
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

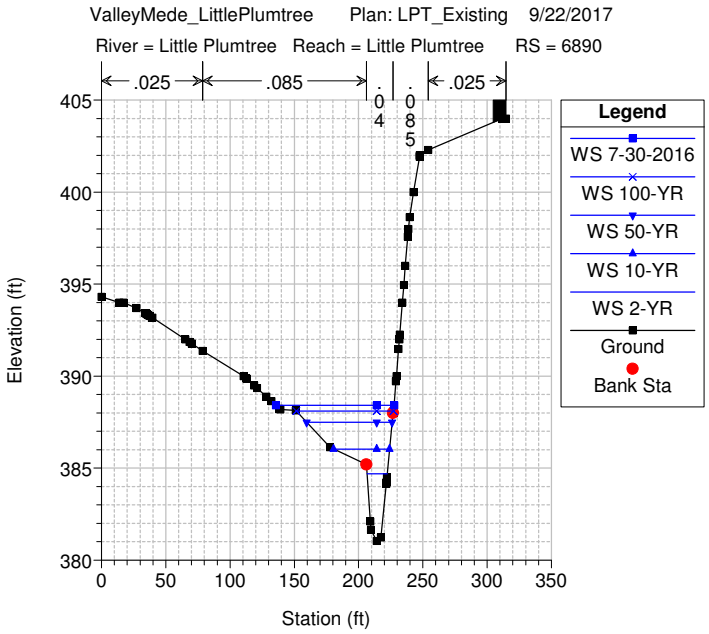

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7400 Culv Private Drive to School/Church
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

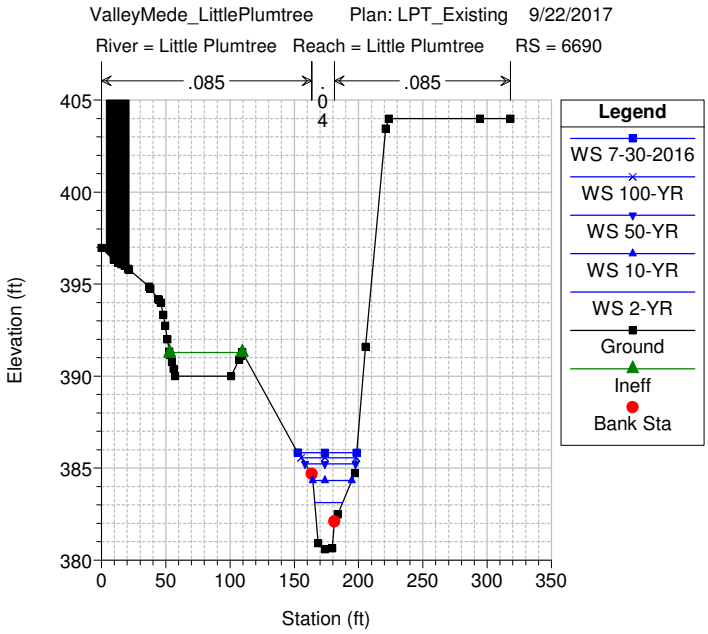

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7400 Culv Private Drive to School/Church
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

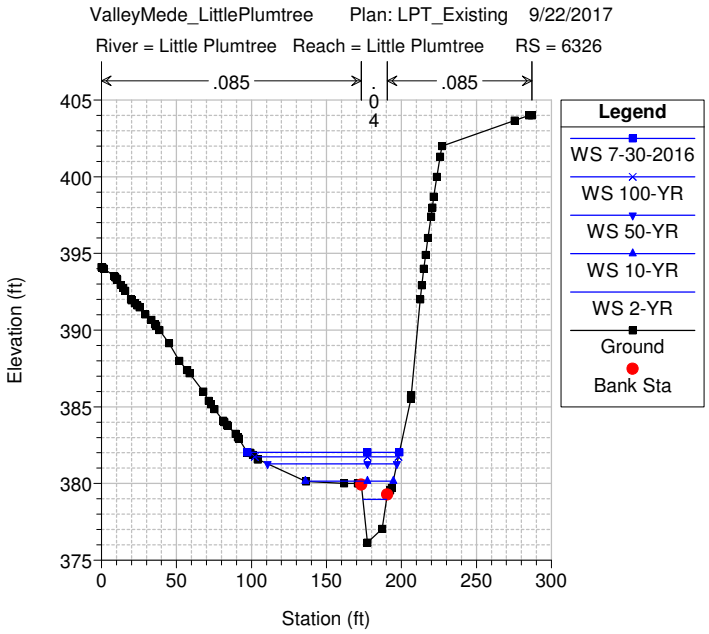

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7358
.025
.055
.055
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

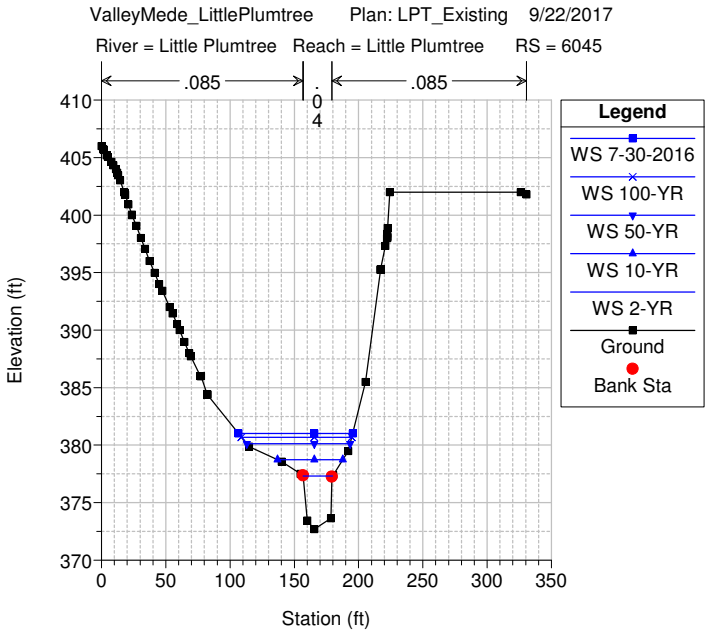

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7261
.025
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

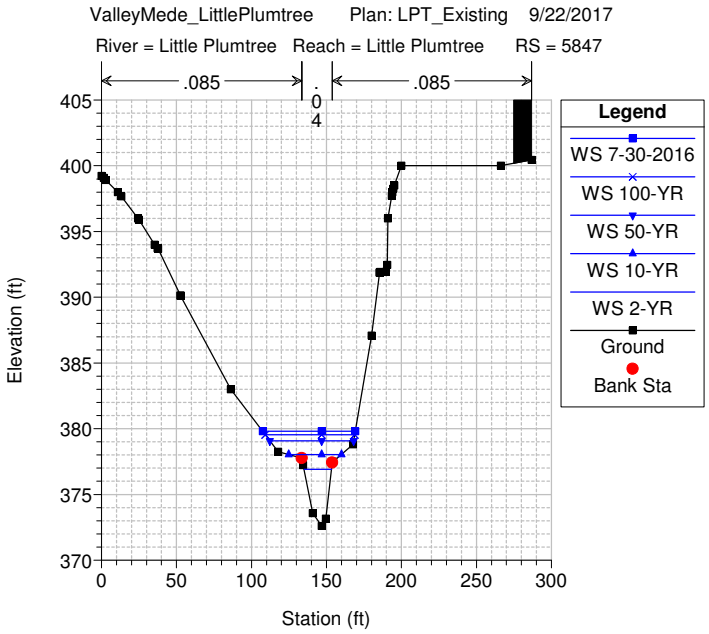

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7059
.025
.085
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

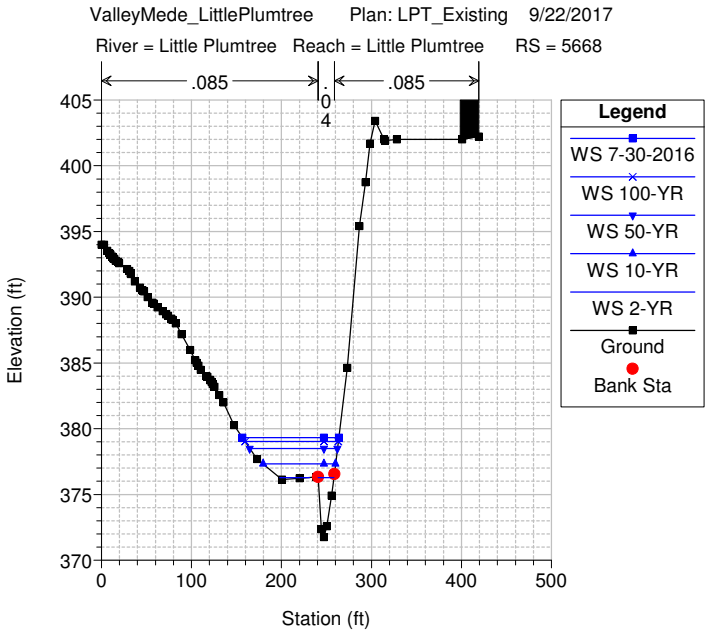

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6890
.025
.085
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

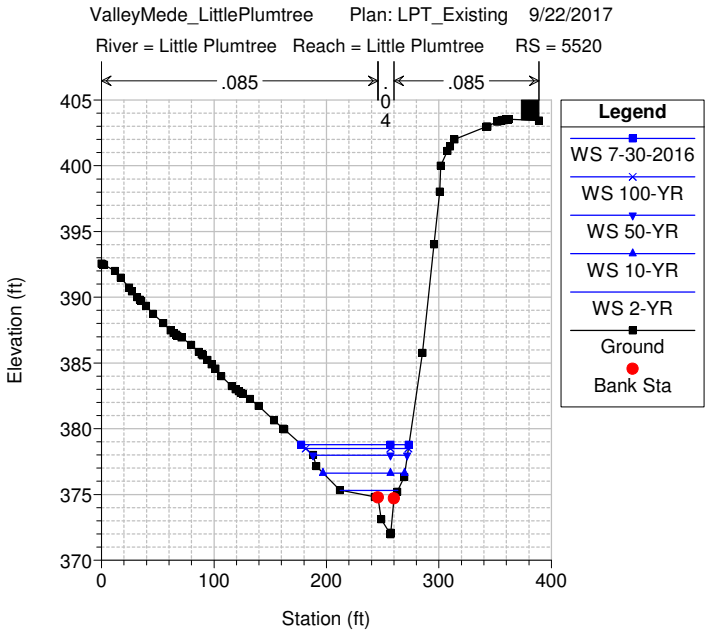

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6690
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

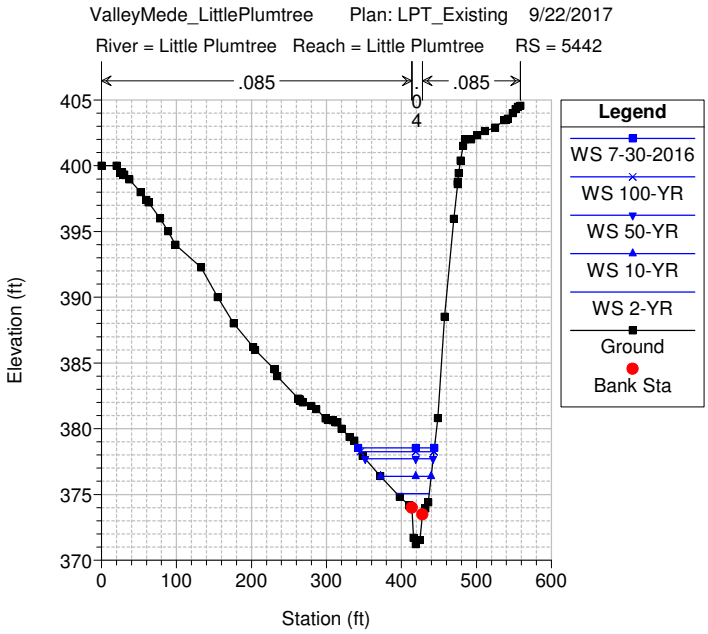

ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6326
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6045
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5847
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5668
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5520
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Existing 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5442
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
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PROJECT DATA
Project Title: ValleyMede_LittlePlumtree
Project File : ValleyMedeLittlePlumtree.prj
Run Date and Time: 9/22/2017 12:39:01 PM

Project in English units

PLAN DATA

Plan Title: LPT_Existing
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.p01

Geometry Title: Little Plumtree
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g01

Flow Title : Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Plan Description:
Existing conditions of Little Plumtree Branch.

Plan Summary Information:
Number of: Cross Sections = 29 Multiple Openings = 0
Culverts = 3 Inline Structures = 0
Bridges = 0 Lateral Structures = 2

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 40
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed at all cross sections
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Program Selects Appropriate method
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Flow Data (cfs)

River	Reach	RS	2-YR	10-YR	50-YR	100-YR	7-30-2016
Little Plumtree	Little Plumtree	9415	189	397	698	862	945

Little Plumtree	Little Plumtree	7645	190	403	741	927	1058

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Little Plumtree	Little Plumtree	2-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	10-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	50-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	100-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	7-30-2016	Critical	Normal S = 0.00278

GEOMETRY DATA

Geometry Title: Little Plumtree
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g01

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9415

INPUT
Description:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.12	26.24	402.8	37.49	401.11	45.42	400.62	48.26	399.66
57.81	396.45	62.4	396.28	68.31	398.25	73.47	399.97	90.46	400.81
104.93	402.16	119.34	403.65						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	45.42	.04	73.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.42	73.47	133.08	132.78	133.29	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9282

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	35.14	406	35.66	405.94	37.16	405.8	38.48	405.69
39.65	405.61	40.74	405.54	41.04	405.53	43.06	405.42	44.88	405.36
45.26	405.34	49.17	405.25	52.19	405.14	55.17	405.08	56.39	405.02
57.09	404.98	57.75	404.98	60.06	404.81	61.67	404.8	62.71	404.79
69.47	404.07	69.52	404.06	69.61	404.06	70.1	404	73.98	403.56
74.29	403.54	74.75	403.51	76.65	403.33	77.5	403.29	81.52	402.95
87.95	402.58	88.09	402.57	88.21	402.57	118.53	401.16	134.44	399.95
137.69	399.03	137.7	399.03	138.85	398.71	142.58	397.27	143.65	395.11
150.75	395.34	151.63	396.77	158.22	398.18	161.45	398.87	170.55	399.65
181.15	401.18	190.16	401.93	209.71	402.66	209.76	402.66	210.1	402.67
210.35	402.68	210.6	402.68	213.79	402.78	216.31	402.85	218.75	402.92
255.28	404	261.74	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	138.85	.04	161.45	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.85	161.45	61.4	57.86	54.02	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	84.3	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9224

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.82	402.69
143.12	402.75	163.4	402.09	174.73	401.46	181.84	399.73	181.86	399.72
187.51	395.32	196.08	395.12	197.79	396.62	203.28	397.38	203.29	397.39
203.77	397.45	211.36	399.8	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	211.36	.065

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
181.84 211.36 128.56 130.35 131.84 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	168.9	401	F
220	321.72	401	F

CULVERT

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9100

INPUT
Description: Ramblewood and N Chatham
Distance from Upstream XS = 38
Deck/Roadway Width = 59
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
170	401	220	401

Upstream Bridge Cross Section Data
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.82	402.69
143.12	402.75	163.4	402.09	174.73	401.46	181.84	399.73	181.86	399.72
187.51	395.32	196.08	395.12	197.79	396.62	203.28	397.38	203.29	397.39
203.77	397.45	211.36	399.8	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	211.36	.065

Bank Sta: Left Right Coeff Contr. Expan.
181.84 211.36 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	168.9	401	F

```
     220  321.72     401       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     100     401             210     401

Downstream Bridge Cross Section Data
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     404   51.12     404   73.72  402.14   74.58  402.06   74.68  402.06
   74.73  402.05    74.8  402.05   74.85  402.04   84.11  401.29   94.67   400.9
   95.13  400.79   103.9  401.19  116.56  401.37  121.51  401.23  133.12  400.48
  139.21  397.91  139.64   397.7  145.48  394.82  155.07   394.9  161.53   398.9
  161.54   398.9  162.31  399.38  169.42  400.29  184.45  400.51  198.05  400.61
  215.34  401.69  221.16     402  228.05  402.64  229.72  402.74  231.21  402.87
  232.43  402.97  234.41  403.11  235.31  403.17  237.42  403.31  244.27  403.66
  244.61  403.68   244.9   403.7  250.59     404  250.91  404.01  250.94  404.02
  256.32  404.26  256.52  404.26  257.04  404.28  261.82   404.5  273.83  405.17
  276.99  405.33  279.05  405.48  281.29  405.64  283.55  405.76   286.4     406
  288.12  406.13  288.52  406.16  293.59  406.53

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   94.67    .025  121.51    .055  139.64    .016  161.53    .055
  169.42    .025  198.05    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        139.64  161.53            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     138     398       F
     162  293.59     398       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     6.1    41.7     410

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 8      89     .013     .013        0                   .4                1
Upstream   Elevation =  395.73
           Centerline Station =  193
Downstream Elevation =  395.48
           Centerline Station =  150.5

CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        189.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          8.21
  Q Barrel (cfs)            189.00    Culv Vel DS (ft/s)          8.47
  E.G. US. (ft)             399.50    Culv Inv El Up (ft)       395.73
  W.S. US. (ft)             399.39    Culv Inv El Dn (ft)       395.48
  E.G. DS (ft)              397.65    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              396.86    Culv Exit Loss (ft)         1.18
  Delta EG (ft)               1.85    Culv Entr Loss (ft)         0.42
  Delta WS (ft)               2.53    Q Weir (cfs)
  E.G. IC (ft)              399.32    Weir Sta Lft (ft)
  E.G. OC (ft)              399.50    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        398.03    Weir Max Depth (ft)
  Culv WS Outlet (ft)       397.71    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.30    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.23    Min El Weir Flow (ft)     401.01
```

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	336.34	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.80
Q Barrel (cfs)	336.34	Culv Vel DS (ft/s)	10.27
E.G. US. (ft)	401.62	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	401.49	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	399.22	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	398.51	Culv Exit Loss (ft)	1.17
Delta EG (ft)	2.40	Culv Entr Loss (ft)	0.96
Delta WS (ft)	2.98	Q Weir (cfs)	60.66
E.G. IC (ft)	401.62	Weir Sta Lft (ft)	172.05
E.G. OC (ft)	401.47	Weir Sta Rgt (ft)	232.50
Culvert Control	Inlet	Weir Submerg	0.00
Culv WS Inlet (ft)	399.16	Weir Max Depth (ft)	0.68
Culv WS Outlet (ft)	398.76	Weir Avg Depth (ft)	0.52
Culv Nml Depth (ft)	3.45	Weir Flow Area (sq ft)	31.22
Culv Crt Depth (ft)	3.28	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	360.06	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	9.00
Q Barrel (cfs)	360.06	Culv Vel DS (ft/s)	9.00
E.G. US. (ft)	402.52	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.26	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	401.13	Culv Frctn Ls (ft)	0.34
W.S. DS (ft)	400.41	Culv Exit Loss (ft)	0.54
Delta EG (ft)	1.39	Culv Entr Loss (ft)	0.50
Delta WS (ft)	1.85	Q Weir (cfs)	337.94
E.G. IC (ft)	402.47	Weir Sta Lft (ft)	107.77
E.G. OC (ft)	402.52	Weir Sta Rgt (ft)	275.83
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	1.60
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	0.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	122.64
Culv Crt Depth (ft)	3.43	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	294.88	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	7.37
Q Barrel (cfs)	294.88	Culv Vel DS (ft/s)	7.37
E.G. US. (ft)	402.91	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.60	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	402.07	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	401.50	Culv Exit Loss (ft)	0.27
Delta EG (ft)	0.84	Culv Entr Loss (ft)	0.34
Delta WS (ft)	1.10	Q Weir (cfs)	567.12
E.G. IC (ft)	402.74	Weir Sta Lft (ft)	89.87
E.G. OC (ft)	402.91	Weir Sta Rgt (ft)	285.99
Culvert Control	Outlet	Weir Submerg	0.15
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	1.99
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	0.97
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	190.70
Culv Crt Depth (ft)	3.00	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	258.48	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	6.46
Q Barrel (cfs)	258.48	Culv Vel DS (ft/s)	6.46
E.G. US. (ft)	403.08	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.75	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	402.47	Culv Frctn Ls (ft)	0.18
W.S. DS (ft)	402.00	Culv Exit Loss (ft)	0.18
Delta EG (ft)	0.62	Culv Entr Loss (ft)	0.26
Delta WS (ft)	0.75	Q Weir (cfs)	686.52
E.G. IC (ft)	402.85	Weir Sta Lft (ft)	82.03
E.G. OC (ft)	403.08	Weir Sta Rgt (ft)	290.21
Culvert Control	Outlet	Weir Submerg	0.31
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	2.15
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	1.07
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	222.89
Culv Crt Depth (ft)	2.75	Min El Weir Flow (ft)	401.01

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9094

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404	51.12	404	73.72	402.14	74.58	402.06	74.68	402.06
74.73	402.05	74.8	402.05	74.85	402.04	84.11	401.29	94.67	400.9
95.13	400.79	103.9	401.19	116.56	401.37	121.51	401.23	133.12	400.48
139.21	397.91	139.64	397.7	145.48	394.82	155.07	394.9	161.53	398.9
161.54	398.9	162.31	399.38	169.42	400.29	184.45	400.51	198.05	400.61
215.34	401.69	221.16	402	228.05	402.64	229.72	402.74	231.21	402.87
232.43	402.97	234.41	403.11	235.31	403.17	237.42	403.31	244.27	403.66
244.61	403.68	244.9	403.7	250.59	404	250.91	404.01	250.94	404.02
256.32	404.26	256.52	404.26	257.04	404.28	261.82	404.5	273.83	405.17
276.99	405.33	279.05	405.48	281.29	405.64	283.55	405.76	286.4	406
288.12	406.13	288.52	406.16	293.59	406.53				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	94.67	.025	121.51	.055	139.64	.016	161.53	.055
169.42	.025	198.05	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
139.64	161.53	57.37	60.69	64.17	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	138	398	F
162	293.59	398	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
6.1	41.7	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9033

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404	54.52	404	73.75	402.26	75.58	402.09	75.64	402.08
75.71	402.08	75.76	402.07	91.39	400.68	91.77	400.49	102.07	400.62
111.47	400.85	112.04	401.3	118.01	401.21	126.27	399.38	131.85	396.43
131.86	396.42	132.13	396.28	135.54	394.33	143.52	394.25	146.97	396.1
151.92	398.65	152.18	398.79	157.76	399.84	162.63	400.24	168.26	400.49
168.8	400.26	177.99	400.05	187.01	399.75	187.54	400.09	195.78	400.92
195.83	400.93	196.85	401.14	210.93	404	212.97	404.31	215.23	404.58
220.35	405.21	226.57	406	263.3	406	266.2	406.17		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	91.39	.025	118.01	.055	132.13	.016	146.97	.055
162.63	.025	187.54	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
132.13	146.97	96.95	94.72	92.33	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
222.5	266.2	410	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
12.8	42.2	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8938

INPUT
Description:

Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406.83	25.54	406	68.91	406	69.17	405.97	69.26	405.96
74.09	405.46	76.78	405.18	79.77	404.86	87.76	404	88.56	403.9
90.95	403.6	99.23	402.55	100.92	402.33	101.42	402.26	107.11	401.8
107.69	401.77	107.71	401.77	107.8	401.76	107.85	401.76	120.05	400.14
126.04	399.87	126.55	399.66	135.93	399.95	144.47	400.28	145.09	400.64
151.45	400.71	160.73	398.11	162.66	397.11	162.67	397.11	165.14	395.84
168.52	394	176.28	393.85	179.62	395.83	182.69	396.99	187.03	398.62
195.68	399.85	201.07	400.07	201.66	399.8	209.6	399.64	220.7	399.42
221.2	399.78	228.33	399.83	228.38	399.84	229.28	399.98	241.94	402
244.19	402.33	245.2	402.41	256.53	403.57	260.47	404	263.82	404.49
264.1	404.5	265.84	404.75	266.21	404.74	266.51	404.74	269.44	405.12
281.2	406	307.11	406						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	120.05	.025	151.45	.055	165.14	.016	179.62	.055
195.68	.025	221.2	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
165.14	179.62	163.23	161.92	160.75	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
273.6	306.99	410	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
14.5	53.7	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8776

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.02	.32	404	48.65	404	62.12	402.5	66.46	402
80.78	400.01	80.88	400	80.94	399.99	83.05	399.69	85.75	399.3
85.97	399.27	86.02	399.26	94.56	398.79	95	398.66	104.7	398.95
112.97	399.21	113.61	399.61	119.65	399.47	128.08	397.38	132.67	395.23
133.23	394.97	136.73	393.04	144.47	392.95	148.08	394.88	152.66	396.57
152.67	396.58	156.39	397.95	164.19	398.93	169.62	399.23	170.14	399.01
178.25	398.86	189.11	398.71	206.52	402.51	206.57	402.53	206.77	402.6
206.99	402.68	207.26	402.78	208.93	403.39	216.05	406	217.54	406.42
223.17	408	228.58	408.88	230.19	409.09	233.25	409.56	237.39	410
260.55	410								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	94.56	.025	119.65	.055	133.23	.016	148.08	.055
164.19	.025	189.11	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
133.23	148.08	150.65	147.84	144.92	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
5.3	36.7	410	242.6	260.55	415

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8628

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400	43.24	400	67.19	398.75	67.49	398.74	67.73	398.73
68.24	398.7	68.32	398.69	68.41	398.69	68.68	398.67	68.77	398.67
85.99	397.88	92.07	397.58	92.45	397.4	102.08	397.51	110.87	397.66
111.48	398	117.04	397.75	126.38	395.5	129.16	394.42	130.11	394.05
133.66	391.99	141.81	392.03	145.69	394.2	149.16	395.59	151.61	396.57
162.06	397.95	167.53	398.25	167.98	397.98	177.17	397.66	186.26	397.42
186.67	397.61	193.56	398.98	193.62	399	193.64	399	196.35	399.64
206.39	402	212.11	403.16	216.57	404	219.52	404.54	220.37	404.68

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  222.85  405.11   224.3  405.34  225.44  405.53  227.17  405.78  227.52  405.83
  228.81     406  230.99  406.22  232.36  406.33  232.68  406.36  235.09  406.54
  237.05  406.66  237.73  406.69  238.84  406.74  239.66  406.76  241.98  406.81
  242.96  406.84  244.55  406.85  245.61  406.87  247.83  406.87  249.36  406.86
  249.93  406.85  251.39  406.82  252.48   406.8   254.7  406.71  255.71  406.68
   257.9  406.57  260.13  406.42  260.76  406.39  261.31  406.36  262.94  406.24

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   92.07    .025  117.04    .055  130.11    .016  145.69    .055
  162.06    .025  186.67    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.11  145.69           174.55  169.35  164.24             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     2.3    34.3     408   248.8  262.94     408

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8459

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0     400    9.36      400   19.64   399.33   21.18   399.35   21.52   399.32
   24.66  399.35   25.01   399.32   25.43   399.29    27.8   399.31   29.23   399.19
    31.5  399.19   32.66   399.09   33.88     399   37.04   398.98   37.68   398.93
   38.41  398.88    40.3   398.84   41.85   398.75   42.89   398.71   46.29   398.53
   46.67  398.51   47.01   398.49   52.88   398.19   53.02   398.18   53.15   398.17
   55.56  398.02   55.82      398   62.38   397.62   63.06   397.58   63.09   397.58
   63.13  397.57   63.45   397.55    63.5   397.55   63.56   397.54   70.83    396.9
   74.37  396.43   74.76   396.35   84.77   396.45   93.28   396.59   93.77    396.9
   99.65  396.57  109.58    394.6  111.17   393.84  116.68   391.22  127.02   391.25
  131.21  393.31   133.8   394.59  144.34   396.93  149.92   397.28  150.64   396.93
  159.51  396.62  169.28   396.29  183.57   398.17  183.62   398.18  183.63   398.18
  185.91  398.46  197.93      400  208.17      400  236.83   400.54

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   74.37    .025   99.65    .055  111.17    .016  131.21    .055
  144.34    .025  169.28    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        111.17  131.21           130.02  130.06   129.9             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
       0    31.8     405          F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   225.5  236.83     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8329

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  404.45      .1   404.44   10.11      404   11.46   403.88   12.95   403.74
   23.76  402.76   32.08      402   49.55   400.47   55.09      400   63.11   399.38
   68.27  398.99    69.9   398.87   74.31   398.54   76.69   398.38    77.2   398.34
   77.57  398.32    78.2   398.29   81.68      398    89.2   397.56   91.32   397.42
   102.6  396.76  105.56   396.59  106.64   396.53  110.81   396.35  111.74   396.34
  112.73  396.21  114.11   396.05  114.19   396.05  114.63      396  120.71      396
  123.02  395.96  125.61   395.91  125.66   395.91  145.26   395.65  156.65   395.61
  164.77  395.63  165.48   396.09  171.49   395.76   181.7   393.87  184.07   392.66
  184.08  392.65  188.11    390.6  199.42   390.59  204.09   392.91   204.1   392.92
   205.9  393.81  215.33   395.81  220.73   396.05  221.25    395.7  231.82   395.42
  240.94  395.26  241.45   395.36  245.66   395.51  245.71   395.51  250.67      396
  286.88     396  288.42   396.08  290.22   396.18  290.58   396.19  292.31   396.28
  292.84  396.29  311.28   397.09   313.1   397.11  313.59   397.13  315.42   397.14
  315.88  397.16  354.04      398  363.84      398  390.19   399.04  413.91      400
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  415.45     400  418.67  400.26  421.83  400.42  424.26  400.59  428.97  400.87

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  171.49    .055  184.08    .016  204.09    .055  215.33    .025
  241.45    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        184.08  204.09             163  162.96  163.01             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8166

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  407.18   10.95  406.06   11.43     406   24.94     404   31.24   403.5
   51.13     402   58.41  401.57   61.68  401.44   67.96  401.12   70.57  401.01
    75.8  400.78   92.43     400   95.26  399.73   97.88   399.5  116.77  398.02
  123.11  397.34  130.08  396.64  136.18     396  143.43  395.41  151.49  394.83
   156.8  394.67  157.23  394.43   167.2  394.49  175.42  394.64  175.99  395.07
  182.18  394.56  192.61  393.19   195.6  391.81  195.62  391.81  199.52  390.01
  209.72   389.9  215.63   392.6  216.91  393.19  226.27  394.79  232.22  395.11
  232.69  394.84  241.53  394.73  249.43  394.38  250.11  394.19  251.06  394.19
  251.58  394.34  263.46   394.7  306.44     396  310.24  396.14   314.3  396.27
  317.64  396.36  320.99  396.42  337.89  397.34   339.6  397.39  346.22     398
  352.09  399.29  355.26     400  359.79  401.05  364.78  402.01  371.43  402.81
  372.98  402.97  381.44  403.94  381.92     404  395.38  404.92  403.91   405.1
  407.31  405.27  413.83  405.43  427.96     406  430.31     406  432.23  406.23
  432.81  406.28  436.23   406.7  436.99  406.75  439.03     407  441.12  407.13
  448.98     408  457.02     408  458.29  408.06  474.42  408.42

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   156.8    .025  182.18    .055   195.6    .016  215.63    .055
  226.27    .025  251.58    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         195.6  215.63           156.55  156.02  156.27             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   439.1  474.42     410

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8010

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  402.55     7.4  402.14   36.62     400   58.24     398   76.34  397.19
    80.9  397.04  106.18     396  109.51  395.67  113.88  395.49  116.92   395.3
  123.63  395.35  126.43  395.11  130.93   395.1  131.95  395.05  137.04   395.1
  139.18  395.28  143.21  395.28  150.26     396  167.06     396  172.85  395.46
  177.16  395.09  177.83  394.49  188.81  394.76  196.75  394.99   197.4  395.47
  203.61  395.65  210.06  395.31  215.11  392.67  215.13  392.66  218.44  390.93
  224.05  389.05  227.47  388.95   234.6   391.6   235.2  391.88  241.59  394.82
  247.16  395.46  254.01  395.47   254.7  394.99  273.39  394.47  274.44  394.98
  276.64   395.3  280.47  395.38  285.76  395.58  293.73  391.98  300.77     390
  303.67     390  307.27  390.56  313.51     392  315.93   392.9   318.7     394
  327.82  395.21  342.23  397.21  347.44     398  348.71  398.27  358.84     400
   372.9  401.61  377.47     402  379.02  402.29  380.27  402.43  382.86  402.88
  384.55  403.06  385.41  403.22  389.98   403.8  394.72  404.54  404.52     406
  423.74     408  438.67     410  439.79     410  449.95  410.67  481.28  412.56

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  177.16    .025  210.06    .055  218.44    .016   234.6    .055
  247.16    .025  280.47    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        218.44   234.6            48.73   88.82  110.46             .1       .3
```

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
285.69	330.5	395.58	F

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7921

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.27	2.35	402.24	9.79	402.05	10.85	402	23.33	401.47
24.1	401.44	27.36	401.31	30.17	401.2	32.12	401.15	36.66	401.01
38.26	400.95	41.05	400.83	41.66	400.81	44.82	400.66	48.42	400.48
48.82	400.46	50.4	400.37	53.99	400.16	56.46	400	70.05	398.87
80.48	398	83.88	397.75	84.92	397.69	92.06	397.18	95.78	397
101.94	396.67	104.07	396.53	114.28	396	117.76	395.27	119.5	394.95
120.43	394.79	123.54	394.3	125.57	394	134.73	392.71	138.15	392.29
140.39	392	165.14	392	168.49	393.04	169.81	393.46	171.33	394
172.39	394.09	179.24	395.77	183.72	396.33	184.12	396.38	195.25	395.89
202.88	395.48	203.82	394.92	215.26	395.27	224.99	395.56	225.75	395.99
232.65	396.14	238.38	397.12	239	397.24	239.31	394.03	244.85	391.38
248.52	389.63	258.97	388.63	274.93	387.21	296.02	387.72	304.27	388.31
304.29	388.31	316.38	389.18	330.87	391.74	340.26	394.76	347.34	397.29
351.54	397.3	361.79	398.12	375.83	398.18	383.29	398.14	384.03	397.63
396.44	397.32	411.59	396.99	412.44	397.58	415.27	397.7	420.29	397.87
432.07	398.45								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	202.88	.025	232.65	.055	248.52	.016	316.38	.075
375.83	.025	420.29	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
248.52	316.38	168.2	186.1	189.78	.3	.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
107.24	184.19	396.379	F
184.19	248	397.12	F
317	432.07	397.12	F

CULVERT

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7800

INPUT
Description: N Chatham
Distance from Upstream XS = 26.8
Deck/Roadway Width = 53.5
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
238.39	397.12		347.34	397.29	

Upstream Bridge Cross Section Data
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.27	2.35	402.24	9.79	402.05	10.85	402	23.33	401.47
24.1	401.44	27.36	401.31	30.17	401.2	32.12	401.15	36.66	401.01
38.26	400.95	41.05	400.83	41.66	400.81	44.82	400.66	48.42	400.48
48.82	400.46	50.4	400.37	53.99	400.16	56.46	400	70.05	398.87
80.48	398	83.88	397.75	84.92	397.69	92.06	397.18	95.78	397
101.94	396.67	104.07	396.53	114.28	396	117.76	395.27	119.5	394.95
120.43	394.79	123.54	394.3	125.57	394	134.73	392.71	138.15	392.29
140.39	392	165.14	392	168.49	393.04	169.81	393.46	171.33	394
172.39	394.09	179.24	395.77	183.72	396.33	184.12	396.38	195.25	395.89
202.88	395.48	203.82	394.92	215.26	395.27	224.99	395.56	225.75	395.99
232.65	396.14	238.38	397.12	239	397.24	239.31	394.03	244.85	391.38
248.52	389.63	258.97	388.63	274.93	387.21	296.02	387.72	304.27	388.31
304.29	388.31	316.38	389.18	330.87	391.74	340.26	394.76	347.34	397.29
351.54	397.3	361.79	398.12	375.83	398.18	383.29	398.14	384.03	397.63
396.44	397.32	411.59	396.99	412.44	397.58	415.27	397.7	420.29	397.87
432.07	398.45								

```
Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  202.88    .025  232.65    .055  248.52    .016  316.38    .075
  375.83    .025  420.29    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        248.52  316.38             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
  107.24  184.19 396.379       F
  184.19     248  397.12       F
     317  432.07  397.12       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   62.45  396.84          215.18  395.36

Downstream Bridge Cross Section Data
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   396.3   17.79  396.58   44.54  396.75   56.45  397.15   62.45  396.84
   74.23  392.93   81.72  390.86   91.42  389.84   100.1  389.46  100.11  389.46
  111.61  388.95  133.43  388.16  148.98  387.75  150.92   386.4  159.56  386.53
  161.02  387.98  166.33  387.83  177.83  388.51  179.97  388.75  186.19  389.45
  198.02  393.01  215.18  395.36  227.49   394.9   228.3  394.28  238.98  394.39
  254.49   394.4  272.22  394.34  289.78  393.96     306  393.51  306.75  394.09
  309.11  394.26  310.38  394.33  310.44  394.34  310.51  394.34  324.13  394.65
  362.24     396  364.63  396.25  381.06     398  387.94  398.65  402.16     400

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  133.43     .04  177.83    .055  227.49    .025  310.38    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        133.43  215.18             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     130  395.36       F
     179  402.16  395.36       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch     6.5    9.23
FHWA Chart # 36- 31 inch corner radius; Corrugated metal
FHWA Scale # 2 - No bevels
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                12     110     .024     .024        0                  .9               1
Upstream   Elevation =  387.69
           Centerline Station =  274
Downstream Elevation =  387.21
           Centerline Station =  150

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch     6.5    9.23
FHWA Chart # 36- 31 inch corner radius; Corrugated metal
FHWA Scale # 2 - No bevels
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                12     110     .024     .024        0                  .9               1
Upstream   Elevation =  387.1
           Centerline Station =  284
Downstream Elevation =  386.26
           Centerline Station =  160

CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         85.75    Culv Full Len (ft)
```

# Barrels	1	Culv Vel US (ft/s)	2.39
Q Barrel (cfs)	85.75	Culv Vel DS (ft/s)	2.07
E.G. US. (ft)	390.85	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	390.84	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	390.68	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	390.65	Culv Exit Loss (ft)	0.04
Delta EG (ft)	0.17	Culv Entr Loss (ft)	0.08
Delta WS (ft)	0.18	Q Weir (cfs)	
E.G. IC (ft)	389.61	Weir Sta Lft (ft)	
E.G. OC (ft)	390.86	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.69	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.65	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.70	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.38	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	185.83	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.03
Q Barrel (cfs)	185.83	Culv Vel DS (ft/s)	3.72
E.G. US. (ft)	392.01	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	391.98	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	391.50	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	391.43	Culv Exit Loss (ft)	0.14
Delta EG (ft)	0.51	Culv Entr Loss (ft)	0.23
Delta WS (ft)	0.55	Q Weir (cfs)	
E.G. IC (ft)	390.76	Weir Sta Lft (ft)	
E.G. OC (ft)	392.03	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.55	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.43	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.71	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.07	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	332.69	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.91
Q Barrel (cfs)	332.69	Culv Vel DS (ft/s)	5.73
E.G. US. (ft)	393.58	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	393.52	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	392.42	Culv Frctn Ls (ft)	0.15
W.S. DS (ft)	392.26	Culv Exit Loss (ft)	0.35
Delta EG (ft)	1.16	Culv Entr Loss (ft)	0.49
Delta WS (ft)	1.26	Q Weir (cfs)	
E.G. IC (ft)	392.23	Weir Sta Lft (ft)	
E.G. OC (ft)	393.58	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	392.55	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.26	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.11	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.01	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	416.59	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.85
Q Barrel (cfs)	416.59	Culv Vel DS (ft/s)	6.81
E.G. US. (ft)	394.45	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	394.39	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	392.82	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	392.62	Culv Exit Loss (ft)	0.51
Delta EG (ft)	1.63	Culv Entr Loss (ft)	0.66
Delta WS (ft)	1.77	Q Weir (cfs)	
E.G. IC (ft)	393.02	Weir Sta Lft (ft)	
E.G. OC (ft)	394.44	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	393.06	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.62	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	5.12	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.28	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	462.82	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.28
Q Barrel (cfs)	462.82	Culv Vel DS (ft/s)	7.33
E.G. US. (ft)	394.97	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	394.90	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	393.08	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	392.85	Culv Exit Loss (ft)	0.61
Delta EG (ft)	1.89	Culv Entr Loss (ft)	0.74
Delta WS (ft)	2.05	Q Weir (cfs)	
E.G. IC (ft)	393.47	Weir Sta Lft (ft)	
E.G. OC (ft)	394.95	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	393.39	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.85	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	6.50	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.53	Min El Weir Flow (ft)	396.38

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the height of the culvert.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	103.25	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	2.41
Q Barrel (cfs)	103.25	Culv Vel DS (ft/s)	2.00
E.G. US. (ft)	390.85	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	390.84	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	390.68	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	390.65	Culv Exit Loss (ft)	0.03
Delta EG (ft)	0.17	Culv Entr Loss (ft)	0.08
Delta WS (ft)	0.18	Q Weir (cfs)	
E.G. IC (ft)	389.23	Weir Sta Lft (ft)	
E.G. OC (ft)	390.85	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.68	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.65	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.61	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.52	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	211.17	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.07
Q Barrel (cfs)	211.17	Culv Vel DS (ft/s)	3.57
E.G. US. (ft)	392.01	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	391.98	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	391.50	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	391.43	Culv Exit Loss (ft)	0.12
Delta EG (ft)	0.51	Culv Entr Loss (ft)	0.23
Delta WS (ft)	0.55	Q Weir (cfs)	
E.G. IC (ft)	390.43	Weir Sta Lft (ft)	
E.G. OC (ft)	392.00	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.51	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.43	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.46	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.24	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	365.31	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.96
Q Barrel (cfs)	365.31	Culv Vel DS (ft/s)	5.58
E.G. US. (ft)	393.58	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	393.52	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	392.42	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	392.26	Culv Exit Loss (ft)	0.33
Delta EG (ft)	1.16	Culv Entr Loss (ft)	0.50
Delta WS (ft)	1.26	Q Weir (cfs)	
E.G. IC (ft)	391.93	Weir Sta Lft (ft)	
E.G. OC (ft)	393.57	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	392.52	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.26	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.54	Weir Flow Area (sq ft)	

Culv Crt Depth (ft)	3.18	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	445.41	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.81
Q Barrel (cfs)	445.41	Culv Vel DS (ft/s)	6.65
E.G. US. (ft)	394.45	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	394.39	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	392.82	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	392.62	Culv Exit Loss (ft)	0.48
Delta EG (ft)	1.63	Culv Entr Loss (ft)	0.65
Delta WS (ft)	1.77	Q Weir (cfs)	
E.G. IC (ft)	392.70	Weir Sta Lft (ft)	
E.G. OC (ft)	394.46	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	393.09	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.62	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.16	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.44	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	482.18	Culv Full Len (ft)	48.20
# Barrels	1	Culv Vel US (ft/s)	7.21
Q Barrel (cfs)	482.18	Culv Vel DS (ft/s)	7.14
E.G. US. (ft)	394.97	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	394.90	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	393.08	Culv Frctn Ls (ft)	0.28
W.S. DS (ft)	392.85	Culv Exit Loss (ft)	0.56
Delta EG (ft)	1.89	Culv Entr Loss (ft)	0.73
Delta WS (ft)	2.05	Q Weir (cfs)	
E.G. IC (ft)	393.06	Weir Sta Lft (ft)	
E.G. OC (ft)	394.98	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	393.45	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.76	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.45	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.63	Min El Weir Flow (ft)	396.38

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7735

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.3	17.79	396.58	44.54	396.75	56.45	397.15	62.45	396.84
74.23	392.93	81.72	390.86	91.42	389.84	100.1	389.46	100.11	389.46
111.61	388.95	133.43	388.16	148.98	387.75	150.92	386.4	159.56	386.53
161.02	387.98	166.33	387.83	177.83	388.51	179.97	388.75	186.19	389.45
198.02	393.01	215.18	395.36	227.49	394.9	228.3	394.28	238.98	394.39
254.49	394.4	272.22	394.34	289.78	393.96	306	393.51	306.75	394.09
309.11	394.26	310.38	394.33	310.44	394.34	310.51	394.34	324.13	394.65
362.24	396	364.63	396.25	381.06	398	387.94	398.65	402.16	400

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	133.43	.04	177.83	.055	227.49	.025	310.38	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
133.43	215.18	142.82	90.04	69.09	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	130	395.36	F
179	402.16	395.36	F

LATERAL STRUCTURE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7717

INPUT
Description: N Chatham Overflow
Lateral structure position = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width = 2
Weir Coefficient = 2
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-50	395.36	39.54	393.75	124.15	392.21	186.01	391.2	247	390.9

Weir crest shape = Broad Crested

LATERAL STRUCTURE OUTPUT Profile #2-YR Lateral Structure

E.G. US. (ft)	390.68	Weir Sta US (ft)	
W.S. US. (ft)	390.65	Weir Sta DS (ft)	
E.G. DS (ft)	390.32	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.29	Wr Top Wdth (ft)	
Q US (cfs)	189.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	190.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #10-YR Lateral Structure

E.G. US. (ft)	391.50	Weir Sta US (ft)	
W.S. US. (ft)	391.43	Weir Sta DS (ft)	
E.G. DS (ft)	390.78	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.73	Wr Top Wdth (ft)	
Q US (cfs)	397.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	403.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #50-YR Lateral Structure

E.G. US. (ft)	392.42	Weir Sta US (ft)	124.15
W.S. US. (ft)	392.26	Weir Sta DS (ft)	247.00
E.G. DS (ft)	391.24	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	391.15	Wr Top Wdth (ft)	62.87
Q US (cfs)	698.00	Weir Max Depth (ft)	0.25
Q Leaving Total (cfs)	6.95	Weir Avg Depth (ft)	0.14
Q DS (cfs)	734.01	Weir Flow Area (sq ft)	8.59
Perc Q Leaving	1.00	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	6.95	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	

Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Lateral Structure

E.G. US. (ft)	392.82	Weir Sta US (ft)	124.15
W.S. US. (ft)	392.61	Weir Sta DS (ft)	247.00
E.G. DS (ft)	391.42	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	391.32	Wr Top Wdth (ft)	74.94
Q US (cfs)	862.00	Weir Max Depth (ft)	0.42
Q Leaving Total (cfs)	22.80	Weir Avg Depth (ft)	0.27
Q DS (cfs)	904.52	Weir Flow Area (sq ft)	20.57
Perc Q Leaving	2.61	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	22.80	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Lateral Structure

E.G. US. (ft)	393.08	Weir Sta US (ft)	124.15
W.S. US. (ft)	392.85	Weir Sta DS (ft)	247.00
E.G. DS (ft)	391.55	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	391.45	Wr Top Wdth (ft)	83.89
Q US (cfs)	945.00	Weir Max Depth (ft)	0.55
Q Leaving Total (cfs)	39.95	Weir Avg Depth (ft)	0.37
Q DS (cfs)	1018.35	Weir Flow Area (sq ft)	30.94
Perc Q Leaving	4.20	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	39.95	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7645

INPUT
Description:
Station Elevation Data   num=   61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.02	4.94	394	10.64	393.74	10.96	393.73	15.06	393.54
15.59	393.52	17.34	393.44	18.71	393.39	49.35	392.967	57.1	392.86
66.29	390.32	77.21	389.99	93.33	389.71	104.18	390.05	105.31	389.72
111.39	387.95	114.49	386.68	118.37	386.41	125.33	389.1	127.91	390.1
143.93	391.75	153.06	392.71	168.44	393.75	177.22	393.47	177.5	393.47
223.31	393.03	223.82	393.02	233.1	393.29	233.46	393.29	236.26	393.4
238.69	393.5	238.95	393.5	244.54	393.77	244.67	393.77	245.96	393.83
247.21	393.88	251.47	394	254.69	394.09	255.85	394.13	255.98	394.14
257.17	394.2	257.4	394.22	257.65	394.24	258.72	394.31	259.55	394.37

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  260.71  394.46  261.77  394.54  264.41  394.72  281.83     396  291.62  396.82
  297.74  397.33  301.31  397.63  305.66     398  307.68  398.37  308.27  398.49
  309.55  398.75  313.77  399.57  315.97     400  317.17  400.15  321.34  400.67
  323.25   400.9

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025   49.35    .075  104.18     .04  127.91    .055  177.22    .025
  236.26    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        104.18  168.44            85.44   84.61   84.17             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7560

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     398   13.16     398    16.3  397.86   18.69  397.75   21.57  397.62
   52.62     396   54.72     396   77.17     394   88.58  392.95   92.96  392.55
   99.27  392.07   99.47  392.05  100.16     392  114.95  390.39  115.47  390.33
  122.74  389.56   134.6  389.13   140.5  389.75   150.4  389.33  151.86  389.98
  153.73  389.71  154.61  389.59   157.9  388.19  158.89  386.17  161.21   385.7
  165.61  386.15   169.3  388.27  173.13  388.38  174.07  388.45  174.09  388.45
  180.17   388.9  196.18  390.45  213.33   392.2   229.1  392.21  233.65  391.75
   234.4  391.16  235.56  391.26  237.87   391.3  278.66  391.93  278.71  391.92
  279.16  391.98  279.36     392  282.97     392  285.84  391.69  286.14  391.65
  288.03  391.47  288.42  391.42  290.38  391.27  290.86  391.23  293.03   391.1
  293.77  391.08  295.03  391.06  295.75  391.07  296.26   391.1     297  391.13
  297.79  391.21  298.72  391.34  299.12  391.38  300.22  391.58  301.48  391.83
  302.25     392  303.24  392.23  305.23  392.71  308.78  393.64  309.52  393.84
  310.08     394  324.25  395.81   325.8     396  345.06     398  345.97   398.2
   346.5  398.32   349.1   398.9   354.1     400  361.13  401.05  366.82     402

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   157.9     .04   169.3    .055   234.4    .025  278.71    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         157.9  213.33            62.59   61.86   60.62             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  282.96  302.26     392       T
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
       0    32.9     400

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7499

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.55    9.17  397.27   24.09  396.85   29.99   396.7   33.44  396.57
   39.96  396.38   49.86     396   52.49     396   55.42  395.85   56.63  395.81
    58.3  395.73   60.74  395.64   64.59  395.46    66.9  395.37   70.43   395.2
   89.36  394.57   93.12  394.44  106.41  393.95  123.58  393.69  124.46   393.7
  128.86  393.64  136.64  393.51  140.68  393.47  147.39  393.47  148.97  393.45
  155.58   393.5  161.68  393.48  162.44  393.46  164.58  393.44  170.22  393.22
  181.89  392.72  201.39     392  217.03     390  224.47  389.79   236.8  388.86
  248.34  388.61  264.24  389.13  276.64  389.89  280.11  387.94  283.32  387.81
     287  387.66  292.53  387.02   293.3  385.99  296.46  385.87   300.8  385.88
  302.11  388.06  303.42  388.47  303.43  388.47  304.28  388.74  309.18  388.83
   317.6  390.64  326.22   391.2  334.94  390.92  335.64  390.24  344.52  390.57
   373.6 390.177  386.74     390  388.74   388.5  406.08   388.5  408.08     390
  413.69  392.08  415.28  392.61  419.37     394  422.85  394.56  430.78     396
  436.98  396.71  449.57     398  458.27  399.13   461.4  399.37  463.76  399.64
  467.25  399.79  467.61  399.83  469.29  399.93  472.83     400

Manning's n Values        num=       6
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     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  181.89    .055     287     .04  302.11    .055  334.94    .025
   373.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          287  326.22            62.52   61.98   61.21             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  386.59  408.08     390       T

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7437

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  396.86    34.9     396    37.3     396   65.79  394.99   72.05   394.7
   75.42  394.61   78.52  394.43   79.74  394.41  120.94     392  136.04  391.37
  155.34  390.47  159.88  390.33  181.12  390.01  191.93  390.17  197.52   390.2
  205.41  390.17  210.12  390.23  222.25  390.79   231.8  390.65  235.24   390.8
   239.5  390.72   242.6  390.51   243.7  393.81  244.38  393.85  244.52  393.29
   252.3  393.97  265.38  393.16  272.52  391.32  282.48  390.12  291.46  388.97
  291.48  388.96  293.97  388.64  295.61  384.71  296.77  385.07   298.3   384.3
  298.98  384.16  301.25  384.19  305.22  384.12  308.47   383.8  309.04  384.54
  315.03  386.16  316.94  386.68   328.9   390.9  343.15  390.83  353.17  390.51
  353.89  389.87  355.55  389.89  373.23  390.07  390.11     390  403.96     390
  407.91  389.06  411.03  388.51  411.66  388.45  414.31     388  418.89     388
   423.5  388.96  423.78  388.99  427.54     390  430.04  391.02  432.84     392
  437.06  393.18  439.65     394   455.4     396  464.83  396.74  470.72  397.12
  472.23  397.16   478.3  397.45  483.36   397.5  496.04   397.8   500.1     398
  505.53  398.38  519.88  399.49  524.94  399.82     529     400

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  244.52    .055  296.77     .04  315.03    .055  353.17    .025
  390.11    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        293.97   328.9             78.48   78.48   79.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0     292  390.32       F
     330  403.94  390.32       F
  403.94  427.58     390       T

CULVERT


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7400

INPUT
Description: Private Drive to School/Church
Distance from Upstream XS =      19
Deck/Roadway Width        =    26.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       3
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     273 390.523           293.3  390.83           330.1 390.275

Upstream Bridge Cross Section Data
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  396.86    34.9     396    37.3     396   65.79  394.99   72.05   394.7
   75.42  394.61   78.52  394.43   79.74  394.41  120.94     392  136.04  391.37
  155.34  390.47  159.88  390.33  181.12  390.01  191.93  390.17  197.52   390.2
  205.41  390.17  210.12  390.23  222.25  390.79   231.8  390.65  235.24   390.8
   239.5  390.72   242.6  390.51   243.7  393.81  244.38  393.85  244.52  393.29
   252.3  393.97  265.38  393.16  272.52  391.32  282.48  390.12  291.46  388.97
  291.48  388.96  293.97  388.64  295.61  384.71  296.77  385.07   298.3   384.3
  298.98  384.16  301.25  384.19  305.22  384.12  308.47   383.8  309.04  384.54
  315.03  386.16  316.94  386.68   328.9   390.9  343.15  390.83  353.17  390.51
  353.89  389.87  355.55  389.89  373.23  390.07  390.11     390  403.96     390
  407.91  389.06  411.03  388.51  411.66  388.45  414.31     388  418.89     388
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   423.5  388.96  423.78  388.99  427.54     390  430.04  391.02  432.84     392
  437.06  393.18  439.65     394   455.4     396  464.83  396.74  470.72  397.12
  472.23  397.16   478.3  397.45  483.36   397.5  496.04   397.8   500.1     398
  505.53  398.38  519.88  399.49  524.94  399.82     529     400

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  244.52    .055  296.77     .04  315.03    .055  353.17    .025
  390.11    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        293.97   328.9            .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0     292  390.32       F
     330  403.94  390.32       F
  403.94  427.58     390       T

Downstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  148.65  389.87           151.8     390           244.9 390.523
   264.8  390.83           301.1 390.275             322   390.1

Downstream Bridge Cross Section Data
Station Elevation Data    num=      81
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  396.57   19.18     396   25.02     396   26.23  395.94   29.88  395.76
   31.08  395.72   32.73  395.65   43.33  395.14   53.01  394.74   57.42  394.54
      60  394.44   71.11     394   82.39  393.29   85.33  393.09   90.62  392.73
    91.6  392.66   95.73   392.4   97.19   392.3  101.89  392.04  102.02  392.03
  102.64     392  111.71  391.66  112.52  391.62  116.39  391.46  117.91  391.39
  119.63  391.31  127.79  390.92  128.88  390.86  133.39  390.64  146.33     390
  148.65  389.87   197.8 389.235  207.48  389.11  247.02  388.78  260.06  386.56
  261.83  386.25     267  384.04  271.78  383.96  276.29  383.89   279.1  385.82
  283.58  386.51   283.6  386.51  293.28     388  308.92  391.17  338.91  390.22
  343.99     390  364.27     390  364.77  389.75  400.63  389.75  401.13     390
  429.27     390  443.29  391.39  445.37  391.46  446.23  391.48  446.91  391.51
   447.8  391.52   448.1  391.53     449  391.53   449.3  391.55   450.2  391.55
  468.04     392  470.36     392  473.67  392.18  474.82  392.24  482.25  392.66
  485.63  392.85  492.04  393.22   499.3  393.61  500.79  393.69  506.62     394
  510.56     394  529.82  394.67  530.59  394.68  532.27  394.85  533.97  395.03
  534.59  395.05  536.96  395.34  537.45  395.36  542.27     396  545.21     396
  552.15  396.29

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025   197.8    .055  261.83     .04   279.1    .055  364.77    .025
  401.13    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        261.83  308.92            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     260   387.5       F
     282  552.15   387.5       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1      Circular     5.5
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               5.5    55.2     .013     .013        0                  .5                1
Upstream   Elevation =  384.18
           Centerline Station =  302
Downstream Elevation =  383.96
           Centerline Station =  271.8
```

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	175.71	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.97
Q Barrel (cfs)	175.71	Culv Vel DS (ft/s)	10.31
E.G. US. (ft)	390.32	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	390.29	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	387.71	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	387.58	Culv Exit Loss (ft)	1.61
Delta EG (ft)	2.61	Culv Entr Loss (ft)	0.77
Delta WS (ft)	2.71	Q Weir (cfs)	11.22
E.G. IC (ft)	390.24	Weir Sta Lft (ft)	327.14
E.G. OC (ft)	390.32	Weir Sta Rgt (ft)	428.32
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	388.00	Weir Max Depth (ft)	0.32
Culv WS Outlet (ft)	387.67	Weir Avg Depth (ft)	0.31
Culv Nml Depth (ft)	3.82	Weir Flow Area (sq ft)	7.67
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	195.99	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.16
Q Barrel (cfs)	195.99	Culv Vel DS (ft/s)	9.03
E.G. US. (ft)	390.78	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	390.73	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	388.89	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	388.68	Culv Exit Loss (ft)	1.05
Delta EG (ft)	1.88	Culv Entr Loss (ft)	0.65
Delta WS (ft)	2.04	Q Weir (cfs)	207.01
E.G. IC (ft)	390.77	Weir Sta Lft (ft)	149.18
E.G. OC (ft)	390.78	Weir Sta Rgt (ft)	429.40
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	388.82	Weir Max Depth (ft)	0.89
Culv WS Outlet (ft)	388.68	Weir Avg Depth (ft)	0.48
Culv Nml Depth (ft)	4.17	Weir Flow Area (sq ft)	101.90
Culv Crt Depth (ft)	3.92	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	174.83	Culv Full Len (ft)	55.20
# Barrels	1	Culv Vel US (ft/s)	7.36
Q Barrel (cfs)	174.83	Culv Vel DS (ft/s)	7.36
E.G. US. (ft)	391.24	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	391.15	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	390.06	Culv Frctn Ls (ft)	0.15
W.S. DS (ft)	389.83	Culv Exit Loss (ft)	0.60
Delta EG (ft)	1.18	Culv Entr Loss (ft)	0.42
Delta WS (ft)	1.33	Q Weir (cfs)	559.18
E.G. IC (ft)	391.19	Weir Sta Lft (ft)	138.95
E.G. OC (ft)	391.24	Weir Sta Rgt (ft)	430.65
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	389.68	Weir Max Depth (ft)	1.36
Culv WS Outlet (ft)	389.46	Weir Avg Depth (ft)	0.84
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	220.75
Culv Crt Depth (ft)	3.70	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	152.81	Culv Full Len (ft)	55.20
# Barrels	1	Culv Vel US (ft/s)	6.43
Q Barrel (cfs)	152.81	Culv Vel DS (ft/s)	6.43
E.G. US. (ft)	391.42	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	391.32	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	390.50	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	390.35	Culv Exit Loss (ft)	0.49
Delta EG (ft)	0.92	Culv Entr Loss (ft)	0.32
Delta WS (ft)	0.97	Q Weir (cfs)	751.71
E.G. IC (ft)	391.34	Weir Sta Lft (ft)	134.53
E.G. OC (ft)	391.42	Weir Sta Rgt (ft)	431.22
Culvert Control	Outlet	Weir Submerg	0.14
Culv WS Inlet (ft)	389.68	Weir Max Depth (ft)	1.56
Culv WS Outlet (ft)	389.46	Weir Avg Depth (ft)	1.02
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	273.21
Culv Crt Depth (ft)	3.45	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	140.61	Culv Full Len (ft)	55.20
# Barrels	1	Culv Vel US (ft/s)	5.92
Q Barrel (cfs)	140.61	Culv Vel DS (ft/s)	5.92
E.G. US. (ft)	391.55	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	391.45	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	390.76	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	390.64	Culv Exit Loss (ft)	0.42
Delta EG (ft)	0.79	Culv Entr Loss (ft)	0.27
Delta WS (ft)	0.81	Q Weir (cfs)	877.74
E.G. IC (ft)	391.47	Weir Sta Lft (ft)	131.70
E.G. OC (ft)	391.55	Weir Sta Rgt (ft)	431.56
Culvert Control	Outlet	Weir Submerg	0.28
Culv WS Inlet (ft)	389.68	Weir Max Depth (ft)	1.68
Culv WS Outlet (ft)	389.46	Weir Avg Depth (ft)	1.12
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	305.00
Culv Crt Depth (ft)	3.30	Min El Weir Flow (ft)	390.01

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7358

INPUT
Description:
Station Elevation Data   num=   81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.57	19.18	396	25.02	396	26.23	395.94	29.88	395.76
31.08	395.72	32.73	395.65	43.33	395.14	53.01	394.74	57.42	394.54
60	394.44	71.11	394	82.39	393.29	85.33	393.09	90.62	392.73
91.6	392.66	95.73	392.4	97.19	392.3	101.89	392.04	102.02	392.03
102.64	392	111.71	391.66	112.52	391.62	116.39	391.46	117.91	391.39
119.63	391.31	127.79	390.92	128.88	390.86	133.39	390.64	146.33	390
148.65	389.87	197.8	389.235	207.48	389.11	247.02	388.78	260.06	386.56
261.83	386.25	267	384.04	271.78	383.96	276.29	383.89	279.1	385.82
283.58	386.51	283.6	386.51	293.28	388	308.92	391.17	338.91	390.22
343.99	390	364.27	390	364.77	389.75	400.63	389.75	401.13	390
429.27	390	443.29	391.39	445.37	391.46	446.23	391.48	446.91	391.51
447.8	391.52	448.1	391.53	449	391.53	449.3	391.55	450.2	391.55
468.04	392	470.36	392	473.67	392.18	474.82	392.24	482.25	392.66
485.63	392.85	492.04	393.22	499.3	393.61	500.79	393.69	506.62	394
510.56	394	529.82	394.67	530.59	394.68	532.27	394.85	533.97	395.03
534.59	395.05	536.96	395.34	537.45	395.36	542.27	396	545.21	396
552.15	396.29								

Manning's n Values   num=   6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	197.8	.055	261.83	.04	279.1	.055	364.77	.025
401.13	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
261.83	308.92	88.04	96.77	105.03	.3	.5

Ineffective Flow   num=   2

Sta L	Sta R	Elev	Permanent
0	260	387.5	F
282	552.15	387.5	F

LATERAL STRUCTURE

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7340

INPUT
Description:
Lateral structure position   = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width   =   2
Weir Coefficient   =   2
Weir Flow Reference   = Water Surface
 Weir Embankment Coordinates   num =   2

Sta	Elev	Sta	Elev
0	391.17	35	390

Weir crest shape   = Broad Crested

LATERAL STRUCTURE OUTPUT Profile #2-YR Lateral Structure

E.G. US. (ft)	387.71	Weir Sta US (ft)	
W.S. US. (ft)	387.58	Weir Sta DS (ft)	
E.G. DS (ft)	387.59	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	387.39	Wr Top Wdth (ft)	
Q US (cfs)	190.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	190.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #10-YR Lateral Structure

E.G. US. (ft)	388.89	Weir Sta US (ft)	
W.S. US. (ft)	388.68	Weir Sta DS (ft)	
E.G. DS (ft)	388.78	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	388.53	Wr Top Wdth (ft)	
Q US (cfs)	403.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	403.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #50-YR Lateral Structure

E.G. US. (ft)	390.06	Weir Sta US (ft)	
W.S. US. (ft)	389.82	Weir Sta DS (ft)	
E.G. DS (ft)	389.97	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	389.72	Wr Top Wdth (ft)	
Q US (cfs)	734.01	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	734.01	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Lateral Structure

E.G. US. (ft)	390.50	Weir Sta US (ft)	0.00
W.S. US. (ft)	390.34	Weir Sta DS (ft)	35.00
E.G. DS (ft)	390.42	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	390.22	Wr Top Wdth (ft)	7.42
Q US (cfs)	904.52	Weir Max Depth (ft)	0.22
Q Leaving Total (cfs)	0.62	Weir Avg Depth (ft)	0.11
Q DS (cfs)	903.90	Weir Flow Area (sq ft)	0.82
Perc Q Leaving	0.07	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	0.62	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Lateral Structure

E.G. US. (ft)	390.76	Weir Sta US (ft)	0.00
W.S. US. (ft)	390.64	Weir Sta DS (ft)	35.00
E.G. DS (ft)	390.69	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	390.51	Wr Top Wdth (ft)	17.08
Q US (cfs)	1018.35	Weir Max Depth (ft)	0.51
Q Leaving Total (cfs)	4.97	Weir Avg Depth (ft)	0.25
Q DS (cfs)	1013.46	Weir Flow Area (sq ft)	4.35
Perc Q Leaving	0.48	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	4.97	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7261

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.52	11.16	396.13	11.49	396.12	14.84	396	19.03	396
31.29	395.48	32.33	395.45	37.78	395.24	39.36	395.17	40.43	395.13
45.64	394.87	46.72	394.83	47.74	394.79	50.86	394.63	51.69	394.6
55.43	394.43	56.02	394.4	56.87	394.35	65.64	394	66.27	393.97
66.34	393.97	68.25	393.87	69.12	393.83	71.37	393.71	72.13	393.67
73.08	393.62	77.56	393.37	80.58	393.19	99.36	392	106.9	391.65
117.58	391.15	124.47	390.84	131.93	390.49	142.34	390	150.21	389.53
158.04	389.08	161.74	388.88	161.88	388.87	183.31	387.65	187.17	387.43
187.23	387.43	215.39	386.78	238.03	387.04	238.44	387.05	242.11	383.75
244.57	382.89	249.17	383.78	251.81	385.86	258.14	387.45	258.15	387.45
264	388.91	282.39	395.82	284.39	395.75	295.46	395.49	296.12	395.12
316.31	395.46								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	161.88	.085	238.44	.04	258.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
238.44	258.14	198.31	202.16	205.99	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7059

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.9	12.54	394.26	17.77	394	18.74	394	37.67	392.94
54.23	392	55.28	391.94	56.04	391.89	69.43	391.06	86.78	390
111.05	388.93	115.58	388.73	116.27	388.69	116.33	388.69	153.2	387.09
178.63	385.82	182.48	385.63	184.66	382.67	188.14	382.53	194.24	382.53
195.94	384.19	198.69	385.84	198.71	385.85	209.3	392.23	221.62	403.18
233.11	403.18	233.79	402.85	259.74	402.5	338.53	403.99	339.19	404
350.39	404								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	116.27	.085	178.63	.04	198.71	.085	233.11	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
178.63	198.71	168.76	169.64	170.29	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
261.9	350.39	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6890

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.3	13.98	394	17.28	394	26.86	393.7	27.04	393.7
34.09	393.42	34.57	393.4	35.15	393.38	35.72	393.35	36.46	393.31
37.31	393.27	39.62	393.17	65.29	392	68.45	391.85	70.12	391.77
78.63	391.37	110.47	390	112.55	389.88	113.04	389.85	118.83	389.49
121	389.35	128.16	388.89	132.1	388.64	138.52	388.23	139.26	388.18
151.02	388.14	177.71	386.13	206.04	385.19	209.04	382.1	209.48	381.65
214.16	381.04	217.26	381.23	221.62	384.16	221.67	384.2	221.74	384.25
221.98	384.45	222.05	384.5	226.69	388	227.2	388	227.34	388.12
229.12	389.72	229.13	389.74	229.43	390	231.07	391.47	231.68	392
231.99	392.26	234.01	394	235.13	394.96	236.34	396	238.21	397.58
238.76	398	239.84	398.64	242.65	400	247.4	401.93	247.54	402
254.08	402.28	311.77	404	314.64	404				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	78.63	.085	206.04	.04	226.69	.085	254.08	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
206.04	226.69	197.24	199.49	199.59	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
304.6	314.64	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6690

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.97	9.56	396.32	13.05	396.18	13.29	396.17	15.54	396.08
15.66	396.08	17.8	396	20.68	395.84	21.02	395.81	21.49	395.78
37.06	394.87	38.21	394.76	44.14	394.19	44.63	394.15	46.04	394
48	393.33	49.54	392.75	51.16	392	52.72	391.33	53.29	391.15
54.75	390.76	56.06	390.39	57.3	390	100.92	390	106.99	390.9
108.3	391.09	109.27	391.28	109.32	391.29	109.37	391.29	109.38	391.3
109.43	391.3	152.71	385.84	163.54	384.7	163.98	384.66	168.46	380.92
173.86	380.59	179.48	380.65	181.3	382.1	183.67	382.49	197.16	384.73
205.42	391.59	221.07	403.46	223.51	404	294.59	404	318.16	404

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	163.54	.04	181.3	.085

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

163.54	181.3		377.18	363.89	351.23	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
53.01	109.48	391.28	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3.8	21.3	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6326

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.12	.17	394.1	.39	394.08	.55	394.07	1.48	394
8.54	393.52	9.16	393.45	9.97	393.36	10.47	393.3	12.77	392.95
14.58	392.76	15.81	392.56	19.55	392	20.06	391.95	22.11	391.75
23.82	391.6	25.31	391.48	29.23	391.03	33.2	390.67	35.54	390.38
36.49	390.29	38.71	390	44.96	389.14	51.95	388	56.99	387.4
58.61	387.19	67.92	386	71.44	385.39	73.02	385.16	75.4	384.84
81.11	384.1	81.6	384.03	81.9	384	83.65	383.83	84.03	383.77
89.45	383.24	90.85	383.01	91.64	382.92	97.37	382	99.04	382
99.15	381.99	99.18	381.99	100.82	381.86	104.18	381.58	104.24	381.58
136.32	380.14	161.77	380	170.99	380.01	171.86	380.01	173.35	379.93
177.41	376.15	187.21	377.05	190.57	379.27	192.39	379.55	193.53	379.72
206.36	385.54	206.41	385.59	206.58	385.77	212.57	392	213.68	392.92
214.91	394	216.25	394.9	217.66	396	219.81	397.41	220.59	398
221.57	398.69	223.68	400	225.8	401.31	227.13	402	275.55	403.66
285.17	404	287.06	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	173.35	.04	190.57	.085

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

173.35	190.57		271.56	280.95	283.31	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6045

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	1.4	405.71	1.73	405.66	3.95	405.2	5.01	405.05
7.63	404.63	9.29	404.32	11.26	404	12.26	403.68	13.01	403.46
14.32	403.03	17.73	402	18.08	401.89	18.47	401.76	20.95	400.93
23.69	400.03	23.76	400	27.2	399.06	30.51	398	33.77	397.07
37.4	396	41.28	394.98	44.92	394	47.3	393.41	52.97	392
55.18	391.44	58.72	390.52	60.71	390	64.51	388.98	68.17	388
69.43	387.72	76.91	386	77.37	386	82.19	384.45	82.33	384.4
82.38	384.39	114.77	379.87	140.12	378.58	154.89	377.51	156.71	377.38
160.04	373.45	165.47	372.69	178.5	373.65	179.33	377.25	180.24	377.41
191.95	379.48	205.32	385.5	217.03	395.24	217.08	395.26	217.18	395.28
220.9	397.31	222.17	397.99	222.19	398.01	222.2	398.03	222.23	398.1
222.25	398.16	222.35	398.36	222.61	398.88	224.29	402	326.13	402
330.47	401.79								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	156.71	.04	179.33	.085

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

156.71	179.33		209.04	198.49	192.65	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5847

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.24	1.45	399.08	2.8	398.92	10.83	398	13.21	397.68
24.43	396	25.01	395.89	35.42	394	37.27	393.74	37.79	393.69
52.7	390.12	52.72	390.12	52.77	390.11	86.22	383	117.82	378.26
133.59	377.77	134.53	377.22	140.83	373.57	146.8	372.61	149.54	373.16
153.94	377.43	154.53	377.49	167.73	378.81	180.08	387.08	185.44	391.87
185.49	391.87	185.84	391.92	189.44	391.94	190.5	392.47	190.93	396
193.6	397.72	193.98	398	194.59	398.26	195.26	398.49	199.97	400
266.19	400	286.7	400.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	133.59	.04	153.94	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
133.59	153.94	184.54	178.51	172.27	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
274.9	286.7	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5668

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394	2.83	394	6.39	393.53	8.52	393.37	9.42	393.29
10.04	393.25	11.67	393.09	12.4	393.05	13.26	392.96	14.13	392.92
15.52	392.77	18.5	392.7	19.6	392.59	28.55	392.15	30.78	392
32.39	391.8	32.82	391.76	37.1	391.21	42.85	390.73	45	390.55
46.39	390.5	46.97	390.47	47.22	390.45	51.29	390	56.62	389.6
57.93	389.52	62.13	389.24	67.84	388.94	71.82	388.7	73.9	388.59
77.36	388.37	78.88	388.27	82.49	388	88.83	387.18	98.59	385.99
104.13	385.21	105.71	385.01	107.69	384.8	110.1	384.48	116.68	384
117.78	383.94	120.53	383.72	121.02	383.67	122.28	383.55	123.44	383.42
125.71	383.18	130.86	382.57	135.53	382	147.05	380.28	172.82	377.69
200.62	376.14	220.02	376.22	238.56	376.33	240.62	376.34	244.41	372.35
247.08	371.75	250.38	372.58	255.86	374.91	258.75	376.54	258.77	376.55
273.07	384.62	286.6	395.41	293.35	398.75	298.49	401.68	303.94	403.42
314.05	402	314.97	401.91	328.12	402	400.84	402	419.1	402.23

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	240.62	.04	258.75	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
240.62	258.75	144.79	148.68	152.52	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
398.6	419.1	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5520

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.57	1.77	392.5	2.21	392.46	11.92	392	17.09	391.5
24.53	390.74	26.95	390.45	31.64	390	34.16	389.82	35.17	389.71
39.42	389.35	45.83	388.73	54.99	388.04	61.37	387.47	63.9	387.27
66.26	387.15	67.44	387.06	71.13	386.95	79.52	386.38	86.54	385.85
89.06	385.64	90.11	385.57	94.2	385.24	97.92	384.9	101.16	384.58
106.52	384	115.88	383.23	119.25	382.99	122.02	382.84	123.86	382.73

125.85	382.65	131.94	382.26	139.57	381.73	153.36	380.63	161.65	380
162.55	379.95	187.97	378	190.84	377.16	211.86	375.32	242.87	374.82
245.72	374.78	248.59	373.11	256.95	371.96	257.18	372.1	260.09	374.7
262.9	375.22	269	376.34	285.23	385.77	295.6	394.02	300.61	398.04
301.69	400	307.46	401.12	309.84	401.46	313.85	402	342.38	402.99
343.02	402.99	351.56	403.37	352.31	403.37	354.24	403.43	354.97	403.43
356.01	403.47	356.73	403.46	357.34	403.48	358.02	403.47	359.97	403.54
361.28	403.52	361.75	403.54	388.95	403.44				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	245.72	.04	260.09	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.72	260.09	75.07	77.35	79.63	.1 .3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
373.3	388.95	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5442

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400	20.17	400	24.58	399.47	27.23	399.5	29.22	399.34
30.21	399.33	37.26	398.97	52.02	398	59.75	397.4	62.81	397.22
78.24	396	88.72	395.02	98.46	394	132.72	392.26	154.81	390
176.04	388	202.11	386.21	204.71	386	230.38	384.54	231.24	384.52
234.24	384	262.33	382.28	263.68	382.25	263.99	382.19	264.46	382.22
264.94	382.15	268.52	382	279.94	381.74	286.41	381.5	298.54	380.78
301.9	380.67	308.4	380.64	312.15	380.5	314.49	380.5	320.11	380
330.71	379.38	337.1	379.1	348.09	377.94	371.78	376.41	397.93	374.82
410.38	374.17	410.4	374.17	413.82	374	416.13	371.71	419.17	371.22
424.47	371.54	428.14	373.48	431.85	373.94	435.55	374.4	448.44	380.81
457.31	388.52	469.69	395.98	474.76	398.6	475.05	398.8	476.32	399.44
478.66	400.4	482.42	401.51	484.65	402	492.73	402	500.99	402.33
511.23	402.63	525.09	402.91	537.02	403.46	539.65	403.5	541.98	403.6
548.32	404	552.12	404.33	555.02	404.48	558.6	404.56		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	413.82	.04	428.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
413.82	428.14	0	0	0 .3	.5

SUMMARY OF MANNING'S N VALUES

River:Little Plumtree

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7
Little Plumtree	9415	.075	.04	.075				
Little Plumtree	9282	.065	.04	.065				
Little Plumtree	9224	.065	.04	.065				
Little Plumtree	9100	Culvert						
Little Plumtree	9094	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	9033	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8938	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8776	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8628	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8459	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8329	.025	.055	.016	.055	.025	.065	
Little Plumtree	8166	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8010	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	7921	.075	.025	.055	.016	.075	.025	.065
Little Plumtree	7800	Culvert						
Little Plumtree	7735	.075	.04	.055	.025	.065		
Little Plumtree	7717	Lat Struct						
Little Plumtree	7645	.025	.075	.04	.055	.025	.065	
Little Plumtree	7560	.065	.04	.055	.025	.065		
Little Plumtree	7499	.025	.055	.04	.055	.025	.065	

Little Plumtree	7437	.025	.055	.04	.055	.025	.065
Little Plumtree	7400	Culvert					
Little Plumtree	7358	.025	.055	.04	.055	.025	.065
Little Plumtree	7340	Lat Struct					
Little Plumtree	7261	.025	.085	.04	.085		
Little Plumtree	7059	.025	.085	.04	.085	.025	
Little Plumtree	6890	.025	.085	.04	.085	.025	
Little Plumtree	6690	.085	.04	.085			
Little Plumtree	6326	.085	.04	.085			
Little Plumtree	6045	.085	.04	.085			
Little Plumtree	5847	.085	.04	.085			
Little Plumtree	5668	.085	.04	.085			
Little Plumtree	5520	.085	.04	.085			
Little Plumtree	5442	.085	.04	.085			

SUMMARY OF REACH LENGTHS

River: Little Plumtree

Reach	River Sta.	Left	Channel	Right
Little Plumtree	9415	133.08	132.78	133.29
Little Plumtree	9282	61.4	57.86	54.02
Little Plumtree	9224	128.56	130.35	131.84
Little Plumtree	9100	Culvert		
Little Plumtree	9094	57.37	60.69	64.17
Little Plumtree	9033	96.95	94.72	92.33
Little Plumtree	8938	163.23	161.92	160.75
Little Plumtree	8776	150.65	147.84	144.92
Little Plumtree	8628	174.55	169.35	164.24
Little Plumtree	8459	130.02	130.06	129.9
Little Plumtree	8329	163	162.96	163.01
Little Plumtree	8166	156.55	156.02	156.27
Little Plumtree	8010	48.73	88.82	110.46
Little Plumtree	7921	168.2	186.1	189.78
Little Plumtree	7800	Culvert		
Little Plumtree	7735	142.82	90.04	69.09
Little Plumtree	7717	Lat Struct		
Little Plumtree	7645	85.44	84.61	84.17
Little Plumtree	7560	62.59	61.86	60.62
Little Plumtree	7499	62.52	61.98	61.21
Little Plumtree	7437	78.48	78.48	79.28
Little Plumtree	7400	Culvert		
Little Plumtree	7358	88.04	96.77	105.03
Little Plumtree	7340	Lat Struct		
Little Plumtree	7261	198.31	202.16	205.99
Little Plumtree	7059	168.76	169.64	170.29
Little Plumtree	6890	197.24	199.49	199.59
Little Plumtree	6690	377.18	363.89	351.23
Little Plumtree	6326	271.56	280.95	283.31
Little Plumtree	6045	209.04	198.49	192.65
Little Plumtree	5847	184.54	178.51	172.27
Little Plumtree	5668	144.79	148.68	152.52
Little Plumtree	5520	75.07	77.35	79.63
Little Plumtree	5442	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Little Plumtree

Reach	River Sta.	Contr.	Expan.
Little Plumtree	9415	.1	.3
Little Plumtree	9282	.1	.3
Little Plumtree	9224	.3	.5
Little Plumtree	9100	Culvert	
Little Plumtree	9094	.3	.5
Little Plumtree	9033	.1	.3
Little Plumtree	8938	.1	.3
Little Plumtree	8776	.1	.3
Little Plumtree	8628	.1	.3
Little Plumtree	8459	.1	.3
Little Plumtree	8329	.1	.3

Little Plumtree	8166		.1	.3
Little Plumtree	8010		.1	.3
Little Plumtree	7921		.3	.5
Little Plumtree	7800	Culvert		
Little Plumtree	7735		.3	.5
Little Plumtree	7717	Lat Struct		
Little Plumtree	7645		.1	.3
Little Plumtree	7560		.1	.3
Little Plumtree	7499		.1	.3
Little Plumtree	7437		.3	.5
Little Plumtree	7400	Culvert		
Little Plumtree	7358		.3	.5
Little Plumtree	7340	Lat Struct		
Little Plumtree	7261		.1	.3
Little Plumtree	7059		.1	.3
Little Plumtree	6890		.1	.3
Little Plumtree	6690		.1	.3
Little Plumtree	6326		.1	.3
Little Plumtree	6045		.1	.3
Little Plumtree	5847		.1	.3
Little Plumtree	5668		.1	.3
Little Plumtree	5520		.1	.3
Little Plumtree	5442		.3	.5

HEC-RAS Plan: EX River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	9415	2-YR	189.00	396.28	399.85	398.73	400.06	0.003815	3.61	52.39	25.43	0.44
Little Plumtree	9415	10-YR	397.00	396.28	401.70	399.74	401.89	0.001740	3.59	137.51	66.42	0.33
Little Plumtree	9415	50-YR	698.00	396.28	402.59	400.80	402.90	0.002271	4.74	203.80	81.51	0.39
Little Plumtree	9415	100-YR	862.00	396.28	402.97	401.26	403.34	0.002515	5.26	236.06	89.98	0.42
Little Plumtree	9415	7-30-2016	945.00	396.28	403.14	401.45	403.54	0.002652	5.51	251.18	94.82	0.43
Little Plumtree	9282	2-YR	189.00	395.11	399.47	397.90	399.63	0.002448	3.21	61.43	32.28	0.35
Little Plumtree	9282	10-YR	397.00	395.11	401.53	399.03	401.68	0.001166	3.28	165.14	74.91	0.27
Little Plumtree	9282	50-YR	698.00	395.11	402.35	400.09	402.62	0.001800	4.54	239.19	108.67	0.34
Little Plumtree	9282	100-YR	862.00	395.11	402.71	400.61	403.02	0.002049	5.06	280.68	125.78	0.37
Little Plumtree	9282	7-30-2016	945.00	395.11	402.86	400.84	403.20	0.002166	5.29	300.56	132.43	0.38
Little Plumtree	9224	2-YR	189.00	395.12	399.39	397.47	399.50	0.001519	2.60	72.56	27.75	0.28
Little Plumtree	9224	10-YR	397.00	395.12	401.49	398.46	401.62	0.000892	2.88	152.81	55.87	0.24
Little Plumtree	9224	50-YR	698.00	395.12	402.26	399.49	402.52	0.001516	4.18	215.98	110.94	0.32
Little Plumtree	9224	100-YR	862.00	395.12	402.60	399.93	402.91	0.001749	4.67	262.74	158.25	0.35
Little Plumtree	9224	7-30-2016	945.00	395.12	402.75	400.14	403.08	0.001859	4.90	287.37	184.08	0.36
Little Plumtree	9100		Culvert									
Little Plumtree	9094	2-YR	189.00	394.82	396.86	396.86	397.65	0.003475	7.11	26.57	16.91	1.00
Little Plumtree	9094	10-YR	397.00	394.82	398.51	397.92	399.22	0.001515	6.76	59.42	23.12	0.72
Little Plumtree	9094	50-YR	698.00	394.82	400.41	399.00	401.13	0.000798	6.86	114.37	44.55	0.57
Little Plumtree	9094	100-YR	862.00	394.82	401.50	399.51	402.07	0.000513	6.34	209.21	130.71	0.47
Little Plumtree	9094	7-30-2016	945.00	394.82	402.00	399.74	402.47	0.000404	5.95	278.13	145.71	0.42
Little Plumtree	9033	2-YR	189.00	394.25	396.28	396.45	397.33	0.004712	8.19	23.09	15.20	1.16
Little Plumtree	9033	10-YR	397.00	394.25	397.56	397.56	398.91	0.002770	9.37	45.59	20.08	0.98
Little Plumtree	9033	50-YR	698.00	394.25	398.81	398.81	400.71	0.002436	11.21	73.69	24.92	0.98
Little Plumtree	9033	100-YR	862.00	394.25	399.43	399.43	401.55	0.002273	11.90	90.55	29.53	0.97
Little Plumtree	9033	7-30-2016	945.00	394.25	399.94	399.75	401.96	0.001904	11.67	107.47	41.17	0.90
Little Plumtree	8938	2-YR	189.00	393.85	396.03	396.12	396.99	0.003944	7.83	24.21	15.40	1.07
Little Plumtree	8938	10-YR	397.00	393.85	397.13	397.25	398.62	0.003180	9.84	43.74	20.42	1.05
Little Plumtree	8938	50-YR	698.00	393.85	398.27	398.55	400.43	0.002971	11.99	70.08	25.92	1.07
Little Plumtree	8938	100-YR	862.00	393.85	398.81	399.17	401.28	0.002868	12.85	85.23	30.16	1.07
Little Plumtree	8938	7-30-2016	945.00	393.85	400.26	400.26	401.61	0.001162	9.87	165.03	102.76	0.72
Little Plumtree	8776	2-YR	189.00	392.95	394.87	395.17	396.13	0.006300	8.99	21.02	14.66	1.32
Little Plumtree	8776	10-YR	397.00	392.95	395.74	396.28	397.84	0.005680	11.64	35.60	18.84	1.36
Little Plumtree	8776	50-YR	698.00	392.95	396.77	397.57	399.71	0.004926	13.89	57.56	23.81	1.34
Little Plumtree	8776	100-YR	862.00	392.95	397.25	398.12	400.58	0.004709	14.85	69.47	26.13	1.34
Little Plumtree	8776	7-30-2016	945.00	392.95	397.51	398.46	400.95	0.004480	15.15	76.51	27.65	1.33
Little Plumtree	8628	2-YR	189.00	391.99	393.81	394.17	395.15	0.006848	9.26	20.41	14.48	1.37
Little Plumtree	8628	10-YR	397.00	391.99	394.62	395.26	396.89	0.006924	12.11	33.38	18.08	1.47
Little Plumtree	8628	50-YR	698.00	391.99	395.53	396.53	398.84	0.006293	14.68	52.02	22.76	1.49
Little Plumtree	8628	100-YR	862.00	391.99	395.97	397.12	399.74	0.006027	15.72	62.59	25.67	1.49
Little Plumtree	8628	7-30-2016	945.00	391.99	396.19	398.18	400.14	0.005850	16.14	68.38	27.12	1.49
Little Plumtree	8459	2-YR	189.00	391.22	392.86	393.14	393.98	0.006229	8.50	22.23	17.06	1.31
Little Plumtree	8459	10-YR	397.00	391.22	393.52	394.10	395.59	0.007670	11.54	34.45	19.80	1.53
Little Plumtree	8459	50-YR	698.00	391.22	394.16	395.21	397.56	0.008736	14.81	47.89	22.42	1.70
Little Plumtree	8459	100-YR	862.00	391.22	394.48	395.74	398.47	0.008653	16.06	55.32	23.74	1.73
Little Plumtree	8459	7-30-2016	945.00	391.22	394.64	395.99	398.89	0.008511	16.57	59.27	24.68	1.74
Little Plumtree	8329	2-YR	189.00	390.59	392.25	392.43	393.20	0.005056	7.83	24.13	17.89	1.19
Little Plumtree	8329	10-YR	397.00	390.59	393.02	393.39	394.63	0.005296	10.19	39.10	20.93	1.29
Little Plumtree	8329	50-YR	698.00	390.59	393.70	394.48	396.42	0.006002	13.24	54.24	23.64	1.44
Little Plumtree	8329	100-YR	862.00	390.59	395.91	395.01	396.94	0.001063	8.37	149.74	117.11	0.67
Little Plumtree	8329	7-30-2016	945.00	390.59	396.29	395.26	397.17	0.000871	7.97	212.25	180.79	0.62
Little Plumtree	8166	2-YR	189.00	389.90	392.26	391.86	392.71	0.001648	5.42	35.05	20.25	0.71
Little Plumtree	8166	10-YR	397.00	389.90	393.52	392.84	394.18	0.001240	6.58	64.49	28.70	0.67
Little Plumtree	8166	50-YR	698.00	389.90	395.22	393.94	395.84	0.000697	6.66	176.34	134.72	0.54
Little Plumtree	8166	100-YR	862.00	389.90	396.26	395.01	396.62	0.000374	5.57	339.78	180.14	0.41
Little Plumtree	8166	7-30-2016	945.00	389.90	396.57	395.30	396.90	0.000336	5.47	399.08	193.07	0.39
Little Plumtree	8010	2-YR	189.00	388.95	391.52	391.52	392.33	0.003365	7.24	26.39	33.12	1.00
Little Plumtree	8010	10-YR	397.00	388.95	392.57	392.57	393.85	0.002797	9.14	46.60	44.00	0.99
Little Plumtree	8010	50-YR	698.00	388.95	393.79	393.79	395.56	0.002364	10.81	75.84	54.85	0.97
Little Plumtree	8010	100-YR	862.00	388.95	394.37	394.37	396.36	0.002233	11.52	91.68	61.76	0.96
Little Plumtree	8010	7-30-2016	945.00	388.95	395.28	395.28	396.71	0.001317	10.01	144.57	136.26	0.76

HEC-RAS Plan: EX River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	7921	2-YR	189.00	387.21	390.84	388.55	390.85	0.000032	1.03	185.71	79.77	0.11
Little Plumtree	7921	10-YR	397.00	387.21	391.98	389.09	392.01	0.000044	1.52	264.25	88.00	0.14
Little Plumtree	7921	50-YR	698.00	387.21	393.52	389.61	393.58	0.000044	1.90	370.80	137.02	0.14
Little Plumtree	7921	100-YR	862.00	387.21	394.39	389.83	394.45	0.000041	2.02	430.55	150.42	0.14
Little Plumtree	7921	7-30-2016	945.00	387.21	394.90	389.94	394.97	0.000038	2.05	466.09	157.34	0.14
Little Plumtree	7800		Culvert									
Little Plumtree	7735	2-YR	189.00	386.40	390.65	388.48	390.68	0.000321	1.35	144.01	106.51	0.14
Little Plumtree	7735	10-YR	397.00	386.40	391.43	389.00	391.50	0.000655	2.25	181.92	113.10	0.20
Little Plumtree	7735	50-YR	698.00	386.40	392.26	389.59	392.42	0.001036	3.24	222.69	118.87	0.27
Little Plumtree	7735	100-YR	862.00	386.40	392.62	389.87	392.82	0.001231	3.70	240.16	121.35	0.29
Little Plumtree	7735	7-30-2016	945.00	386.40	392.85	390.01	393.08	0.001268	3.88	251.57	122.96	0.30
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	190.00	386.41	390.45	389.11	390.59	0.002446	3.13	76.09	65.51	0.38
Little Plumtree	7645	10-YR	403.00	386.41	391.04	390.39	391.33	0.004304	4.64	117.05	73.37	0.54
Little Plumtree	7645	50-YR	741.00	386.41	391.68	391.18	392.15	0.006257	6.07	166.69	81.89	0.68
Little Plumtree	7645	100-YR	927.00	386.41	391.96	391.50	392.52	0.007099	6.65	189.89	85.55	0.73
Little Plumtree	7645	7-30-2016	1058.00	386.41	392.14	391.69	392.75	0.007595	7.00	205.48	87.91	0.75
Little Plumtree	7560	2-YR	190.00	385.70	390.35	388.73	390.41	0.001272	2.19	110.59	79.82	0.27
Little Plumtree	7560	10-YR	403.00	385.70	390.83	389.85	390.99	0.002890	3.43	151.60	89.07	0.40
Little Plumtree	7560	50-YR	741.00	385.70	391.31	390.57	391.61	0.005351	4.84	196.74	111.45	0.54
Little Plumtree	7560	100-YR	927.00	385.70	391.50	390.84	391.88	0.006686	5.48	217.71	130.94	0.60
Little Plumtree	7560	7-30-2016	1058.00	385.70	391.64	391.02	392.06	0.007410	5.83	234.50	144.53	0.63
Little Plumtree	7499	2-YR	190.00	385.87	390.32	388.32	390.35	0.000549	1.67	173.59	149.32	0.18
Little Plumtree	7499	10-YR	403.00	385.87	390.77	389.38	390.84	0.001122	2.50	251.95	183.73	0.27
Little Plumtree	7499	50-YR	740.99	385.87	391.23	390.18	391.33	0.001801	3.23	339.81	203.97	0.35
Little Plumtree	7499	100-YR	925.96	385.87	391.41	390.45	391.53	0.002133	3.58	376.23	205.84	0.38
Little Plumtree	7499	7-30-2016	1054.56	385.87	391.54	390.62	391.67	0.002281	3.76	403.18	207.21	0.38
Little Plumtree	7437	2-YR	190.00	383.80	390.29	386.00	390.32	0.000295	1.31	152.79	170.17	0.11
Little Plumtree	7437	10-YR	403.00	383.80	390.73	386.99	390.78	0.000644	2.01	263.36	215.21	0.17
Little Plumtree	7437	50-YR	734.01	383.80	391.15	388.09	391.23	0.001051	2.69	367.94	258.59	0.21
Little Plumtree	7437	100-YR	904.52	383.80	391.32	388.57	391.42	0.001201	2.94	412.08	264.15	0.23
Little Plumtree	7437	7-30-2016	1018.35	383.80	391.45	388.87	391.55	0.001232	3.03	446.76	268.07	0.23
Little Plumtree	7400		Culvert									
Little Plumtree	7358	2-YR	190.00	383.89	387.58	386.03	387.71	0.001818	2.90	69.06	36.48	0.34
Little Plumtree	7358	10-YR	403.00	383.89	388.68	387.02	388.89	0.002393	3.81	116.36	49.04	0.40
Little Plumtree	7358	50-YR	734.01	383.89	389.83	388.15	390.06	0.002398	4.25	233.85	186.42	0.40
Little Plumtree	7358	100-YR	904.52	383.89	390.35	388.55	390.50	0.001683	3.71	354.34	263.34	0.34
Little Plumtree	7358	7-30-2016	1018.35	383.89	390.64	388.78	390.76	0.001375	3.43	433.87	282.80	0.30
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	190.00	382.89	387.06	385.94	387.38	0.005947	4.56	46.37	53.39	0.53
Little Plumtree	7261	10-YR	403.00	382.89	388.28	387.58	388.58	0.004167	4.91	136.97	89.14	0.48
Little Plumtree	7261	50-YR	734.01	382.89	389.53	388.37	389.80	0.002982	5.15	265.18	115.38	0.43
Little Plumtree	7261	100-YR	903.90	382.89	390.01	388.68	390.27	0.002711	5.25	322.95	124.76	0.41
Little Plumtree	7261	7-30-2016	1013.46	382.89	390.29	388.95	390.55	0.002573	5.31	359.02	131.49	0.41
Little Plumtree	7059	2-YR	190.00	382.53	385.76	384.72	386.10	0.006775	4.69	40.47	18.66	0.56
Little Plumtree	7059	10-YR	403.00	382.53	387.17	386.09	387.63	0.005185	5.59	88.29	49.45	0.53
Little Plumtree	7059	50-YR	734.01	382.53	388.44	387.40	389.03	0.004787	6.64	171.32	80.91	0.54
Little Plumtree	7059	100-YR	903.90	382.53	388.97	387.90	389.56	0.004474	6.89	217.23	93.64	0.53
Little Plumtree	7059	7-30-2016	1013.46	382.53	389.33	388.19	389.89	0.004044	6.85	252.58	102.42	0.51
Little Plumtree	6890	2-YR	190.00	381.04	384.69	383.63	385.04	0.005688	4.74	40.06	15.78	0.52
Little Plumtree	6890	10-YR	403.00	381.04	386.04	384.90	386.63	0.006585	6.25	73.94	43.64	0.59
Little Plumtree	6890	50-YR	734.01	381.04	387.49	386.60	388.13	0.005772	6.94	154.70	66.35	0.57
Little Plumtree	6890	100-YR	903.90	381.04	388.09	387.09	388.73	0.005334	7.09	197.50	75.66	0.56
Little Plumtree	6890	7-30-2016	1013.46	381.04	388.41	387.37	389.10	0.005321	7.38	225.39	92.02	0.56
Little Plumtree	6690	2-YR	190.00	380.59	383.13	382.66	383.62	0.009306	5.63	36.36	21.74	0.68
Little Plumtree	6690	10-YR	403.00	380.59	384.33	383.80	385.08	0.009347	7.15	67.58	30.39	0.72
Little Plumtree	6690	50-YR	734.01	380.59	385.24	385.07	386.50	0.012433	9.52	98.89	39.35	0.86
Little Plumtree	6690	100-YR	903.90	380.59	385.57	385.55	387.11	0.013805	10.60	112.48	42.89	0.91
Little Plumtree	6690	7-30-2016	1013.46	380.59	385.84	385.84	387.47	0.013705	11.00	124.29	45.74	0.92

HEC-RAS Plan: EX River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	6326	2-YR	190.00	376.15	378.97	378.67	379.58	0.013648	6.27	30.32	15.74	0.80
Little Plumtree	6326	10-YR	403.00	376.15	380.16	379.84	381.13	0.012820	7.93	56.60	58.65	0.82
Little Plumtree	6326	50-YR	734.01	376.15	381.29	381.29	382.30	0.010222	8.80	138.36	86.28	0.77
Little Plumtree	6326	100-YR	903.90	376.15	381.74	381.70	382.73	0.009290	9.01	180.06	95.79	0.75
Little Plumtree	6326	7-30-2016	1013.46	376.15	382.03	381.89	382.99	0.008702	9.08	207.74	101.42	0.73
Little Plumtree	6045	2-YR	190.00	372.69	377.32	374.62	377.40	0.000797	2.24	85.00	22.95	0.20
Little Plumtree	6045	10-YR	403.00	372.69	378.74	375.57	378.91	0.001178	3.36	136.48	50.87	0.26
Little Plumtree	6045	50-YR	734.01	372.69	380.13	376.72	380.41	0.001517	4.47	230.37	80.50	0.31
Little Plumtree	6045	100-YR	903.90	372.69	380.69	377.22	381.01	0.001609	4.86	276.72	85.74	0.32
Little Plumtree	6045	7-30-2016	1013.46	372.69	381.02	377.55	381.36	0.001657	5.08	305.25	88.81	0.33
Little Plumtree	5847	2-YR	190.00	372.61	376.91	375.30	377.13	0.003115	3.75	50.73	18.34	0.40
Little Plumtree	5847	10-YR	403.00	372.61	378.04	376.55	378.51	0.004815	5.51	75.93	35.10	0.51
Little Plumtree	5847	50-YR	734.01	372.61	379.09	377.95	379.88	0.006078	7.34	126.86	55.84	0.60
Little Plumtree	5847	100-YR	903.90	372.61	379.53	378.72	380.44	0.006341	7.98	152.64	59.49	0.62
Little Plumtree	5847	7-30-2016	1013.46	372.61	379.80	379.07	380.77	0.006461	8.33	168.76	61.66	0.64
Little Plumtree	5668	2-YR	190.00	371.75	376.29	374.81	376.53	0.003626	3.96	50.45	50.64	0.42
Little Plumtree	5668	10-YR	403.00	371.75	377.32	376.07	377.67	0.004128	5.16	123.02	80.66	0.48
Little Plumtree	5668	50-YR	734.01	371.75	378.50	377.50	378.89	0.003627	5.83	229.85	97.52	0.47
Little Plumtree	5668	100-YR	903.90	371.75	379.03	377.87	379.41	0.003394	6.04	282.20	103.62	0.46
Little Plumtree	5668	7-30-2016	1013.46	371.75	379.33	378.06	379.72	0.003286	6.16	314.55	107.22	0.46
Little Plumtree	5520	2-YR	190.00	371.96	375.31	374.73	375.76	0.008099	5.48	43.43	51.03	0.63
Little Plumtree	5520	10-YR	403.00	371.96	376.62	376.01	377.01	0.004866	5.72	125.29	72.52	0.53
Little Plumtree	5520	50-YR	734.01	371.96	377.98	376.86	378.35	0.003621	6.10	233.08	83.79	0.48
Little Plumtree	5520	100-YR	903.90	371.96	378.50	377.26	378.89	0.003586	6.48	278.31	91.23	0.49
Little Plumtree	5520	7-30-2016	1013.46	371.96	378.80	377.45	379.21	0.003581	6.71	306.31	95.65	0.49
Little Plumtree	5442	2-YR	190.00	371.22	375.05	373.68	375.27	0.002781	3.92	64.12	42.74	0.39
Little Plumtree	5442	10-YR	403.00	371.22	376.38	375.01	376.69	0.002782	4.97	137.50	67.34	0.42
Little Plumtree	5442	50-YR	734.01	371.22	377.72	376.19	378.10	0.002784	5.92	243.21	90.76	0.43
Little Plumtree	5442	100-YR	903.90	371.22	378.25	376.63	378.65	0.002781	6.28	293.19	98.13	0.44
Little Plumtree	5442	7-30-2016	1013.46	371.22	378.55	376.88	378.97	0.002780	6.47	323.66	101.63	0.44

HEC-RAS Plan: EX River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	9415	2-YR	400.06	399.85	0.20	0.42	0.01		189.00		25.43	0.47
Little Plumtree	9415	10-YR	401.89	401.70	0.19	0.19	0.01	4.83	370.35	21.82	66.42	0.38
Little Plumtree	9415	50-YR	402.90	402.59	0.31	0.27	0.01	22.09	607.99	67.92	81.51	0.62
Little Plumtree	9415	100-YR	403.34	402.97	0.37	0.30	0.02	32.82	730.60	98.58	89.98	0.74
Little Plumtree	9415	7-30-2016	403.54	403.14	0.40	0.32	0.02	38.31	791.89	114.80	94.82	0.81
Little Plumtree	9282	2-YR	399.63	399.47	0.16	0.11	0.02	0.60	187.35	1.05	32.28	0.35
Little Plumtree	9282	10-YR	401.68	401.53	0.15	0.06	0.01	20.05	344.70	32.25	74.91	0.30
Little Plumtree	9282	50-YR	402.62	402.35	0.26	0.10	0.00	64.12	561.46	72.42	108.67	0.55
Little Plumtree	9282	100-YR	403.02	402.71	0.31	0.11	0.00	97.18	665.23	99.59	125.78	0.67
Little Plumtree	9282	7-30-2016	403.20	402.86	0.34	0.12	0.00	116.91	714.22	113.87	132.43	0.72
Little Plumtree	9224	2-YR	399.50	399.39	0.11				189.00		27.75	0.23
Little Plumtree	9224	10-YR	401.62	401.49	0.13			3.78	386.92	6.30	55.87	0.23
Little Plumtree	9224	50-YR	402.52	402.26	0.26			13.07	655.83	29.11	110.94	0.46
Little Plumtree	9224	100-YR	402.91	402.60	0.31			24.96	780.52	56.52	158.25	0.57
Little Plumtree	9224	7-30-2016	403.08	402.75	0.33			33.38	839.60	72.02	184.08	0.62
Little Plumtree	9100		Culvert									
Little Plumtree	9094	2-YR	397.65	396.86	0.79	0.25	0.08		189.00		16.91	0.32
Little Plumtree	9094	10-YR	399.22	398.51	0.71	0.12	0.19	0.39	396.61		23.12	0.24
Little Plumtree	9094	50-YR	401.13	400.41	0.72	0.07	0.35	7.51	687.49	3.00	44.55	0.21
Little Plumtree	9094	100-YR	402.07	401.50	0.57	0.05	0.47	22.67	785.64	53.69	130.71	0.17
Little Plumtree	9094	7-30-2016	402.47	402.00	0.47	0.04	0.47	52.15	802.53	90.31	145.71	0.14
Little Plumtree	9033	2-YR	397.33	396.28	1.04	0.38	0.05		188.99	0.01	15.20	0.43
Little Plumtree	9033	10-YR	398.91	397.56	1.35	0.28	0.01	1.50	393.31	2.20	20.08	0.46
Little Plumtree	9033	50-YR	400.71	398.81	1.90	0.26	0.03	8.66	678.66	10.68	24.92	0.58
Little Plumtree	9033	100-YR	401.55	399.43	2.12	0.24	0.03	14.86	830.25	16.88	29.53	0.63
Little Plumtree	9033	7-30-2016	401.96	399.94	2.02	0.15	0.20	19.42	902.07	23.51	41.17	0.58
Little Plumtree	8938	2-YR	396.99	396.03	0.95	0.83	0.03	0.01	188.97	0.02	15.40	0.38
Little Plumtree	8938	10-YR	398.62	397.13	1.49	0.72	0.06	1.68	392.90	2.42	20.42	0.51
Little Plumtree	8938	50-YR	400.43	398.27	2.17	0.64	0.08	8.68	676.68	12.64	25.92	0.68
Little Plumtree	8938	100-YR	401.28	398.81	2.47	0.61	0.09	14.60	827.14	20.26	30.16	0.74
Little Plumtree	8938	7-30-2016	401.61	400.26	1.35	0.46	0.21	37.18	842.17	65.65	102.76	0.40
Little Plumtree	8776	2-YR	396.13	394.87	1.26	0.97	0.01		189.00		14.66	0.53
Little Plumtree	8776	10-YR	397.84	395.74	2.10	0.93	0.02	0.65	395.23	1.12	18.84	0.76
Little Plumtree	8776	50-YR	399.71	396.77	2.94	0.83	0.04	5.76	683.74	8.50	23.81	0.96
Little Plumtree	8776	100-YR	400.58	397.25	3.33	0.79	0.04	10.52	836.37	15.11	26.13	1.05
Little Plumtree	8776	7-30-2016	400.95	397.51	3.44	0.76	0.05	13.43	912.07	19.50	27.65	1.06
Little Plumtree	8628	2-YR	395.15	393.81	1.33	1.11	0.06		189.00		14.48	0.57
Little Plumtree	8628	10-YR	396.89	394.62	2.27	1.24	0.06	0.38	396.45	0.16	18.08	0.85
Little Plumtree	8628	50-YR	398.84	395.53	3.31	1.27	0.01	4.69	689.88	3.44	22.76	1.11
Little Plumtree	8628	100-YR	399.74	395.97	3.77	1.24	0.02	8.99	845.84	7.17	25.67	1.21
Little Plumtree	8628	7-30-2016	400.14	396.19	3.96	1.22	0.03	12.03	923.32	9.65	27.12	1.25
Little Plumtree	8459	2-YR	393.98	392.86	1.12	0.73	0.05		189.00		17.06	0.49
Little Plumtree	8459	10-YR	395.59	393.52	2.07	0.83	0.14		396.98	0.02	19.80	0.81
Little Plumtree	8459	50-YR	397.56	394.16	3.40	0.94	0.21	0.07	696.96	0.96	22.42	1.22
Little Plumtree	8459	100-YR	398.47	394.48	4.00	0.22	0.22	0.47	859.27	2.26	23.74	1.37
Little Plumtree	8459	7-30-2016	398.89	394.64	4.25	0.20	0.29	0.83	941.07	3.10	24.68	1.43
Little Plumtree	8329	2-YR	393.20	392.25	0.95	0.39	0.07		189.00		17.89	0.41
Little Plumtree	8329	10-YR	394.63	393.02	1.61	0.28	0.09	0.08	396.92	0.00	20.93	0.61
Little Plumtree	8329	50-YR	396.42	393.70	2.72	0.18	0.15	1.34	696.02	0.65	23.64	0.94
Little Plumtree	8329	100-YR	396.94	395.91	1.03	0.12	0.20	24.25	810.64	27.11	117.11	0.31
Little Plumtree	8329	7-30-2016	397.17	396.29	0.87	0.10	0.16	57.58	832.95	54.47	180.79	0.27
Little Plumtree	8166	2-YR	392.71	392.26	0.46	0.35	0.04	0.08	188.92		20.25	0.18
Little Plumtree	8166	10-YR	394.18	393.52	0.67	0.27	0.06	2.32	394.18	0.51	28.70	0.22
Little Plumtree	8166	50-YR	395.84	395.22	0.62	0.17	0.11	41.19	626.73	30.08	134.72	0.19
Little Plumtree	8166	100-YR	396.62	396.26	0.36	0.10	0.16	112.63	639.64	109.73	180.14	0.13
Little Plumtree	8166	7-30-2016	396.90	396.57	0.33	0.08	0.11	139.88	662.82	142.30	193.07	0.12
Little Plumtree	8010	2-YR	392.33	391.52	0.81	0.15	0.24	0.21	188.79		33.12	0.33
Little Plumtree	8010	10-YR	393.85	392.57	1.29	0.13	0.38	2.96	393.20	0.83	44.00	0.44
Little Plumtree	8010	50-YR	395.56	393.79	1.77	0.11	0.51	12.07	679.12	6.81	54.85	0.55
Little Plumtree	8010	100-YR	396.36	394.37	1.99	0.10	0.58	19.10	830.58	12.32	61.76	0.59
Little Plumtree	8010	7-30-2016	396.71	395.28	1.43	0.00	0.00	43.11	868.81	33.08	136.26	0.42
Little Plumtree	7921	2-YR	390.85	390.84	0.02			0.09	188.76	0.15	79.77	0.01
Little Plumtree	7921	10-YR	392.01	391.98	0.04			0.33	396.24	0.43	88.00	0.01

HEC-RAS Plan: EX River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	7921	50-YR	393.58	393.52	0.06			0.80	696.29	0.92	137.02	0.01
Little Plumtree	7921	100-YR	394.45	394.39	0.06			1.08	859.72	1.20	150.42	0.02
Little Plumtree	7921	7-30-2016	394.97	394.90	0.07			1.24	942.41	1.35	157.34	0.02
Little Plumtree	7800		Culvert									
Little Plumtree	7735	2-YR	390.68	390.65	0.03	0.05	0.03	5.36	183.64		106.51	0.06
Little Plumtree	7735	10-YR	391.50	391.43	0.08	0.11	0.06	12.12	384.88		113.10	0.15
Little Plumtree	7735	50-YR	392.42	392.26	0.16	0.17	0.09	22.39	675.61		118.87	0.29
Little Plumtree	7735	100-YR	392.82	392.62	0.21	0.20	0.11	28.09	833.91		121.35	0.37
Little Plumtree	7735	7-30-2016	393.08	392.85	0.23	0.21	0.12	31.08	913.92		122.96	0.40
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	390.59	390.45	0.14	0.16	0.02	11.83	178.17		65.51	0.31
Little Plumtree	7645	10-YR	391.33	391.04	0.29	0.30	0.04	56.78	346.22		73.37	0.59
Little Plumtree	7645	50-YR	392.15	391.68	0.47	0.49	0.05	148.43	592.57		81.89	0.94
Little Plumtree	7645	100-YR	392.52	391.96	0.56	0.58	0.06	203.23	723.77		85.55	1.12
Little Plumtree	7645	7-30-2016	392.75	392.14	0.61	0.64	0.06	243.13	814.87		87.91	1.23
Little Plumtree	7560	2-YR	390.41	390.35	0.07	0.06	0.01	25.50	164.50		79.82	0.15
Little Plumtree	7560	10-YR	390.99	390.83	0.15	0.12	0.03	79.72	323.28		89.07	0.39
Little Plumtree	7560	50-YR	391.61	391.31	0.29	0.22	0.06	181.70	559.18	0.12	111.45	0.79
Little Plumtree	7560	100-YR	391.88	391.50	0.37	0.27	0.08	240.81	683.39	2.80	130.94	1.03
Little Plumtree	7560	7-30-2016	392.06	391.64	0.42	0.30	0.09	283.78	765.39	8.83	144.53	1.17
Little Plumtree	7499	2-YR	390.35	390.32	0.03	0.03	0.00	64.47	123.13	2.40	149.32	0.08
Little Plumtree	7499	10-YR	390.84	390.77	0.06	0.05	0.00	152.70	218.57	31.73	183.73	0.18
Little Plumtree	7499	50-YR	391.33	391.23	0.10	0.09	0.01	286.10	336.40	118.49	203.97	0.28
Little Plumtree	7499	100-YR	391.53	391.41	0.12	0.10	0.01	355.32	397.69	172.95	205.84	0.36
Little Plumtree	7499	7-30-2016	391.67	391.54	0.13	0.11	0.01	402.52	436.19	215.86	207.21	0.40
Little Plumtree	7437	2-YR	390.32	390.29	0.03			1.84	186.97	1.19	170.17	0.07
Little Plumtree	7437	10-YR	390.78	390.73	0.05			42.20	315.83	44.97	215.21	0.16
Little Plumtree	7437	50-YR	391.23	391.15	0.08			142.08	463.71	128.21	258.59	0.29
Little Plumtree	7437	100-YR	391.42	391.32	0.10			205.31	524.24	174.97	264.15	0.34
Little Plumtree	7437	7-30-2016	391.55	391.45	0.10			255.05	553.70	209.60	268.07	0.36
Little Plumtree	7400		Culvert									
Little Plumtree	7358	2-YR	387.71	387.58	0.13	0.27	0.06	4.45	185.55		36.48	0.24
Little Plumtree	7358	10-YR	388.89	388.68	0.21	0.29	0.03	25.65	377.35		49.04	0.41
Little Plumtree	7358	50-YR	390.06	389.83	0.24	0.25	0.01	128.35	604.23	1.43	186.42	0.51
Little Plumtree	7358	100-YR	390.50	390.35	0.16	0.20	0.03	250.25	608.25	46.02	263.34	0.39
Little Plumtree	7358	7-30-2016	390.76	390.64	0.13	0.17	0.04	323.99	605.76	88.60	282.80	0.33
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	387.38	387.06	0.32	1.28	0.00	1.92	188.08		53.39	0.75
Little Plumtree	7261	10-YR	388.58	388.28	0.30	0.93	0.02	83.47	318.69	0.85	89.14	0.76
Little Plumtree	7261	50-YR	389.80	389.53	0.27	0.74	0.03	264.47	461.10	8.44	115.38	0.75
Little Plumtree	7261	100-YR	390.27	390.01	0.27	0.68	0.03	370.27	519.97	13.67	124.76	0.76
Little Plumtree	7261	7-30-2016	390.55	390.29	0.26	0.63	0.03	441.42	554.75	17.29	131.49	0.76
Little Plumtree	7059	2-YR	386.10	385.76	0.34	1.06	0.00		190.00		18.66	0.80
Little Plumtree	7059	10-YR	387.63	387.17	0.46	0.98	0.01	17.44	384.33	1.23	49.45	0.98
Little Plumtree	7059	50-YR	389.03	388.44	0.59	0.89	0.01	100.99	625.81	7.21	80.91	1.24
Little Plumtree	7059	100-YR	389.56	388.97	0.60	0.82	0.00	170.43	722.05	11.42	93.64	1.29
Little Plumtree	7059	7-30-2016	389.89	389.33	0.56	0.78	0.01	231.54	767.38	14.54	102.42	1.25
Little Plumtree	6890	2-YR	385.04	384.69	0.35	1.41	0.01		190.00		15.78	0.78
Little Plumtree	6890	10-YR	386.63	386.04	0.59	1.54	0.02	8.71	394.29		43.64	1.23
Little Plumtree	6890	50-YR	388.13	387.49	0.65	1.57	0.06	105.45	628.56		66.35	1.39
Little Plumtree	6890	100-YR	388.73	388.09	0.64	1.53	0.09	174.21	729.68	0.01	75.66	1.41
Little Plumtree	6890	7-30-2016	389.10	388.41	0.69	1.53	0.10	204.78	808.51	0.17	92.02	1.49
Little Plumtree	6690	2-YR	383.62	383.13	0.48	4.03	0.01		186.51	3.49	21.74	1.14
Little Plumtree	6690	10-YR	385.08	384.33	0.75	3.93	0.02		375.87	27.14	30.39	1.64
Little Plumtree	6690	50-YR	386.50	385.24	1.26	4.12	0.07	1.12	651.31	81.58	39.35	2.70
Little Plumtree	6690	100-YR	387.11	385.57	1.54	4.21	0.17	4.21	787.21	112.48	42.89	3.26
Little Plumtree	6690	7-30-2016	387.47	385.84	1.64	4.08	0.20	8.56	869.42	135.47	45.74	3.44
Little Plumtree	6326	2-YR	379.58	378.97	0.61	2.03	0.16		190.00		15.74	1.48
Little Plumtree	6326	10-YR	381.13	380.16	0.97	1.97	0.24	1.92	398.23	2.85	58.65	2.07
Little Plumtree	6326	50-YR	382.30	381.29	1.01	1.64	0.22	104.95	613.22	15.84	86.28	2.29
Little Plumtree	6326	100-YR	382.73	381.74	0.99	1.52	0.20	181.84	698.33	23.73	95.79	2.32

HEC-RAS Plan: EX River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	6326	7-30-2016	382.99	382.03	0.96	1.45	0.19	236.13	748.06	29.27	101.42	2.30
Little Plumtree	6045	2-YR	377.40	377.32	0.08	0.25	0.01		190.00	0.00	22.95	0.15
Little Plumtree	6045	10-YR	378.91	378.74	0.17	0.38	0.03	5.83	394.08	3.09	50.87	0.31
Little Plumtree	6045	50-YR	380.41	380.13	0.28	0.48	0.05	48.84	664.13	21.04	80.50	0.51
Little Plumtree	6045	100-YR	381.01	380.69	0.32	0.51	0.06	86.44	783.41	34.06	85.74	0.59
Little Plumtree	6045	7-30-2016	381.36	381.02	0.34	0.53	0.06	113.46	856.83	43.17	88.81	0.64
Little Plumtree	5847	2-YR	377.13	376.91	0.22	0.60	0.00		190.00		18.34	0.47
Little Plumtree	5847	10-YR	378.51	378.04	0.47	0.80	0.03	0.37	401.62	1.01	35.10	0.94
Little Plumtree	5847	50-YR	379.88	379.09	0.79	0.87	0.12	24.38	692.19	17.44	55.84	1.53
Little Plumtree	5847	100-YR	380.44	379.53	0.91	0.87	0.16	46.35	824.36	33.20	59.49	1.75
Little Plumtree	5847	7-30-2016	380.77	379.80	0.97	0.88	0.17	62.82	906.06	44.59	61.66	1.88
Little Plumtree	5668	2-YR	376.53	376.29	0.24	0.74	0.02	0.50	189.50		50.64	0.53
Little Plumtree	5668	10-YR	377.67	377.32	0.36	0.66	0.00	59.19	343.52	0.29	80.66	0.82
Little Plumtree	5668	50-YR	378.89	378.50	0.38	0.53	0.00	217.30	513.46	3.25	97.52	0.95
Little Plumtree	5668	100-YR	379.41	379.03	0.38	0.51	0.00	309.50	588.52	5.88	103.62	0.99
Little Plumtree	5668	7-30-2016	379.72	379.33	0.39	0.51	0.00	370.37	635.20	7.89	107.22	1.01
Little Plumtree	5520	2-YR	375.76	375.31	0.45	0.42	0.07	5.87	183.42	0.71	51.03	1.06
Little Plumtree	5520	10-YR	377.01	376.62	0.39	0.29	0.02	91.28	299.43	12.28	72.52	1.00
Little Plumtree	5520	50-YR	378.35	377.98	0.37	0.25	0.00	256.09	437.94	39.99	83.79	1.02
Little Plumtree	5520	100-YR	378.89	378.50	0.40	0.24	0.00	334.85	513.60	55.45	91.23	1.11
Little Plumtree	5520	7-30-2016	379.21	378.80	0.42	0.24	0.00	387.25	560.57	65.64	95.65	1.17
Little Plumtree	5442	2-YR	375.27	375.05	0.22			6.55	175.62	7.83	42.74	0.49
Little Plumtree	5442	10-YR	376.69	376.38	0.31			54.78	317.52	30.69	67.34	0.70
Little Plumtree	5442	50-YR	378.10	377.72	0.38			173.65	491.77	68.59	90.76	0.91
Little Plumtree	5442	100-YR	378.65	378.25	0.40			247.76	568.23	87.91	98.13	1.00
Little Plumtree	5442	7-30-2016	378.97	378.55	0.41			298.58	614.56	100.32	101.63	1.04

Appendix H-12

Little Plumtree Branch: Option R Hydraulic Modeling

ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017

Little Plumtree Little Plumtree

Legend

WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
LOB
ROB

Elevation (ft)

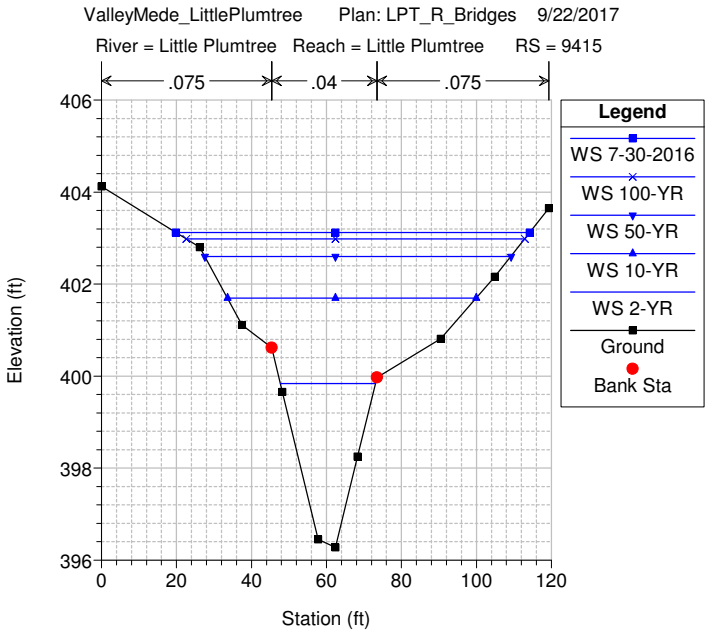
405
400
395
390
385
380
375
370

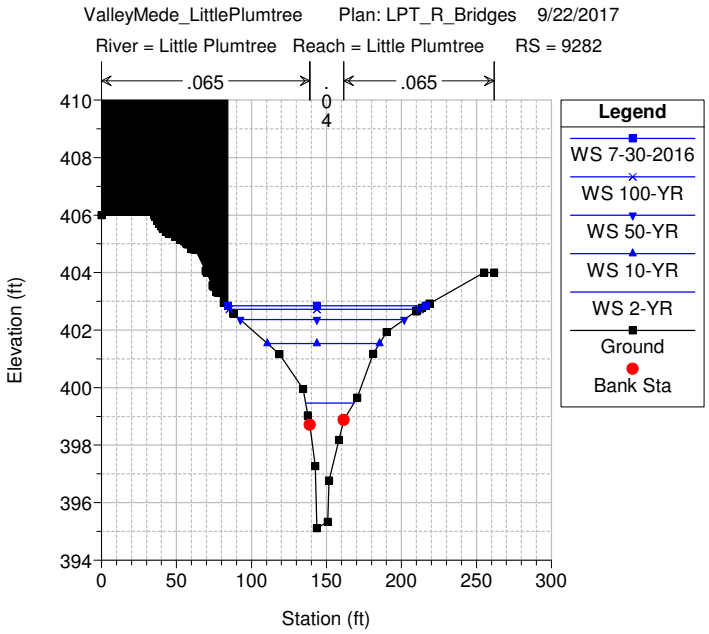
0
1000
2000
3000
4000

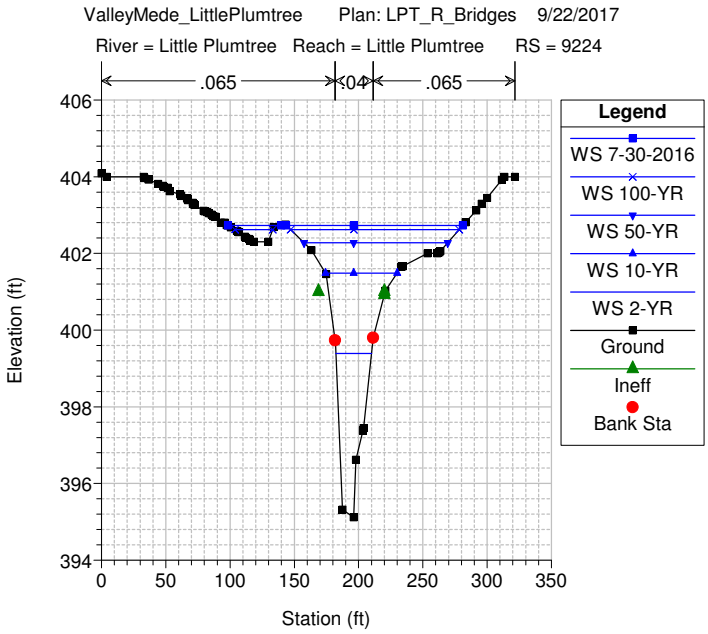
Main Channel Distance (ft)

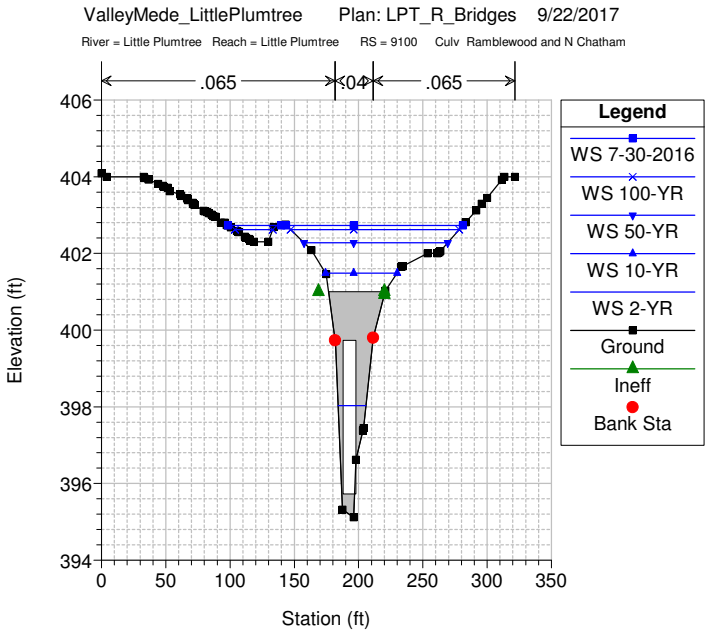
5520
5668
5847
6045
6326
6690
6890
7059
7261
7358
7400 School/Church Dr
7499
7560
7645
7735
7800 N. Chatham Rd
8010
8166
8329
8459
8628
8776
8938
9033
9094
9100 Ramblewood Rd
9224
9282
9415

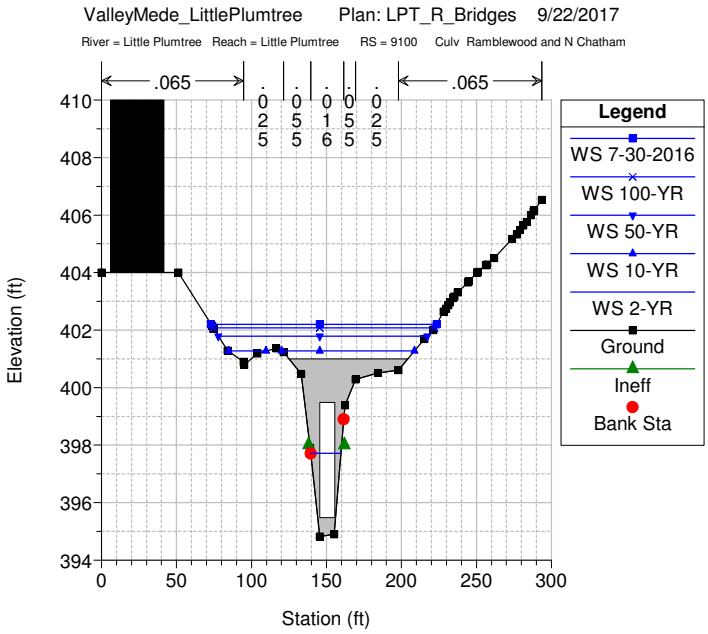
1845

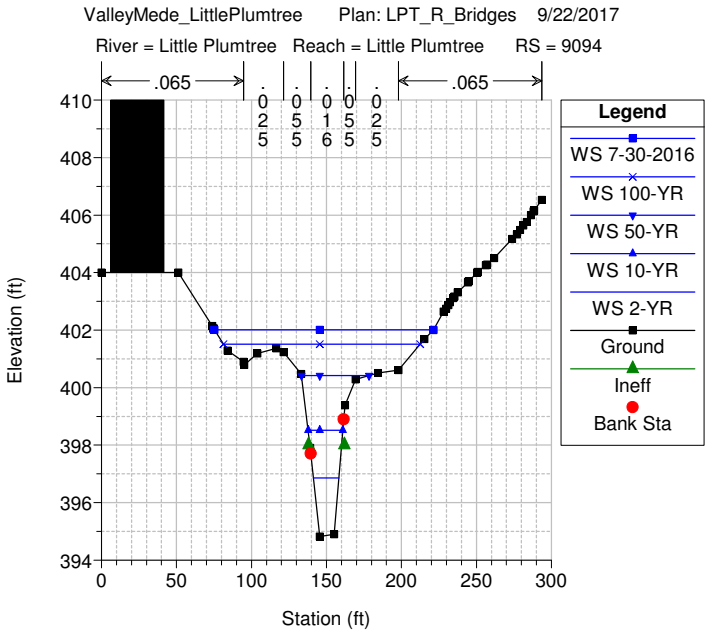

ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9415
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9282
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9224
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9100 Culv Ramblewood and N Chatham
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9100 Culv Ramblewood and N Chatham
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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.025
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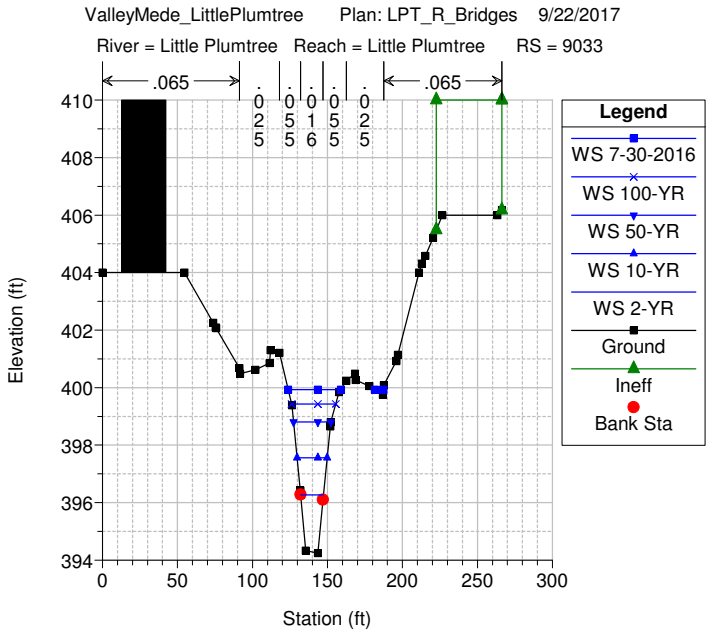
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 9033
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.025
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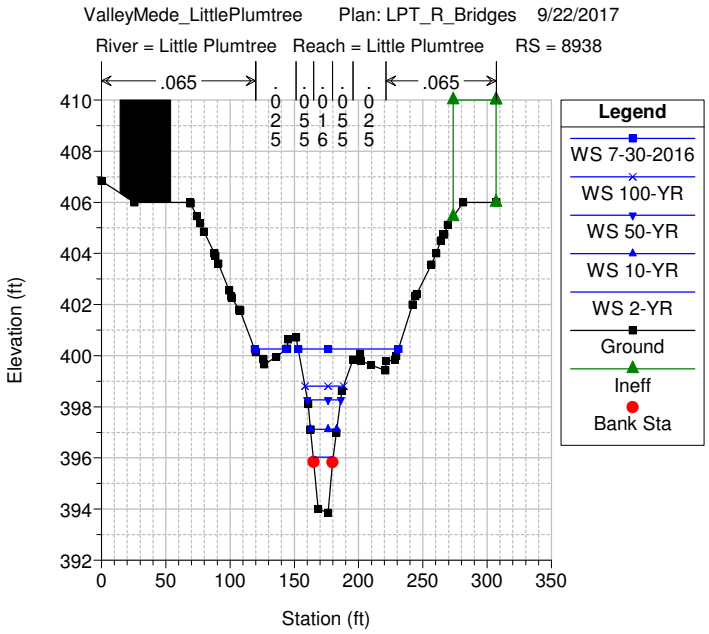
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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.025
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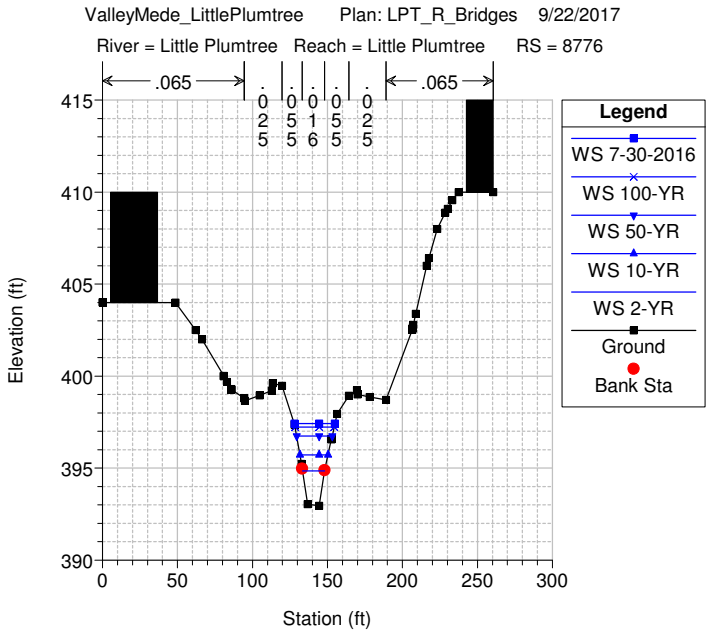
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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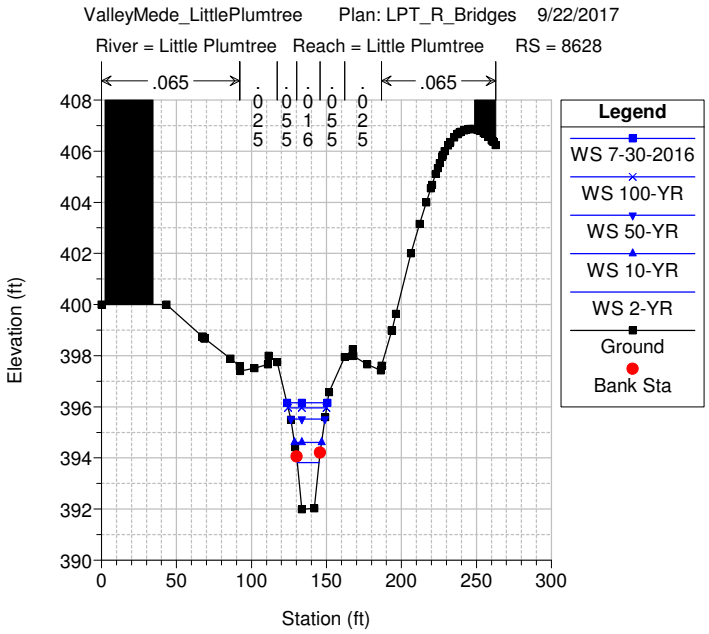
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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.025
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.016
.055
.025
.065
Legend
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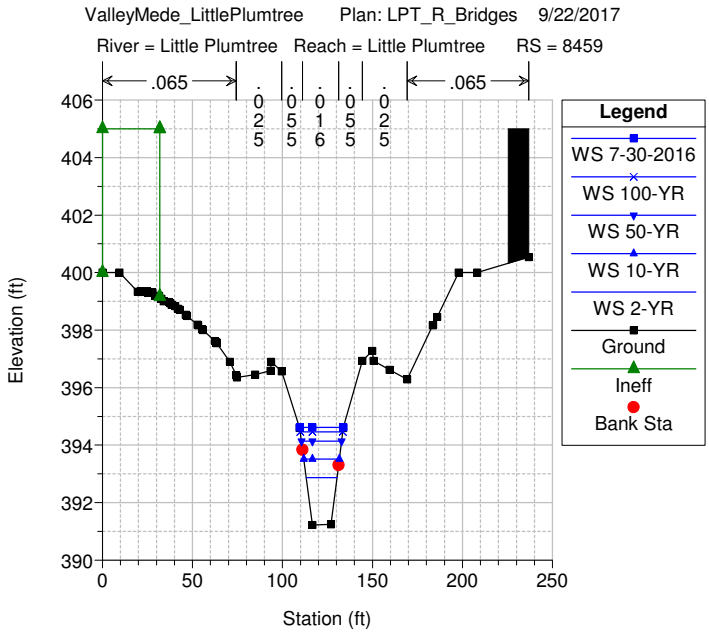
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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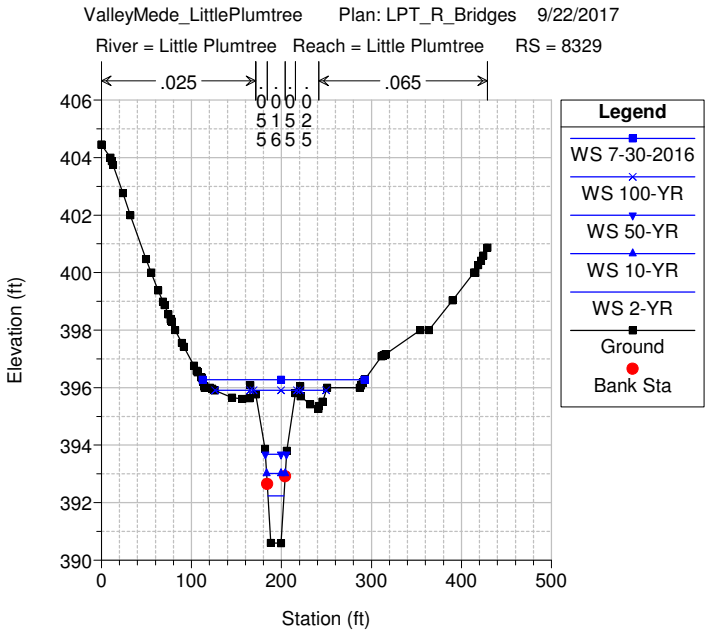
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 8329
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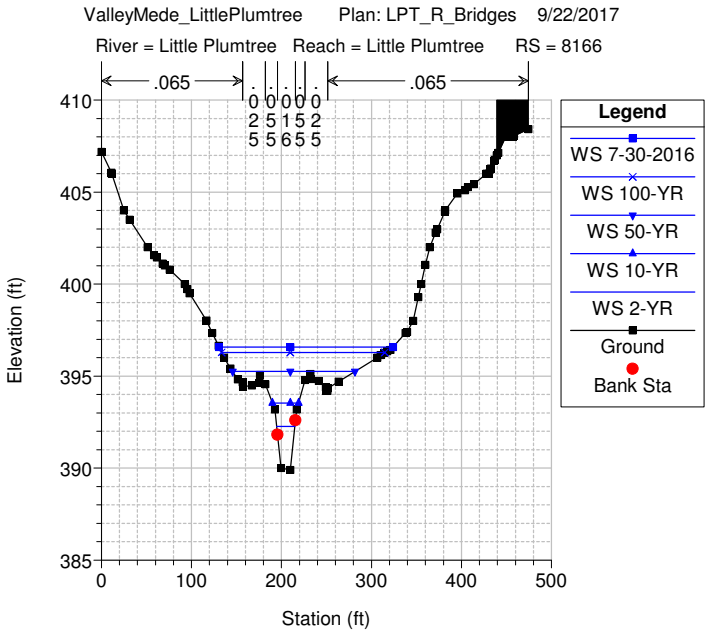
.065
.055
.016
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 8166
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.065
Legend
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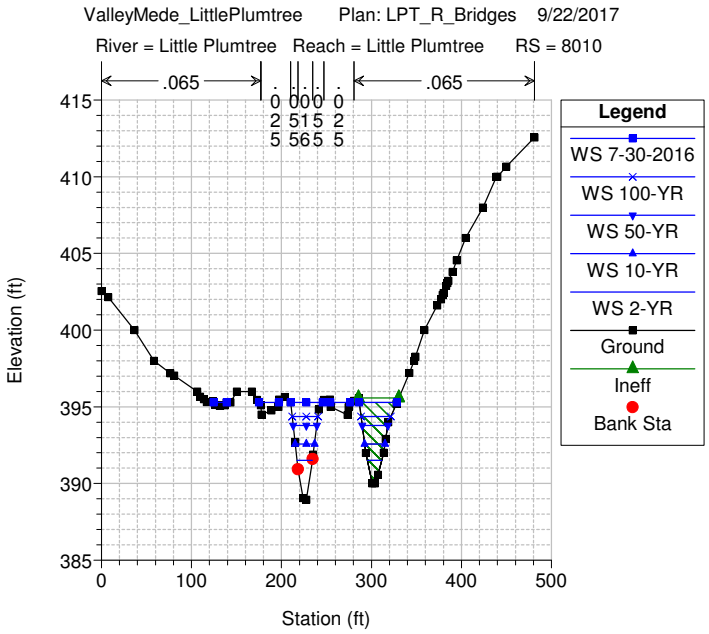
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8010
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.065
Legend
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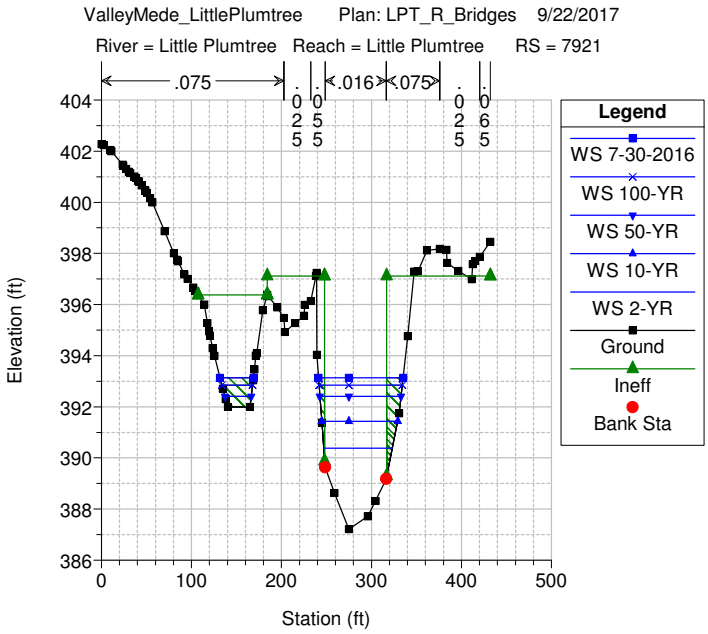
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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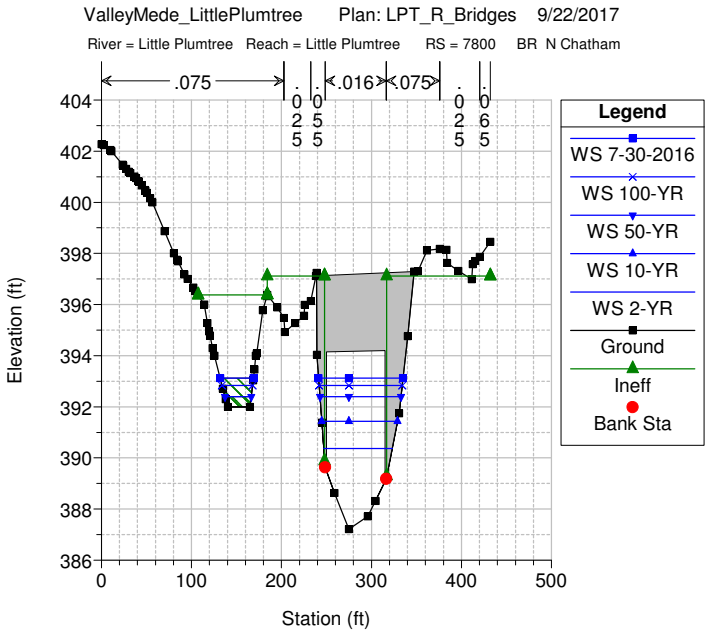
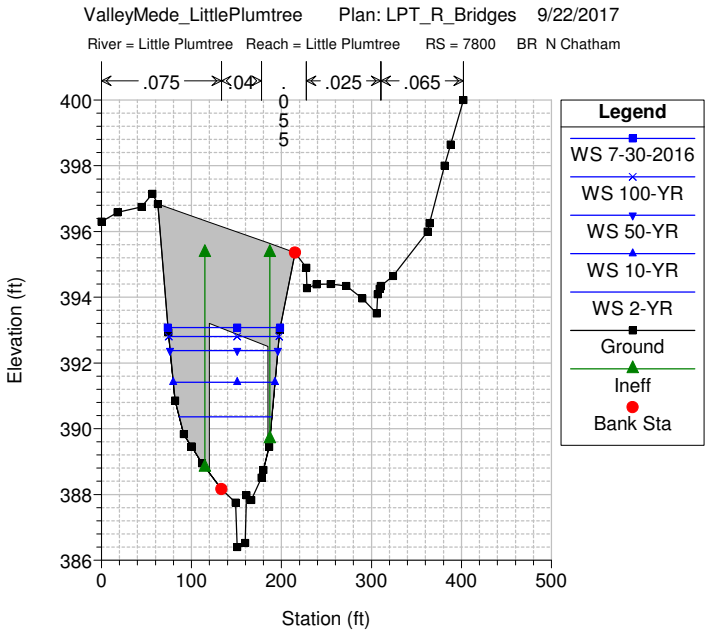
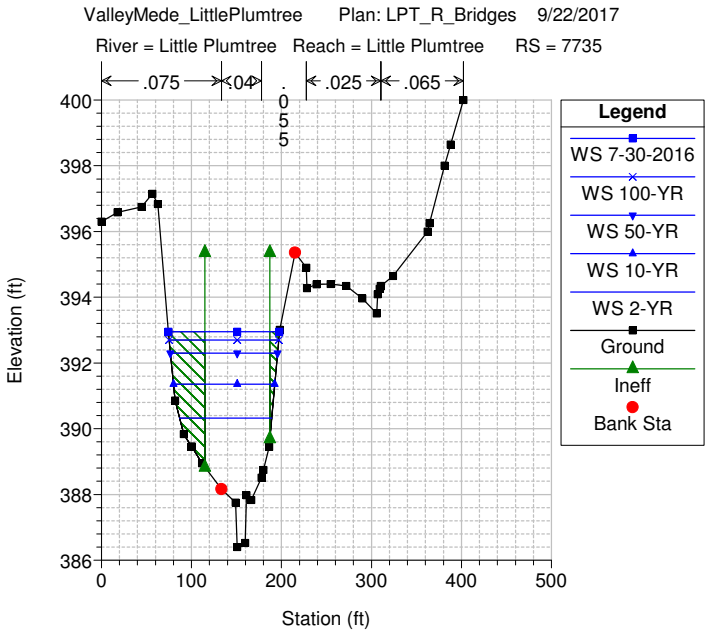
.016
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7800 BR N Chatham
.075
.016
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7800 BR N Chatham
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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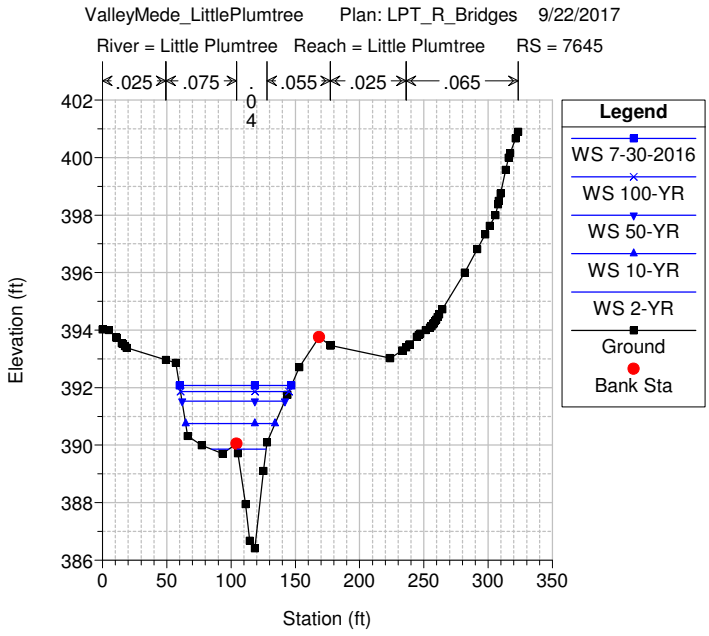
River = Little Plumtree Reach = Little Plumtree RS = 7735
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 7645
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Legend
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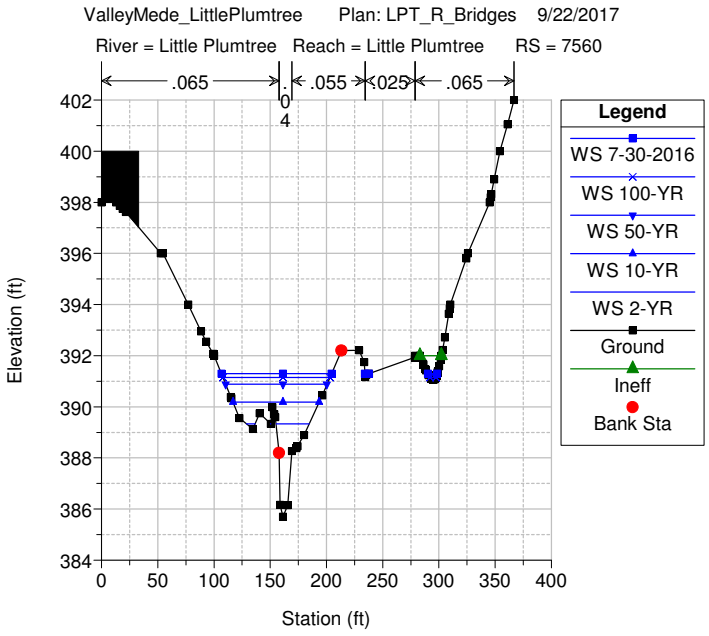
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7560
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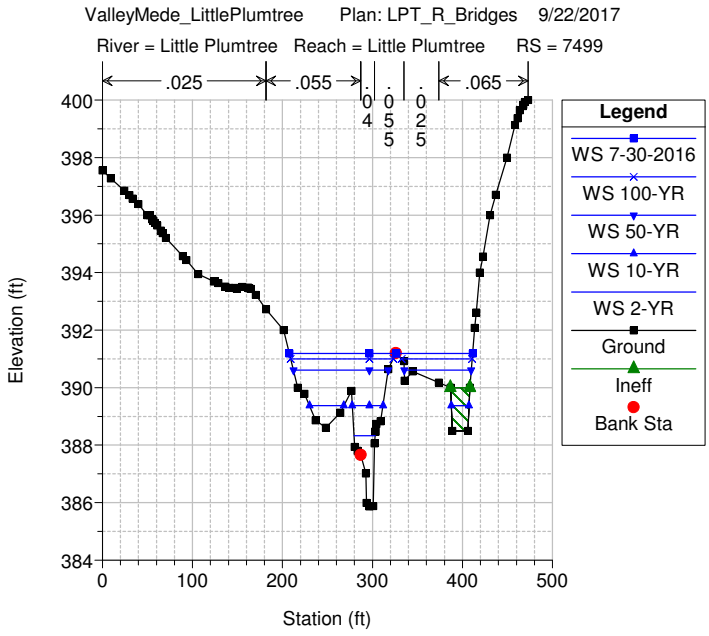
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 7499
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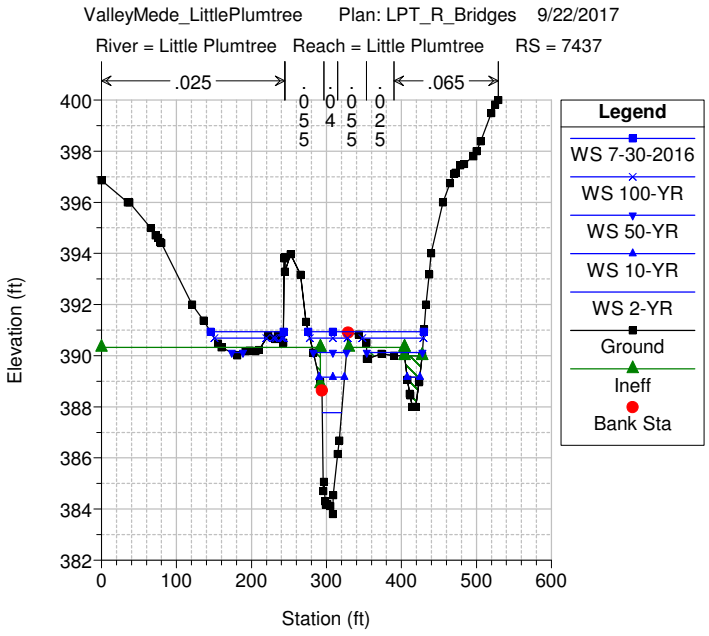
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7437
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Legend
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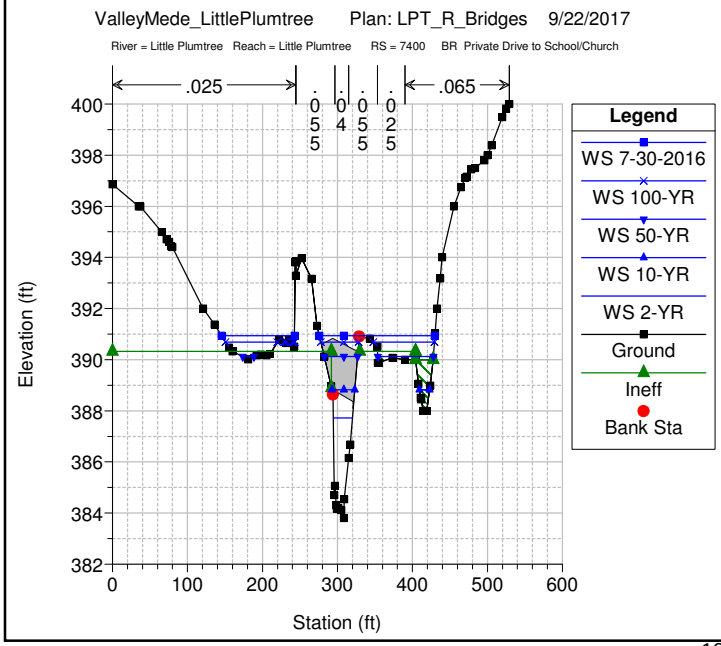
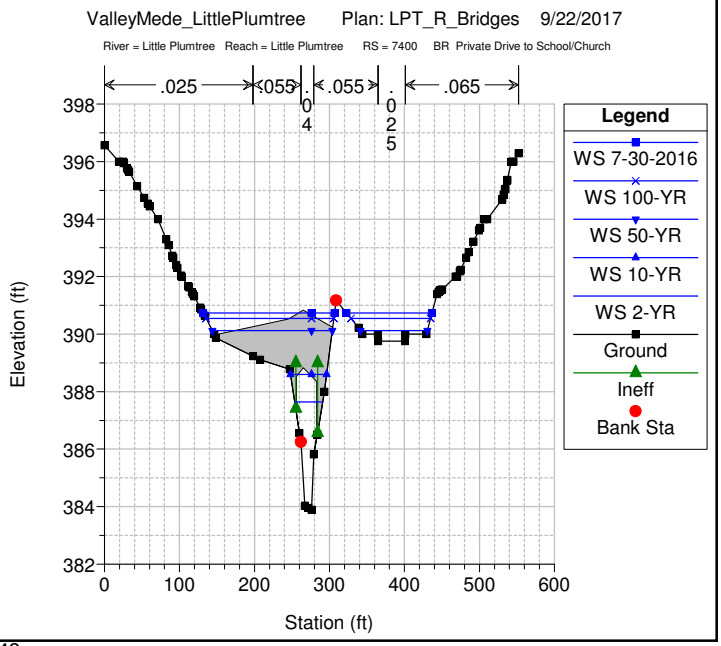
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7400 BR Private Drive to School/Church
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_R_Bridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7400 BR Private Drive to School/Church
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
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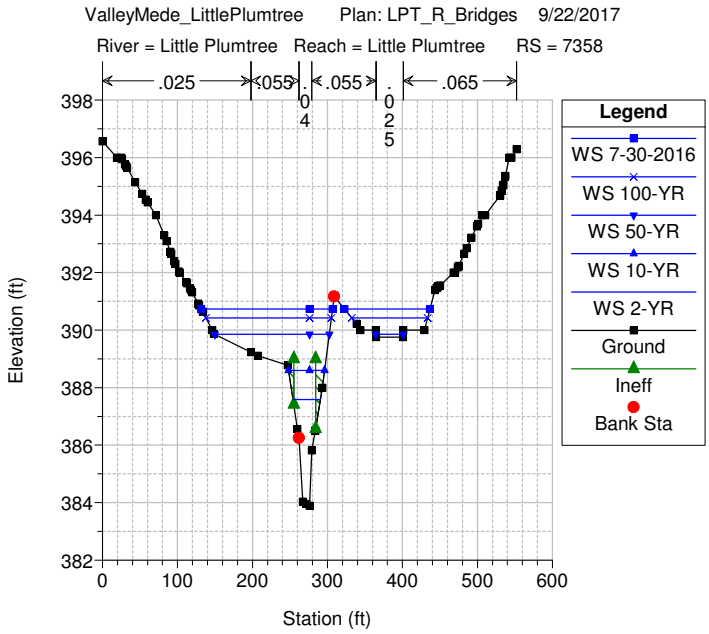
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 7358
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.055
.055
.065
Legend
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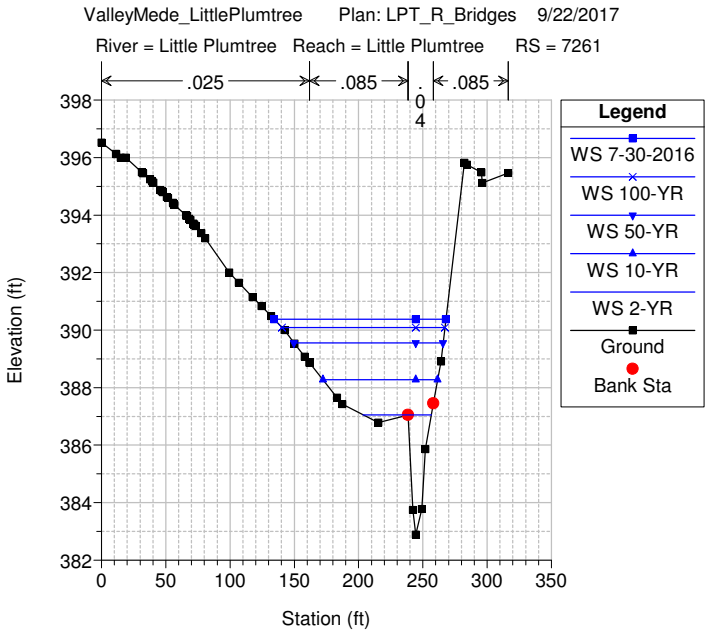
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 7261
.025
.085
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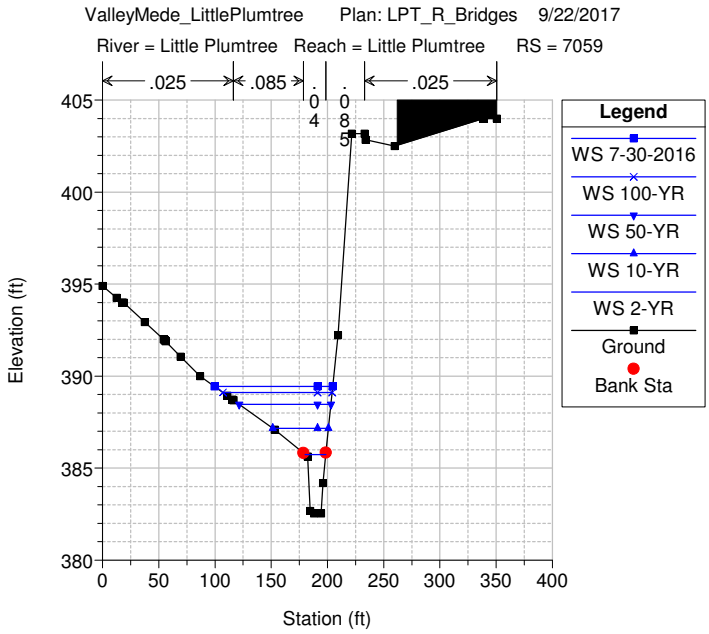
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 7059
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.085
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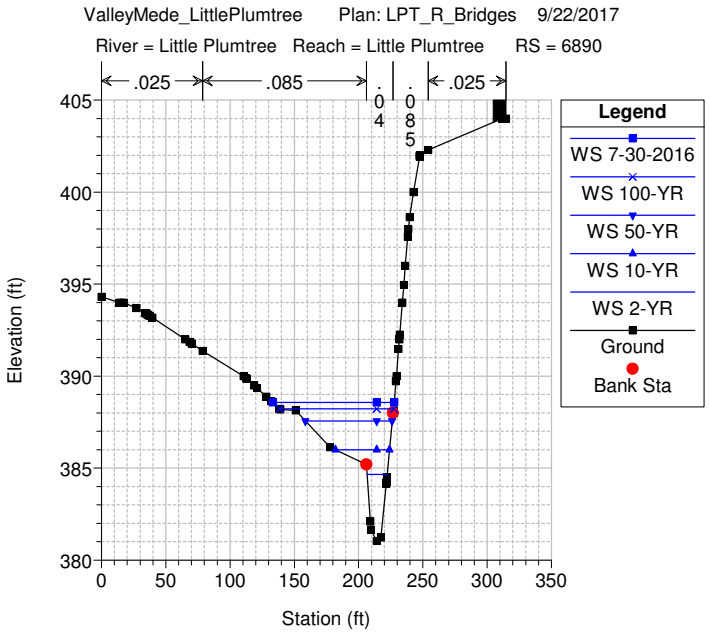
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 6890
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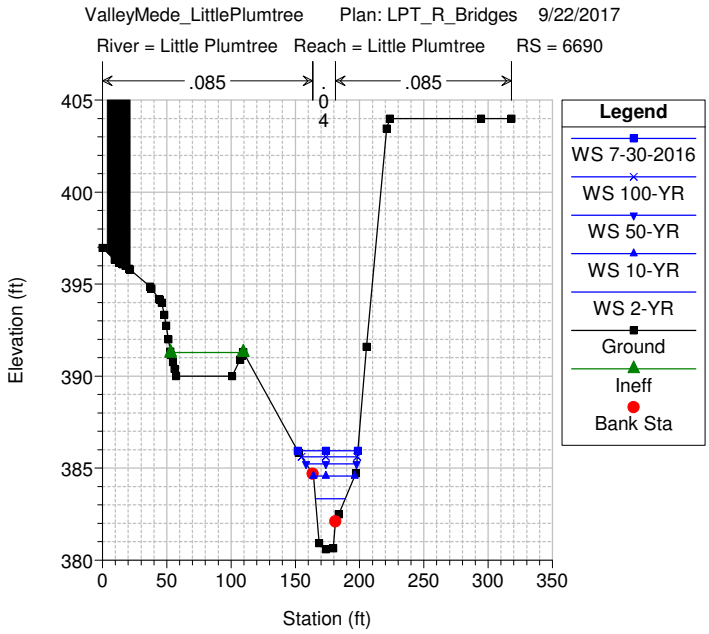
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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.085
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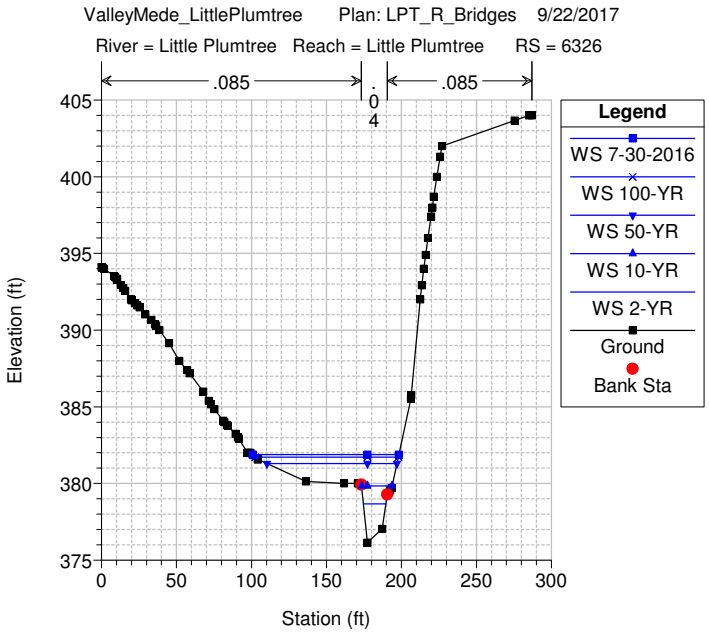
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 6326
.085
.085
Legend
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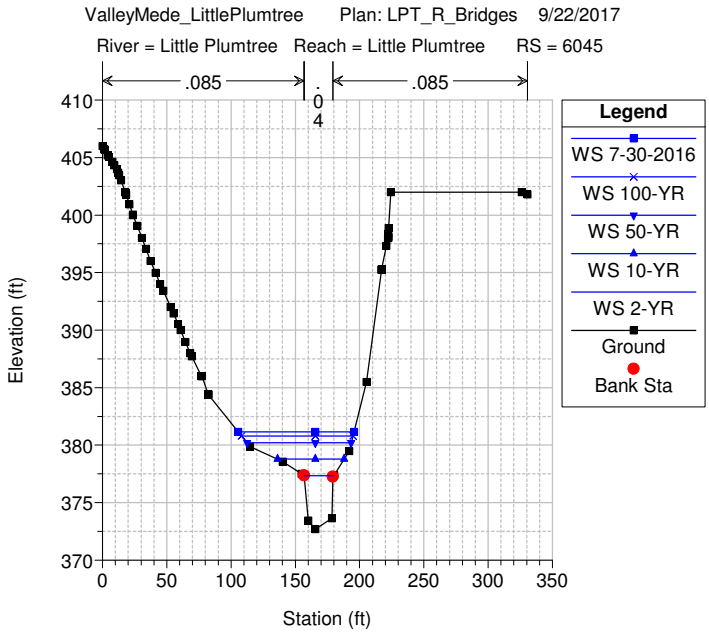
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 6045
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.04
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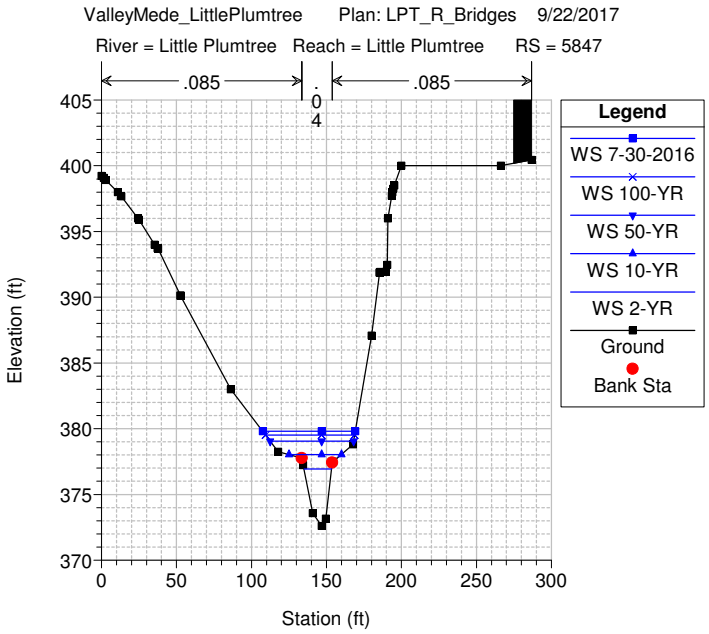
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 5847
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.04
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Legend
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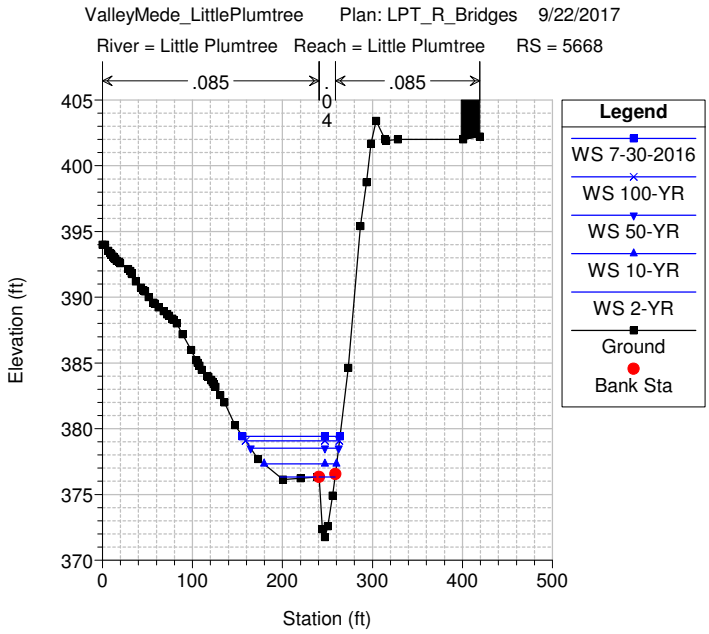
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 5668
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.04
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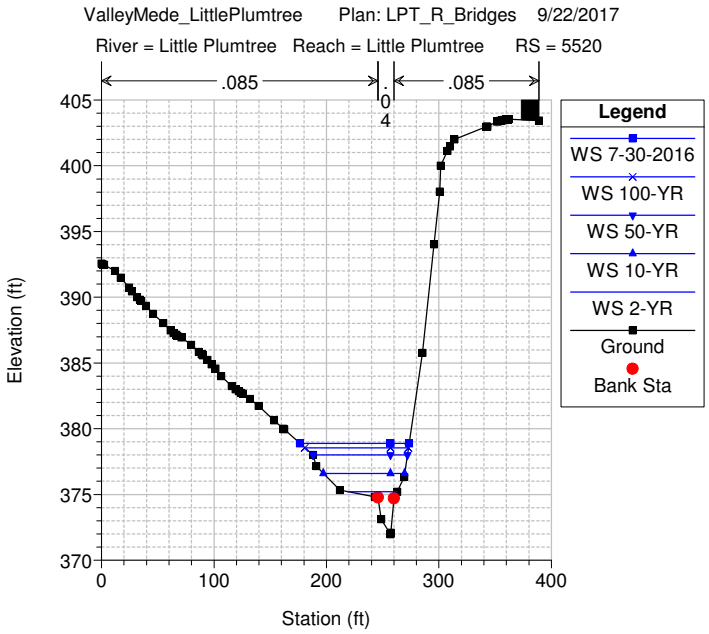
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 5520
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.04
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Legend
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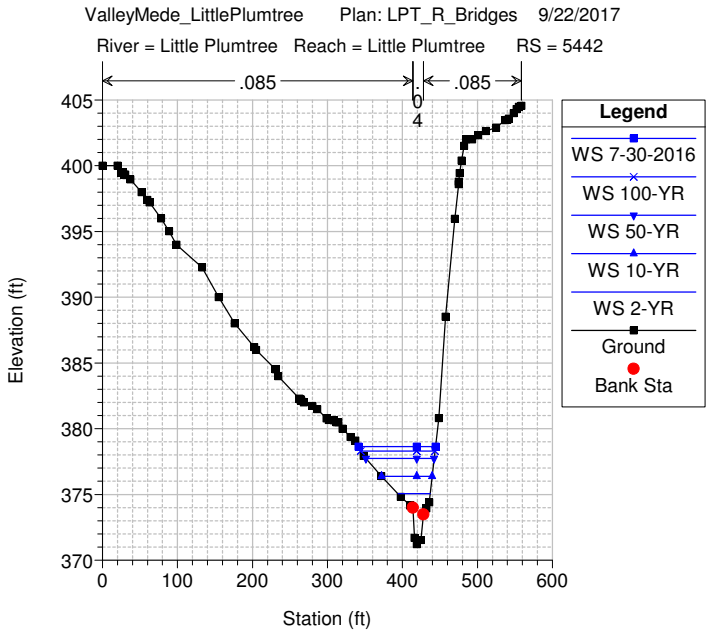
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 5442
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.04
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Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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PROJECT DATA
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Project File : ValleyMedeLittlePlumtree.prj
Run Date and Time: 9/22/2017 12:41:07 PM

Project in English units

PLAN DATA

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Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.p02

Geometry Title: Little Plumtree_R_Bridges
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g02

Flow Title : Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Plan Description:
Existing conditions of Little Plumtree Branch.

Plan Summary Information:
Number of: Cross Sections = 29 Multiple Openings = 0
Culverts = 1 Inline Structures = 0
Bridges = 2 Lateral Structures = 2

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 40
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed at all cross sections
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Flow Data (cfs)

River	Reach	RS	2-YR	10-YR	50-YR	100-YR	7-30-2016
Little Plumtree	Little Plumtree	9415	189	397	698	862	945

Little Plumtree	Little Plumtree	7645	190	403	741	927	1058

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Little Plumtree	Little Plumtree	2-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	10-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	50-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	100-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	7-30-2016	Critical	Normal S = 0.00278

GEOMETRY DATA

Geometry Title: Little Plumtree_R_Bridges
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g02

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9415

INPUT
Description:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.12	26.24	402.8	37.49	401.11	45.42	400.62	48.26	399.66
57.81	396.45	62.4	396.28	68.31	398.25	73.47	399.97	90.46	400.81
104.93	402.16	119.34	403.65						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	45.42	.04	73.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.42	73.47	133.08	132.78	133.29	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9282

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	35.14	406	35.66	405.94	37.16	405.8	38.48	405.69
39.65	405.61	40.74	405.54	41.04	405.53	43.06	405.42	44.88	405.36
45.26	405.34	49.17	405.25	52.19	405.14	55.17	405.08	56.39	405.02
57.09	404.98	57.75	404.98	60.06	404.81	61.67	404.8	62.71	404.79
69.47	404.07	69.52	404.06	69.61	404.06	70.1	404	73.98	403.56
74.29	403.54	74.75	403.51	76.65	403.33	77.5	403.29	81.52	402.95
87.95	402.58	88.09	402.57	88.21	402.57	118.53	401.16	134.44	399.95
137.69	399.03	137.7	399.03	138.85	398.71	142.58	397.27	143.65	395.11
150.75	395.34	151.63	396.77	158.22	398.18	161.45	398.87	170.55	399.65
181.15	401.18	190.16	401.93	209.71	402.66	209.76	402.66	210.1	402.67
210.35	402.68	210.6	402.68	213.79	402.78	216.31	402.85	218.75	402.92
255.28	404	261.74	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	138.85	.04	161.45	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.85	161.45	61.4	57.86	54.02	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	84.3	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9224

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.82	402.69
143.12	402.75	163.4	402.09	174.73	401.46	181.84	399.73	181.86	399.72
187.51	395.32	196.08	395.12	197.79	396.62	203.28	397.38	203.29	397.39
203.77	397.45	211.36	399.8	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	211.36	.065

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
181.84 211.36 128.56 130.35 131.84 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	168.9	401	F
220	321.72	401	F

CULVERT

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9100

INPUT
Description: Ramblewood and N Chatham
Distance from Upstream XS = 38
Deck/Roadway Width = 59
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
170	401	220	401

Upstream Bridge Cross Section Data
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.82	402.69
143.12	402.75	163.4	402.09	174.73	401.46	181.84	399.73	181.86	399.72
187.51	395.32	196.08	395.12	197.79	396.62	203.28	397.38	203.29	397.39
203.77	397.45	211.36	399.8	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	211.36	.065

Bank Sta: Left Right Coeff Contr. Expan.
181.84 211.36 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	168.9	401	F

```
     220  321.72     401       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     100     401             210     401

Downstream Bridge Cross Section Data
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     404   51.12     404   73.72  402.14   74.58  402.06   74.68  402.06
   74.73  402.05    74.8  402.05   74.85  402.04   84.11  401.29   94.67   400.9
   95.13  400.79   103.9  401.19  116.56  401.37  121.51  401.23  133.12  400.48
  139.21  397.91  139.64   397.7  145.48  394.82  155.07   394.9  161.53   398.9
  161.54   398.9  162.31  399.38  169.42  400.29  184.45  400.51  198.05  400.61
  215.34  401.69  221.16     402  228.05  402.64  229.72  402.74  231.21  402.87
  232.43  402.97  234.41  403.11  235.31  403.17  237.42  403.31  244.27  403.66
  244.61  403.68   244.9   403.7  250.59     404  250.91  404.01  250.94  404.02
  256.32  404.26  256.52  404.26  257.04  404.28  261.82   404.5  273.83  405.17
  276.99  405.33  279.05  405.48  281.29  405.64  283.55  405.76   286.4     406
  288.12  406.13  288.52  406.16  293.59  406.53

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   94.67    .025  121.51    .055  139.64    .016  161.53    .055
  169.42    .025  198.05    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        139.64  161.53            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     138     398       F
     162  293.59     398       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     6.1    41.7     410

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 8      89     .013     .013        0                   .4                1
Upstream   Elevation =  395.73
           Centerline Station =  193
Downstream Elevation =  395.48
           Centerline Station =  150.5

CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        189.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          8.21
  Q Barrel (cfs)            189.00    Culv Vel DS (ft/s)          8.47
  E.G. US. (ft)             399.50    Culv Inv El Up (ft)       395.73
  W.S. US. (ft)             399.39    Culv Inv El Dn (ft)       395.48
  E.G. DS (ft)              397.65    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              396.86    Culv Exit Loss (ft)         1.18
  Delta EG (ft)               1.85    Culv Entr Loss (ft)         0.42
  Delta WS (ft)               2.53    Q Weir (cfs)
  E.G. IC (ft)              399.32    Weir Sta Lft (ft)
  E.G. OC (ft)              399.50    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        398.03    Weir Max Depth (ft)
  Culv WS Outlet (ft)       397.71    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.30    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.23    Min El Weir Flow (ft)     401.01
```

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	336.34	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.80
Q Barrel (cfs)	336.34	Culv Vel DS (ft/s)	10.27
E.G. US. (ft)	401.62	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	401.49	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	399.22	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	398.52	Culv Exit Loss (ft)	1.17
Delta EG (ft)	2.39	Culv Entr Loss (ft)	0.96
Delta WS (ft)	2.97	Q Weir (cfs)	60.66
E.G. IC (ft)	401.62	Weir Sta Lft (ft)	172.05
E.G. OC (ft)	401.47	Weir Sta Rgt (ft)	232.50
Culvert Control	Inlet	Weir Submerg	0.00
Culv WS Inlet (ft)	399.16	Weir Max Depth (ft)	0.68
Culv WS Outlet (ft)	398.76	Weir Avg Depth (ft)	0.52
Culv Nml Depth (ft)	3.45	Weir Flow Area (sq ft)	31.22
Culv Crt Depth (ft)	3.28	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	360.49	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	9.01
Q Barrel (cfs)	360.49	Culv Vel DS (ft/s)	9.01
E.G. US. (ft)	402.53	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.28	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	401.14	Culv Frctn Ls (ft)	0.34
W.S. DS (ft)	400.42	Culv Exit Loss (ft)	0.54
Delta EG (ft)	1.39	Culv Entr Loss (ft)	0.50
Delta WS (ft)	1.86	Q Weir (cfs)	337.51
E.G. IC (ft)	402.47	Weir Sta Lft (ft)	107.81
E.G. OC (ft)	402.53	Weir Sta Rgt (ft)	275.81
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	1.60
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	0.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	122.50
Culv Crt Depth (ft)	3.43	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	294.92	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	7.37
Q Barrel (cfs)	294.92	Culv Vel DS (ft/s)	7.37
E.G. US. (ft)	402.92	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.62	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	402.08	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	401.51	Culv Exit Loss (ft)	0.28
Delta EG (ft)	0.85	Culv Entr Loss (ft)	0.34
Delta WS (ft)	1.11	Q Weir (cfs)	567.08
E.G. IC (ft)	402.73	Weir Sta Lft (ft)	89.87
E.G. OC (ft)	402.92	Weir Sta Rgt (ft)	285.98
Culvert Control	Outlet	Weir Submerg	0.16
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	1.99
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	0.97
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	190.69
Culv Crt Depth (ft)	3.00	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	255.39	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	6.38
Q Barrel (cfs)	255.39	Culv Vel DS (ft/s)	6.38
E.G. US. (ft)	403.07	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.73	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	402.47	Culv Frctn Ls (ft)	0.17
W.S. DS (ft)	402.01	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.59	Culv Entr Loss (ft)	0.25
Delta WS (ft)	0.72	Q Weir (cfs)	689.61
E.G. IC (ft)	402.86	Weir Sta Lft (ft)	81.74
E.G. OC (ft)	403.07	Weir Sta Rgt (ft)	290.31
Culvert Control	Outlet	Weir Submerg	0.32
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	2.15
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	1.07
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	223.70
Culv Crt Depth (ft)	2.73	Min El Weir Flow (ft)	401.01

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9094

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404	51.12	404	73.72	402.14	74.58	402.06	74.68	402.06
74.73	402.05	74.8	402.05	74.85	402.04	84.11	401.29	94.67	400.9
95.13	400.79	103.9	401.19	116.56	401.37	121.51	401.23	133.12	400.48
139.21	397.91	139.64	397.7	145.48	394.82	155.07	394.9	161.53	398.9
161.54	398.9	162.31	399.38	169.42	400.29	184.45	400.51	198.05	400.61
215.34	401.69	221.16	402	228.05	402.64	229.72	402.74	231.21	402.87
232.43	402.97	234.41	403.11	235.31	403.17	237.42	403.31	244.27	403.66
244.61	403.68	244.9	403.7	250.59	404	250.91	404.01	250.94	404.02
256.32	404.26	256.52	404.26	257.04	404.28	261.82	404.5	273.83	405.17
276.99	405.33	279.05	405.48	281.29	405.64	283.55	405.76	286.4	406
288.12	406.13	288.52	406.16	293.59	406.53				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	94.67	.025	121.51	.055	139.64	.016	161.53	.055
169.42	.025	198.05	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
139.64	161.53	57.37	60.69	64.17	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	138	398	F
162	293.59	398	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
6.1	41.7	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9033

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404	54.52	404	73.75	402.26	75.58	402.09	75.64	402.08
75.71	402.08	75.76	402.07	91.39	400.68	91.77	400.49	102.07	400.62
111.47	400.85	112.04	401.3	118.01	401.21	126.27	399.38	131.85	396.43
131.86	396.42	132.13	396.28	135.54	394.33	143.52	394.25	146.97	396.1
151.92	398.65	152.18	398.79	157.76	399.84	162.63	400.24	168.26	400.49
168.8	400.26	177.99	400.05	187.01	399.75	187.54	400.09	195.78	400.92
195.83	400.93	196.85	401.14	210.93	404	212.97	404.31	215.23	404.58
220.35	405.21	226.57	406	263.3	406	266.2	406.17		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	91.39	.025	118.01	.055	132.13	.016	146.97	.055
162.63	.025	187.54	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
132.13	146.97	96.95	94.72	92.33	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
222.5	266.2	410	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
12.8	42.2	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8938

INPUT
Description:

```
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  406.83   25.54     406   68.91     406   69.17  405.97   69.26  405.96
   74.09  405.46   76.78  405.18   79.77  404.86   87.76     404   88.56   403.9
   90.95   403.6   99.23  402.55  100.92  402.33  101.42  402.26  107.11   401.8
  107.69  401.77  107.71  401.77   107.8  401.76  107.85  401.76  120.05  400.14
  126.04  399.87  126.55  399.66  135.93  399.95  144.47  400.28  145.09  400.64
  151.45  400.71  160.73  398.11  162.66  397.11  162.67  397.11  165.14  395.84
  168.52     394  176.28  393.85  179.62  395.83  182.69  396.99  187.03  398.62
  195.68  399.85  201.07  400.07  201.66   399.8   209.6  399.64   220.7  399.42
   221.2  399.78  228.33  399.83  228.38  399.84  229.28  399.98  241.94     402
  244.19  402.33   245.2  402.41  256.53  403.57  260.47     404  263.82  404.49
   264.1   404.5  265.84  404.75  266.21  404.74  266.51  404.74  269.44  405.12
   281.2     406  307.11     406

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  120.05    .025  151.45    .055  165.14    .016  179.62    .055
  195.68    .025   221.2    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        165.14  179.62           163.23  161.92  160.75             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
   273.6  306.99     410       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    14.5    53.7     410

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8776

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  404.02     .32     404   48.65     404   62.12   402.5   66.46     402
   80.78  400.01   80.88     400   80.94  399.99   83.05  399.69   85.75   399.3
   85.97  399.27   86.02  399.26   94.56  398.79      95  398.66   104.7  398.95
  112.97  399.21  113.61  399.61  119.65  399.47  128.08  397.38  132.67  395.23
  133.23  394.97  136.73  393.04  144.47  392.95  148.08  394.88  152.66  396.57
  152.67  396.58  156.39  397.95  164.19  398.93  169.62  399.23  170.14  399.01
  178.25  398.86  189.11  398.71  206.52  402.51  206.57  402.53  206.77   402.6
  206.99  402.68  207.26  402.78  208.93  403.39  216.05     406  217.54  406.42
  223.17     408  228.58  408.88  230.19  409.09  233.25  409.56  237.39     410
  260.55     410

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   94.56    .025  119.65    .055  133.23    .016  148.08    .055
  164.19    .025  189.11    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        133.23  148.08           150.65  147.84  144.92             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     5.3    36.7     410   242.6  260.55     415

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8628

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     400   43.24     400   67.19  398.75   67.49  398.74   67.73  398.73
   68.24   398.7   68.32  398.69   68.41  398.69   68.68  398.67   68.77  398.67
   85.99  397.88   92.07  397.58   92.45   397.4  102.08  397.51  110.87  397.66
  111.48     398  117.04  397.75  126.38   395.5  129.16  394.42  130.11  394.05
  133.66  391.99  141.81  392.03  145.69   394.2  149.16  395.59  151.61  396.57
  162.06  397.95  167.53  398.25  167.98  397.98  177.17  397.66  186.26  397.42
  186.67  397.61  193.56  398.98  193.62     399  193.64     399  196.35  399.64
  206.39     402  212.11  403.16  216.57     404  219.52  404.54  220.37  404.68
```

222.85	405.11	224.3	405.34	225.44	405.53	227.17	405.78	227.52	405.83
228.81	406	230.99	406.22	232.36	406.33	232.68	406.36	235.09	406.54
237.05	406.66	237.73	406.69	238.84	406.74	239.66	406.76	241.98	406.81
242.96	406.84	244.55	406.85	245.61	406.87	247.83	406.87	249.36	406.86
249.93	406.85	251.39	406.82	252.48	406.8	254.7	406.71	255.71	406.68
257.9	406.57	260.13	406.42	260.76	406.39	261.31	406.36	262.94	406.24

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	92.07	.025	117.04	.055	130.11	.016	145.69	.055
162.06	.025	186.67	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
130.11	145.69	174.55	169.35	164.24	.1 .3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
2.3	34.3	408	248.8	262.94	408

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8459

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400	9.36	400	19.64	399.33	21.18	399.35	21.52	399.32
24.66	399.35	25.01	399.32	25.43	399.29	27.8	399.31	29.23	399.19
31.5	399.19	32.66	399.09	33.88	399	37.04	398.98	37.68	398.93
38.41	398.88	40.3	398.84	41.85	398.75	42.89	398.71	46.29	398.53
46.67	398.51	47.01	398.49	52.88	398.19	53.02	398.18	53.15	398.17
55.56	398.02	55.82	398	62.38	397.62	63.06	397.58	63.09	397.58
63.13	397.57	63.45	397.55	63.5	397.55	63.56	397.54	70.83	396.9
74.37	396.43	74.76	396.35	84.77	396.45	93.28	396.59	93.77	396.9
99.65	396.57	109.58	394.6	111.17	393.84	116.68	391.22	127.02	391.25
131.21	393.31	133.8	394.59	144.34	396.93	149.92	397.28	150.64	396.93
159.51	396.62	169.28	396.29	183.57	398.17	183.62	398.18	183.63	398.18
185.91	398.46	197.93	400	208.17	400	236.83	400.54		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	74.37	.025	99.65	.055	111.17	.016	131.21	.055
144.34	.025	169.28	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
111.17	131.21	130.02	130.06	129.9	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	31.8	405	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
225.5	236.83	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8329

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.45	.1	404.44	10.11	404	11.46	403.88	12.95	403.74
23.76	402.76	32.08	402	49.55	400.47	55.09	400	63.11	399.38
68.27	398.99	69.9	398.87	74.31	398.54	76.69	398.38	77.2	398.34
77.57	398.32	78.2	398.29	81.68	398	89.2	397.56	91.32	397.42
102.6	396.76	105.56	396.59	106.64	396.53	110.81	396.35	111.74	396.34
112.73	396.21	114.11	396.05	114.19	396.05	114.63	396	120.71	396
123.02	395.96	125.61	395.91	125.66	395.91	145.26	395.65	156.65	395.61
164.77	395.63	165.48	396.09	171.49	395.76	181.7	393.87	184.07	392.66
184.08	392.65	188.11	390.6	199.42	390.59	204.09	392.91	204.1	392.92
205.9	393.81	215.33	395.81	220.73	396.05	221.25	395.7	231.82	395.42
240.94	395.26	241.45	395.36	245.66	395.51	245.71	395.51	250.67	396
286.88	396	288.42	396.08	290.22	396.18	290.58	396.19	292.31	396.28
292.84	396.29	311.28	397.09	313.1	397.11	313.59	397.13	315.42	397.14
315.88	397.16	354.04	398	363.84	398	390.19	399.04	413.91	400

```
  415.45     400  418.67  400.26  421.83  400.42  424.26  400.59  428.97  400.87

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  171.49    .055  184.08    .016  204.09    .055  215.33    .025
  241.45    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        184.08  204.09             163  162.96  163.01             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8166

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  407.18   10.95  406.06   11.43     406   24.94     404   31.24   403.5
   51.13     402   58.41  401.57   61.68  401.44   67.96  401.12   70.57  401.01
    75.8  400.78   92.43     400   95.26  399.73   97.88   399.5  116.77  398.02
  123.11  397.34  130.08  396.64  136.18     396  143.43  395.41  151.49  394.83
   156.8  394.67  157.23  394.43   167.2  394.49  175.42  394.64  175.99  395.07
  182.18  394.56  192.61  393.19   195.6  391.81  195.62  391.81  199.52  390.01
  209.72   389.9  215.63   392.6  216.91  393.19  226.27  394.79  232.22  395.11
  232.69  394.84  241.53  394.73  249.43  394.38  250.11  394.19  251.06  394.19
  251.58  394.34  263.46   394.7  306.44     396  310.24  396.14   314.3  396.27
  317.64  396.36  320.99  396.42  337.89  397.34   339.6  397.39  346.22     398
  352.09  399.29  355.26     400  359.79  401.05  364.78  402.01  371.43  402.81
  372.98  402.97  381.44  403.94  381.92     404  395.38  404.92  403.91   405.1
  407.31  405.27  413.83  405.43  427.96     406  430.31     406  432.23  406.23
  432.81  406.28  436.23   406.7  436.99  406.75  439.03     407  441.12  407.13
  448.98     408  457.02     408  458.29  408.06  474.42  408.42

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   156.8    .025  182.18    .055   195.6    .016  215.63    .055
  226.27    .025  251.58    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         195.6  215.63           156.55  156.02  156.27             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   439.1  474.42     410

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8010

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  402.55      7.4  402.14   36.62     400   58.24     398   76.34  397.19
    80.9  397.04  106.18     396  109.51  395.67  113.88  395.49  116.92   395.3
  123.63  395.35  126.43  395.11  130.93   395.1  131.95  395.05  137.04   395.1
  139.18  395.28  143.21  395.28  150.26     396  167.06     396  172.85  395.46
  177.16  395.09  177.83  394.49  188.81  394.76  196.75  394.99   197.4  395.47
  203.61  395.65  210.06  395.31  215.11  392.67  215.13  392.66  218.44  390.93
  224.05  389.05  227.47  388.95   234.6   391.6   235.2  391.88  241.59  394.82
  247.16  395.46  254.01  395.47   254.7  394.99  273.39  394.47  274.44  394.98
  276.64   395.3  280.47  395.38  285.76  395.58  293.73  391.98  300.77     390
  303.67     390  307.27  390.56  313.51     392  315.93   392.9   318.7     394
  327.82  395.21  342.23  397.21  347.44     398  348.71  398.27  358.84     400
   372.9  401.61  377.47     402  379.02  402.29  380.27  402.43  382.86  402.88
  384.55  403.06  385.41  403.22  389.98   403.8  394.72  404.54  404.52     406
  423.74     408  438.67     410  439.79     410  449.95  410.67  481.28  412.56

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  177.16    .025  210.06    .055  218.44    .016   234.6    .055
  247.16    .025  280.47    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        218.44   234.6            48.73   88.82  110.46             .1       .3
```

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
285.69	330.5	395.58	F

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7921

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.27	2.35	402.24	9.79	402.05	10.85	402	23.33	401.47
24.1	401.44	27.36	401.31	30.17	401.2	32.12	401.15	36.66	401.01
38.26	400.95	41.05	400.83	41.66	400.81	44.82	400.66	48.42	400.48
48.82	400.46	50.4	400.37	53.99	400.16	56.46	400	70.05	398.87
80.48	398	83.88	397.75	84.92	397.69	92.06	397.18	95.78	397
101.94	396.67	104.07	396.53	114.28	396	117.76	395.27	119.5	394.95
120.43	394.79	123.54	394.3	125.57	394	134.73	392.71	138.15	392.29
140.39	392	165.14	392	168.49	393.04	169.81	393.46	171.33	394
172.39	394.09	179.24	395.77	183.72	396.33	184.12	396.38	195.25	395.89
202.88	395.48	203.82	394.92	215.26	395.27	224.99	395.56	225.75	395.99
232.65	396.14	238.38	397.12	239	397.24	239.31	394.03	244.85	391.38
248.52	389.63	258.97	388.63	274.93	387.21	296.02	387.72	304.27	388.31
304.29	388.31	316.38	389.18	330.87	391.74	340.26	394.76	347.34	397.29
351.54	397.3	361.79	398.12	375.83	398.18	383.29	398.14	384.03	397.63
396.44	397.32	411.59	396.99	412.44	397.58	415.27	397.7	420.29	397.87
432.07	398.45								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	202.88	.025	232.65	.055	248.52	.016	316.38	.075
375.83	.025	420.29	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
248.52	316.38	168.2	186.1	189.78	.3	.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
107.24	184.19	396.379	F
184.19	248	397.12	F
317	432.07	397.12	F

BRIDGE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7800

INPUT
Description: N Chatham
Distance from Upstream XS = 26.8
Deck/Roadway Width = 53.5
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
238.39	397.12		250397.1381	394.15		315397.2395	394.2	
347.34	397.29							

Upstream Bridge Cross Section Data
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.27	2.35	402.24	9.79	402.05	10.85	402	23.33	401.47
24.1	401.44	27.36	401.31	30.17	401.2	32.12	401.15	36.66	401.01
38.26	400.95	41.05	400.83	41.66	400.81	44.82	400.66	48.42	400.48
48.82	400.46	50.4	400.37	53.99	400.16	56.46	400	70.05	398.87
80.48	398	83.88	397.75	84.92	397.69	92.06	397.18	95.78	397
101.94	396.67	104.07	396.53	114.28	396	117.76	395.27	119.5	394.95
120.43	394.79	123.54	394.3	125.57	394	134.73	392.71	138.15	392.29
140.39	392	165.14	392	168.49	393.04	169.81	393.46	171.33	394
172.39	394.09	179.24	395.77	183.72	396.33	184.12	396.38	195.25	395.89
202.88	395.48	203.82	394.92	215.26	395.27	224.99	395.56	225.75	395.99
232.65	396.14	238.38	397.12	239	397.24	239.31	394.03	244.85	391.38
248.52	389.63	258.97	388.63	274.93	387.21	296.02	387.72	304.27	388.31
304.29	388.31	316.38	389.18	330.87	391.74	340.26	394.76	347.34	397.29
351.54	397.3	361.79	398.12	375.83	398.18	383.29	398.14	384.03	397.63
396.44	397.32	411.59	396.99	412.44	397.58	415.27	397.7	420.29	397.87

```
  432.07  398.45

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  202.88    .025  232.65    .055  248.52    .016  316.38    .075
  375.83    .025  420.29    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        248.52  316.38            .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
  107.24  184.19 396.379       F
  184.19     248  397.12       F
     317  432.07  397.12       F

Downstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   62.45  396.84             120 396.282   393.2     185 395.653   392.5
  215.18  395.36

Downstream Bridge Cross Section Data
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   396.3   17.79  396.58   44.54  396.75   56.45  397.15   62.45  396.84
   74.23  392.93   81.72  390.86   91.42  389.84   100.1  389.46  100.11  389.46
  111.61  388.95  133.43  388.16  148.98  387.75  150.92   386.4  159.56  386.53
  161.02  387.98  166.33  387.83  177.83  388.51  179.97  388.75  186.19  389.45
  198.02  393.01  215.18  395.36  227.49   394.9   228.3  394.28  238.98  394.39
  254.49   394.4  272.22  394.34  289.78  393.96     306  393.51  306.75  394.09
  309.11  394.26  310.38  394.33  310.44  394.34  310.51  394.34  324.13  394.65
  362.24     396  364.63  396.25  381.06     398  387.94  398.65  402.16     400

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  133.43     .04  177.83    .055  227.49    .025  310.38    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        133.43  215.18            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     115  395.36       F
     187  402.16  395.36       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #2-YR

  E.G. US. (ft)               390.40    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               390.38    E.G. Elev (ft)              390.40        390.39
  Q Total (cfs)               189.00    W.S. Elev (ft)              390.37        390.36
  Q Bridge (cfs)              189.00    Crit W.S. (ft)              388.54        388.48
  Q Weir (cfs)                          Max Chl Dpth (ft)             3.16          3.96
  Weir Sta Lft (ft)                     Vel Total (ft/s)              1.26          1.20
```

Weir Sta Rgt (ft)		Flow Area (sq ft)	149.87	157.44
Weir Submerg		Froude # Chl	0.13	0.11
Weir Max Depth (ft)		Specif Force (cu ft)	192.66	214.18
Min El Weir Flow (ft)	396.38	Hydr Depth (ft)	2.30	2.42
Min El Prs (ft)	394.20	W.P. Total (ft)	67.48	69.11
Delta EG (ft)	0.05	Conv. Total (cfs)	23691.1	9649.9
Delta WS (ft)	0.05	Top Width (ft)	65.12	65.16
BR Open Area (sq ft)	319.22	Frctn Loss (ft)	0.01	0.04
BR Open Vel (ft/s)	1.26	C & E Loss (ft)	0.00	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.01	0.05
BR Sel Method	Energy only	Power Total (lb/ft s)	0.01	0.07

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	391.48	Element		
W.S. US. (ft)	391.43	E.G. Elev (ft)	391.48	391.47
Q Total (cfs)	397.00	W.S. Elev (ft)	391.43	391.41
Q Bridge (cfs)	397.00	Crit W.S. (ft)	389.09	389.02
Q Weir (cfs)		Max Chl Dpth (ft)	4.22	5.01
Weir Sta Lft (ft)		Vel Total (ft/s)	1.82	1.76
Weir Sta Rgt (ft)		Flow Area (sq ft)	218.52	225.71
Weir Submerg		Froude # Chl	0.16	0.15
Weir Max Depth (ft)		Specif Force (cu ft)	401.93	430.51
Min El Weir Flow (ft)	396.38	Hydr Depth (ft)	3.36	3.47
Min El Prs (ft)	394.20	W.P. Total (ft)	69.59	71.21
Delta EG (ft)	0.07	Conv. Total (cfs)	43518.5	16995.1
Delta WS (ft)	0.07	Top Width (ft)	65.09	65.10
BR Open Area (sq ft)	319.22	Frctn Loss (ft)	0.01	0.06
BR Open Vel (ft/s)	1.82	C & E Loss (ft)	0.00	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.02	0.11
BR Sel Method	Energy only	Power Total (lb/ft s)	0.03	0.19

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	392.50	Element		
W.S. US. (ft)	392.41	E.G. Elev (ft)	392.50	392.48
Q Total (cfs)	698.00	W.S. Elev (ft)	392.40	392.37
Q Bridge (cfs)	698.00	Crit W.S. (ft)	389.60	389.55
Q Weir (cfs)		Max Chl Dpth (ft)	5.19	5.97
Weir Sta Lft (ft)		Vel Total (ft/s)	2.48	2.42
Weir Sta Rgt (ft)		Flow Area (sq ft)	281.82	288.25
Weir Submerg		Froude # Chl	0.19	0.19
Weir Max Depth (ft)		Specif Force (cu ft)	676.61	710.28
Min El Weir Flow (ft)	396.38	Hydr Depth (ft)	4.33	4.43
Min El Prs (ft)	394.20	W.P. Total (ft)	71.54	73.14
Delta EG (ft)	0.11	Conv. Total (cfs)	65285.6	25043.7
Delta WS (ft)	0.11	Top Width (ft)	65.06	65.04
BR Open Area (sq ft)	319.22	Frctn Loss (ft)	0.01	0.08
BR Open Vel (ft/s)	2.48	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.03	0.19
BR Sel Method	Energy only	Power Total (lb/ft s)	0.07	0.46

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	392.96	Element		
W.S. US. (ft)	392.85	E.G. Elev (ft)	392.96	392.94
Q Total (cfs)	862.00	W.S. Elev (ft)	392.84	392.81
Q Bridge (cfs)	862.00	Crit W.S. (ft)	389.83	389.80
Q Weir (cfs)		Max Chl Dpth (ft)	5.63	6.41
Weir Sta Lft (ft)		Vel Total (ft/s)	2.78	2.76
Weir Sta Rgt (ft)		Flow Area (sq ft)	310.15	312.02
Weir Submerg		Froude # Chl	0.21	0.20
Weir Max Depth (ft)		Specif Force (cu ft)	826.24	861.44
Min El Weir Flow (ft)	396.38	Hydr Depth (ft)	4.77	8.53
Min El Prs (ft)	394.20	W.P. Total (ft)	72.41	102.12
Delta EG (ft)	0.14	Conv. Total (cfs)	75971.8	22545.1
Delta WS (ft)	0.15	Top Width (ft)	65.04	36.59
BR Open Area (sq ft)	319.22	Frctn Loss (ft)	0.02	0.11
BR Open Vel (ft/s)	2.78	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.03	0.28
BR Sel Method	Energy only	Power Total (lb/ft s)	0.10	0.77

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #7-30-2016

			Inside BR US	Inside BR DS
E.G. US. (ft)	393.26	Element		
W.S. US. (ft)	393.14	E.G. Elev (ft)	393.25	393.23
Q Total (cfs)	945.00	W.S. Elev (ft)	393.12	393.08
Q Bridge (cfs)	945.00	Crit W.S. (ft)	389.94	389.91
Q Weir (cfs)		Max Chl Dpth (ft)	5.91	6.68
Weir Sta Lft (ft)		Vel Total (ft/s)	2.87	2.97
Weir Sta Rgt (ft)		Flow Area (sq ft)	328.84	318.57
Weir Submerg		Froude # Chl	0.21	0.21
Weir Max Depth (ft)		Specif Force (cu ft)	928.00	961.12
Min El Weir Flow (ft)	396.38	Hydr Depth (ft)	5.06	28.99
Min El Prs (ft)	394.20	W.P. Total (ft)	72.98	127.99
Delta EG (ft)	0.18	Conv. Total (cfs)	83312.7	19469.9
Delta WS (ft)	0.18	Top Width (ft)	65.03	10.99
BR Open Area (sq ft)	319.22	Frctn Loss (ft)	0.02	0.14
BR Open Vel (ft/s)	2.97	C & E Loss (ft)	0.01	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.04	0.37
BR Sel Method	Energy only	Power Total (lb/ft s)	0.10	1.09

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7735

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.3	17.79	396.58	44.54	396.75	56.45	397.15	62.45	396.84
74.23	392.93	81.72	390.86	91.42	389.84	100.1	389.46	100.11	389.46
111.61	388.95	133.43	388.16	148.98	387.75	150.92	386.4	159.56	386.53
161.02	387.98	166.33	387.83	177.83	388.51	179.97	388.75	186.19	389.45
198.02	393.01	215.18	395.36	227.49	394.9	228.3	394.28	238.98	394.39
254.49	394.4	272.22	394.34	289.78	393.96	306	393.51	306.75	394.09
309.11	394.26	310.38	394.33	310.44	394.34	310.51	394.34	324.13	394.65
362.24	396	364.63	396.25	381.06	398	387.94	398.65	402.16	400

```
Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  133.43     .04  177.83    .055  227.49    .025  310.38    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        133.43  215.18           142.82   90.04   69.09             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     115  395.36       F
     187  402.16  395.36       F

LATERAL STRUCTURE


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7717

INPUT
Description: N Chatham Overflow
Lateral structure position     = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width        =       2
Weir Coefficient          =       2
Weir Flow Reference       = Water Surface
 Weir Embankment Coordinates    num =        5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     -50  395.36   39.54  393.75  124.15  392.21  186.01   391.2     247   390.9

Weir crest shape                          = Broad Crested


LATERAL STRUCTURE OUTPUT  Profile #2-YR  Lateral Structure

  E.G. US. (ft)                 390.35    Weir Sta US (ft)
  W.S. US. (ft)                 390.32    Weir Sta DS (ft)
  E.G. DS (ft)                  387.91    Min El Weir Flow (ft)         390.90
  W.S. DS (ft)                  387.78    Wr Top Wdth (ft)
  Q US (cfs)                    189.00    Weir Max Depth (ft)
  Q Leaving Total (cfs)           0.00    Weir Avg Depth (ft)
  Q DS (cfs)                    190.00    Weir Flow Area (sq ft)
  Perc Q Leaving                  0.00    Weir Coef (ft^1/2)             0.000
  Q Weir (cfs)                    0.00    Weir Submerg
  Q Gates (cfs)                           Q Gate Group (cfs)
  Q Culv (cfs)                            Gate Open Ht (ft)
  Q Lat RC (cfs)                          Gate #Open
  Q Outlet TS (cfs)               0.00    Gate Area (sq ft)
  Q Breach (cfs)                          Gate Submerg
  Breach Avg Velocity (ft/s)              Gate Invert (ft)
  Breach Flow Area (sq ft)                Gate Weir Coef
  Breach WD (ft)
  Breach Top El (ft)
  Breach Bottom El (ft)
  Breach SSL (ft)
  Breach SSR (ft)


LATERAL STRUCTURE OUTPUT  Profile #10-YR  Lateral Structure

  E.G. US. (ft)                 391.41    Weir Sta US (ft)
  W.S. US. (ft)                 391.36    Weir Sta DS (ft)
  E.G. DS (ft)                  389.39    Min El Weir Flow (ft)         390.90
  W.S. DS (ft)                  389.16    Wr Top Wdth (ft)
  Q US (cfs)                    397.00    Weir Max Depth (ft)
  Q Leaving Total (cfs)           0.00    Weir Avg Depth (ft)
  Q DS (cfs)                    403.00    Weir Flow Area (sq ft)
  Perc Q Leaving                  0.00    Weir Coef (ft^1/2)             0.000
  Q Weir (cfs)                    0.00    Weir Submerg
  Q Gates (cfs)                           Q Gate Group (cfs)
  Q Culv (cfs)                            Gate Open Ht (ft)
  Q Lat RC (cfs)                          Gate #Open
  Q Outlet TS (cfs)               0.00    Gate Area (sq ft)
  Q Breach (cfs)                          Gate Submerg
  Breach Avg Velocity (ft/s)              Gate Invert (ft)
  Breach Flow Area (sq ft)                Gate Weir Coef
  Breach WD (ft)
  Breach Top El (ft)
  Breach Bottom El (ft)
  Breach SSL (ft)
```

Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #50-YR Lateral Structure

E.G. US. (ft)	392.39	Weir Sta US (ft)	
W.S. US. (ft)	392.30	Weir Sta DS (ft)	
E.G. DS (ft)	390.57	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.13	Wr Top Wdth (ft)	
Q US (cfs)	698.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	741.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Lateral Structure

E.G. US. (ft)	392.82	Weir Sta US (ft)	
W.S. US. (ft)	392.69	Weir Sta DS (ft)	
E.G. DS (ft)	390.98	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.69	Wr Top Wdth (ft)	
Q US (cfs)	862.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	927.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Lateral Structure

E.G. US. (ft)	393.08	Weir Sta US (ft)	186.01
W.S. US. (ft)	392.95	Weir Sta DS (ft)	247.00
E.G. DS (ft)	391.19	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.94	Wr Top Wdth (ft)	49.08
Q US (cfs)	945.00	Weir Max Depth (ft)	0.04
Q Leaving Total (cfs)	0.27	Weir Avg Depth (ft)	0.02
Q DS (cfs)	1057.72	Weir Flow Area (sq ft)	0.89
Perc Q Leaving	0.03	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	0.27	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7645

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.02	4.94	394	10.64	393.74	10.96	393.73	15.06	393.54
15.59	393.52	17.34	393.44	18.71	393.39	49.35	392.967	57.1	392.86
66.29	390.32	77.21	389.99	93.33	389.71	104.18	390.05	105.31	389.72
111.39	387.95	114.49	386.68	118.37	386.41	125.33	389.1	127.91	390.1
143.93	391.75	153.06	392.71	168.44	393.75	177.22	393.47	177.5	393.47
223.31	393.03	223.82	393.02	233.1	393.29	233.46	393.29	236.26	393.4
238.69	393.5	238.95	393.5	244.54	393.77	244.67	393.77	245.96	393.83
247.21	393.88	251.47	394	254.69	394.09	255.85	394.13	255.98	394.14
257.17	394.2	257.4	394.22	257.65	394.24	258.72	394.31	259.55	394.37
260.71	394.46	261.77	394.54	264.41	394.72	281.83	396	291.62	396.82
297.74	397.33	301.31	397.63	305.66	398	307.68	398.37	308.27	398.49
309.55	398.75	313.77	399.57	315.97	400	317.17	400.15	321.34	400.67
323.25	400.9								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	49.35	.075	104.18	.04	127.91	.055	177.22	.025
236.26	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.18	168.44	85.44	84.61	84.17	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7560

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398	13.16	398	16.3	397.86	18.69	397.75	21.57	397.62
52.62	396	54.72	396	77.17	394	88.58	392.95	92.96	392.55
99.27	392.07	99.47	392.05	100.16	392	114.95	390.39	115.47	390.33
122.74	389.56	134.6	389.13	140.5	389.75	150.4	389.33	151.86	389.98
153.73	389.71	154.61	389.59	157.9	388.19	158.89	386.17	161.21	385.7
165.61	386.15	169.3	388.27	173.13	388.38	174.07	388.45	174.09	388.45
180.17	388.9	196.18	390.45	213.33	392.2	229.1	392.21	233.65	391.75
234.4	391.16	235.56	391.26	237.87	391.3	278.66	391.93	278.71	391.92
279.16	391.98	279.36	392	282.97	392	285.84	391.69	286.14	391.65
288.03	391.47	288.42	391.42	290.38	391.27	290.86	391.23	293.03	391.1
293.77	391.08	295.03	391.06	295.75	391.07	296.26	391.1	297	391.13
297.79	391.21	298.72	391.34	299.12	391.38	300.22	391.58	301.48	391.83
302.25	392	303.24	392.23	305.23	392.71	308.78	393.64	309.52	393.84
310.08	394	324.25	395.81	325.8	396	345.06	398	345.97	398.2
346.5	398.32	349.1	398.9	354.1	400	361.13	401.05	366.82	402

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	157.9	.04	169.3	.055	234.4	.025	278.71	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
157.9	213.33	62.59	61.86	60.62	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
282.96	302.26	392	T

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	32.9	400

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7499

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.55	9.17	397.27	24.09	396.85	29.99	396.7	33.44	396.57
39.96	396.38	49.86	396	52.49	396	55.42	395.85	56.63	395.81
58.3	395.73	60.74	395.64	64.59	395.46	66.9	395.37	70.43	395.2
89.36	394.57	93.12	394.44	106.41	393.95	123.58	393.69	124.46	393.7
128.86	393.64	136.64	393.51	140.68	393.47	147.39	393.47	148.97	393.45
155.58	393.5	161.68	393.48	162.44	393.46	164.58	393.44	170.22	393.22
181.89	392.72	201.39	392	217.03	390	224.47	389.79	236.8	388.86
248.34	388.61	264.24	389.13	276.64	389.89	280.11	387.94	283.32	387.81
287	387.66	292.53	387.02	293.3	385.99	296.46	385.87	300.8	385.88
302.11	388.06	303.42	388.47	303.43	388.47	304.28	388.74	309.18	388.83
317.6	390.64	326.22	391.2	334.94	390.92	335.64	390.24	344.52	390.57
373.6	390.177	386.74	390	388.74	388.5	406.08	388.5	408.08	390
413.69	392.08	415.28	392.61	419.37	394	422.85	394.56	430.78	396
436.98	396.71	449.57	398	458.27	399.13	461.4	399.37	463.76	399.64
467.25	399.79	467.61	399.83	469.29	399.93	472.83	400		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	181.89	.055	287	.04	302.11	.055	334.94	.025
373.6	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
287	326.22	62.52	61.98	61.21	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
386.59	408.08	390	T

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7437

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.86	34.9	396	37.3	396	65.79	394.99	72.05	394.7
75.42	394.61	78.52	394.43	79.74	394.41	120.94	392	136.04	391.37
155.34	390.47	159.88	390.33	181.12	390.01	191.93	390.17	197.52	390.2
205.41	390.17	210.12	390.23	222.25	390.79	231.8	390.65	235.24	390.8
239.5	390.72	242.6	390.51	243.7	393.81	244.38	393.85	244.52	393.29
252.3	393.97	265.38	393.16	272.52	391.32	282.48	390.12	291.46	388.97
291.48	388.96	293.97	388.64	295.61	384.71	296.77	385.07	298.3	384.3
298.98	384.16	301.25	384.19	305.22	384.12	308.47	383.8	309.04	384.54
315.03	386.16	316.94	386.68	328.9	390.9	343.15	390.83	353.17	390.51
353.89	389.87	355.55	389.89	373.23	390.07	390.11	390	403.96	390
407.91	389.06	411.03	388.51	411.66	388.45	414.31	388	418.89	388
423.5	388.96	423.78	388.99	427.54	390	430.04	391.02	432.84	392
437.06	393.18	439.65	394	455.4	396	464.83	396.74	470.72	397.12
472.23	397.16	478.3	397.45	483.36	397.5	496.04	397.8	500.1	398
505.53	398.38	519.88	399.49	524.94	399.82	529	400		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	244.52	.055	296.77	.04	315.03	.055	353.17	.025
390.11	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
293.97	328.9	78.48	78.48	79.28	.3 .5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	292	390.32	F
330	403.94	390.32	F
403.94	427.58	390	T

BRIDGE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7400

INPUT
Description: Private Drive to School/Church
Distance from Upstream XS = 19
Deck/Roadway Width = 26.5
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates

num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
273	390.523		293.3	390.83		293.94	390.8203	388.82
320.94	390.4131	388.36	330.1	390.275				

Upstream Bridge Cross Section Data

Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.86	34.9	396	37.3	396	65.79	394.99	72.05	394.7
75.42	394.61	78.52	394.43	79.74	394.41	120.94	392	136.04	391.37
155.34	390.47	159.88	390.33	181.12	390.01	191.93	390.17	197.52	390.2
205.41	390.17	210.12	390.23	222.25	390.79	231.8	390.65	235.24	390.8
239.5	390.72	242.6	390.51	243.7	393.81	244.38	393.85	244.52	393.29
252.3	393.97	265.38	393.16	272.52	391.32	282.48	390.12	291.46	388.97
291.48	388.96	293.97	388.64	295.61	384.71	296.77	385.07	298.3	384.3
298.98	384.16	301.25	384.19	305.22	384.12	308.47	383.8	309.04	384.54
315.03	386.16	316.94	386.68	328.9	390.9	343.15	390.83	353.17	390.51
353.89	389.87	355.55	389.89	373.23	390.07	390.11	390	403.96	390
407.91	389.06	411.03	388.51	411.66	388.45	414.31	388	418.89	388
423.5	388.96	423.78	388.99	427.54	390	430.04	391.02	432.84	392
437.06	393.18	439.65	394	455.4	396	464.83	396.74	470.72	397.12
472.23	397.16	478.3	397.45	483.36	397.5	496.04	397.8	500.1	398
505.53	398.38	519.88	399.49	524.94	399.82	529	400		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	244.52	.055	296.77	.04	315.03	.055	353.17	.025
390.11	.065								

Bank Sta: Left	Right	Coeff Contr.	Expan.
293.97	328.9	.3	.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	292	390.32	F
330	403.94	390.32	F
403.94	427.58	390	T

Downstream Deck/Roadway Coordinates

num= 8

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
148.65	389.87		151.8	390		244.9	390.523	
256	390.6942	388.53	264.8	390.83	388.83	283	390.5517	388.35
301.1	390.275		322	390.1				

Downstream Bridge Cross Section Data

Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.57	19.18	396	25.02	396	26.23	395.94	29.88	395.76
31.08	395.72	32.73	395.65	43.33	395.14	53.01	394.74	57.42	394.54
60	394.44	71.11	394	82.39	393.29	85.33	393.09	90.62	392.73
91.6	392.66	95.73	392.4	97.19	392.3	101.89	392.04	102.02	392.03
102.64	392	111.71	391.66	112.52	391.62	116.39	391.46	117.91	391.39
119.63	391.31	127.79	390.92	128.88	390.86	133.39	390.64	146.33	390
148.65	389.87	197.8	389.235	207.48	389.11	247.02	388.78	260.06	386.56
261.83	386.25	267	384.04	271.78	383.96	276.29	383.89	279.1	385.82
283.58	386.51	283.6	386.51	293.28	388	308.92	391.17	338.91	390.22
343.99	390	364.27	390	364.77	389.75	400.63	389.75	401.13	390
429.27	390	443.29	391.39	445.37	391.46	446.23	391.48	446.91	391.51
447.8	391.52	448.1	391.53	449	391.53	449.3	391.55	450.2	391.55
468.04	392	470.36	392	473.67	392.18	474.82	392.24	482.25	392.66
485.63	392.85	492.04	393.22	499.3	393.61	500.79	393.69	506.62	394
510.56	394	529.82	394.67	530.59	394.68	532.27	394.85	533.97	395.03
534.59	395.05	536.96	395.34	537.45	395.36	542.27	396	545.21	396
552.15	396.29								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	197.8	.055	261.83	.04	279.1	.055	364.77	.025
401.13	.065								

Bank Sta: Left	Right	Coeff Contr.	Expan.
261.83	308.92	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	255	389	F
284	552.15	389	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical

Downstream Embankment side slope = 0 horiz. to 1.0 vertical

```
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #2-YR

  E.G. US. (ft)                387.89    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)                387.77    E.G. Elev (ft)              387.84        387.78
  Q Total (cfs)                190.00    W.S. Elev (ft)              387.72        387.65
  Q Bridge (cfs)               190.00    Crit W.S. (ft)              385.99        386.03
  Q Weir (cfs)                           Max Chl Dpth (ft)             3.92          3.76
  Weir Sta Lft (ft)                      Vel Total (ft/s)              2.85          2.87
  Weir Sta Rgt (ft)                      Flow Area (sq ft)            66.75         66.14
  Weir Submerg                           Froude # Chl                  0.31          0.27
  Weir Max Depth (ft)                    Specif Force (cu ft)        120.06        116.30
  Min El Weir Flow (ft)        390.01    Hydr Depth (ft)               2.62          2.45
  Min El Prs (ft)              388.82    W.P. Total (ft)              28.62         29.83
  Delta EG (ft)                  0.16    Conv. Total (cfs)           3851.8        4547.6
  Delta WS (ft)                  0.18    Top Width (ft)               25.52         27.02
  BR Open Area (sq ft)          89.94    Frctn Loss (ft)               0.05          0.06
  BR Open Vel (ft/s)             2.87    C & E Loss (ft)               0.00          0.00
  BR Sluice Coef                         Shear Total (lb/sq ft)        0.35          0.24
  BR Sel Method          Energy only     Power Total (lb/ft s)         1.01          0.69


Note:    Manning's n values were composited to a single value in the main channel.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.

BRIDGE OUTPUT  Profile #10-YR

  E.G. US. (ft)                389.38    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)                389.16    E.G. Elev (ft)              389.38        388.90
  Q Total (cfs)                403.00    W.S. Elev (ft)              388.82        388.60
  Q Bridge (cfs)               403.00    Crit W.S. (ft)              386.98        387.04
  Q Weir (cfs)                           Max Chl Dpth (ft)             5.02          4.71
  Weir Sta Lft (ft)                      Vel Total (ft/s)              4.48          4.45
  Weir Sta Rgt (ft)                      Flow Area (sq ft)            89.94         90.66
  Weir Submerg                           Froude # Chl                  0.35          0.38
  Weir Max Depth (ft)                    Specif Force (cu ft)        248.20        231.98
  Min El Weir Flow (ft)        390.01    Hydr Depth (ft)                             5.85
  Min El Prs (ft)              388.82    W.P. Total (ft)              58.23         42.93
  Delta EG (ft)                  0.47    Conv. Total (cfs)           3892.7        6002.7
  Delta WS (ft)                  0.56    Top Width (ft)                            15.50
  BR Open Area (sq ft)          89.94    Frctn Loss (ft)
  BR Open Vel (ft/s)             4.48    C & E Loss (ft)
  BR Sluice Coef                 0.36    Shear Total (lb/sq ft)        1.03          0.59
  BR Sel Method          Press Only      Power Total (lb/ft s)         4.63          2.64


Note:    The downstream water surface is below the minimum elevation for pressure flow.  The sluice gate
equations were
         used for pressure flow.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water surface was used.
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	390.57	Element		
W.S. US. (ft)	390.12	E.G. Elev (ft)	390.56	390.40
Q Total (cfs)	741.00	W.S. Elev (ft)	390.12	390.12
Q Bridge (cfs)	487.46	Crit W.S. (ft)	388.11	388.12
Q Weir (cfs)	125.38	Max Chl Dpth (ft)	6.32	6.23
Weir Sta Lft (ft)	153.36	Vel Total (ft/s)	4.74	3.82
Weir Sta Rgt (ft)	428.92	Flow Area (sq ft)	156.38	193.88
Weir Submerg	0.00	Froude # Chl	0.57	0.52
Weir Max Depth (ft)	0.69	Specif Force (cu ft)	497.58	482.71
Min El Weir Flow (ft)	390.01	Hydr Depth (ft)	6.54	1.63
Min El Prs (ft)	388.82	W.P. Total (ft)	82.58	177.32
Delta EG (ft)	0.48	Conv. Total (cfs)		
Delta WS (ft)	0.26	Top Width (ft)	89.10	118.75
BR Open Area (sq ft)	89.94	Frctn Loss (ft)		
BR Open Vel (ft/s)	5.42	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	390.98	Element		
W.S. US. (ft)	390.68	E.G. Elev (ft)	390.98	390.75
Q Total (cfs)	927.00	W.S. Elev (ft)	390.68	390.55
Q Bridge (cfs)	428.89	Crit W.S. (ft)	388.42	388.53
Q Weir (cfs)	362.85	Max Chl Dpth (ft)	6.88	6.66
Weir Sta Lft (ft)	144.51	Vel Total (ft/s)	3.80	3.00
Weir Sta Rgt (ft)	429.93	Flow Area (sq ft)	243.97	309.51
Weir Submerg	0.33	Froude # Chl	0.35	0.38
Weir Max Depth (ft)	1.10	Specif Force (cu ft)	536.58	533.33
Min El Weir Flow (ft)	390.01	Hydr Depth (ft)	1.30	1.29
Min El Prs (ft)	388.82	W.P. Total (ft)	246.52	298.28
Delta EG (ft)	0.41	Conv. Total (cfs)		
Delta WS (ft)	0.26	Top Width (ft)	187.25	239.64
BR Open Area (sq ft)	89.94	Frctn Loss (ft)		
BR Open Vel (ft/s)	4.77	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy are based on critical
depth over the weir.

BRIDGE OUTPUT Profile #7-30-2016

			Inside BR US	Inside BR DS
E.G. US. (ft)	391.19	Element		
W.S. US. (ft)	390.93	E.G. Elev (ft)	391.18	390.93

Q Total (cfs)	1057.72	W.S. Elev (ft)	390.93	390.73
Q Bridge (cfs)	385.84	Crit W.S. (ft)	388.50	388.53
Q Weir (cfs)	537.52	Max Chl Dpth (ft)	7.13	6.84
Weir Sta Lft (ft)	140.08	Vel Total (ft/s)	3.56	2.83
Weir Sta Rgt (ft)	430.50	Flow Area (sq ft)	296.86	373.98
Weir Submerg	0.50	Froude # Chl	0.30	0.31
Weir Max Depth (ft)	1.31	Specif Force (cu ft)	585.33	570.37
Min El Weir Flow (ft)	390.01	Hydr Depth (ft)	1.18	1.35
Min El Prs (ft)	388.82	W.P. Total (ft)	310.96	335.64
Delta EG (ft)	0.33	Conv. Total (cfs)		
Delta WS (ft)	0.20	Top Width (ft)	251.40	276.96
BR Open Area (sq ft)	89.94	Frctn Loss (ft)		
BR Open Vel (ft/s)	4.29	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7358

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.57	19.18	396	25.02	396	26.23	395.94	29.88	395.76
31.08	395.72	32.73	395.65	43.33	395.14	53.01	394.74	57.42	394.54
60	394.44	71.11	394	82.39	393.29	85.33	393.09	90.62	392.73
91.6	392.66	95.73	392.4	97.19	392.3	101.89	392.04	102.02	392.03
102.64	392	111.71	391.66	112.52	391.62	116.39	391.46	117.91	391.39
119.63	391.31	127.79	390.92	128.88	390.86	133.39	390.64	146.33	390
148.65	389.87	197.8	389.235	207.48	389.11	247.02	388.78	260.06	386.56
261.83	386.25	267	384.04	271.78	383.96	276.29	383.89	279.1	385.82
283.58	386.51	283.6	386.51	293.28	388	308.92	391.17	338.91	390.22
343.99	390	364.27	390	364.77	389.75	400.63	389.75	401.13	390
429.27	390	443.29	391.39	445.37	391.46	446.23	391.48	446.91	391.51
447.8	391.52	448.1	391.53	449	391.53	449.3	391.55	450.2	391.55
468.04	392	470.36	392	473.67	392.18	474.82	392.24	482.25	392.66
485.63	392.85	492.04	393.22	499.3	393.61	500.79	393.69	506.62	394
510.56	394	529.82	394.67	530.59	394.68	532.27	394.85	533.97	395.03
534.59	395.05	536.96	395.34	537.45	395.36	542.27	396	545.21	396
552.15	396.29								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	197.8	.055	261.83	.04	279.1	.055	364.77	.025
401.13	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
261.83	308.92	88.04	96.77	105.03	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	255	389	F
284	552.15	389	F

LATERAL STRUCTURE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7340

INPUT

Description:
Lateral structure position = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width = 2
Weir Coefficient = 2
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 2

Sta	Elev	Sta	Elev
0	391.17	35	390

Weir crest shape = Broad Crested

LATERAL STRUCTURE OUTPUT Profile #2-YR Lateral Structure

E.G. US. (ft)	387.72	Weir Sta US (ft)	
W.S. US. (ft)	387.58	Weir Sta DS (ft)	
E.G. DS (ft)	387.60	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	387.39	Wr Top Wdth (ft)	
Q US (cfs)	190.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	190.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #10-YR Lateral Structure

E.G. US. (ft)	388.90	Weir Sta US (ft)	
W.S. US. (ft)	388.60	Weir Sta DS (ft)	
E.G. DS (ft)	388.79	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	388.48	Wr Top Wdth (ft)	
Q US (cfs)	403.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	403.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #50-YR Lateral Structure

E.G. US. (ft)	390.09	Weir Sta US (ft)	
W.S. US. (ft)	389.86	Weir Sta DS (ft)	
E.G. DS (ft)	389.99	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	389.75	Wr Top Wdth (ft)	
Q US (cfs)	741.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	741.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	

Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Lateral Structure

E.G. US. (ft)	390.57	Weir Sta US (ft)	0.00
W.S. US. (ft)	390.43	Weir Sta DS (ft)	35.00
E.G. DS (ft)	390.49	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	390.30	Wr Top Wdth (ft)	10.12
Q US (cfs)	927.00	Weir Max Depth (ft)	0.30
Q Leaving Total (cfs)	1.35	Weir Avg Depth (ft)	0.15
Q DS (cfs)	925.66	Weir Flow Area (sq ft)	1.53
Perc Q Leaving	0.14	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	1.35	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Lateral Structure

E.G. US. (ft)	390.85	Weir Sta US (ft)	0.00
W.S. US. (ft)	390.73	Weir Sta DS (ft)	35.00
E.G. DS (ft)	390.78	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	390.61	Wr Top Wdth (ft)	20.33
Q US (cfs)	1057.72	Weir Max Depth (ft)	0.61
Q Leaving Total (cfs)	7.67	Weir Avg Depth (ft)	0.30
Q DS (cfs)	1050.06	Weir Flow Area (sq ft)	6.16
Perc Q Leaving	0.72	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	7.67	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7261

INPUT
Description:
Station Elevation Data   num=   56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.52	11.16	396.13	11.49	396.12	14.84	396	19.03	396
31.29	395.48	32.33	395.45	37.78	395.24	39.36	395.17	40.43	395.13
45.64	394.87	46.72	394.83	47.74	394.79	50.86	394.63	51.69	394.6
55.43	394.43	56.02	394.4	56.87	394.35	65.64	394	66.27	393.97
66.34	393.97	68.25	393.87	69.12	393.83	71.37	393.71	72.13	393.67
73.08	393.62	77.56	393.37	80.58	393.19	99.36	392	106.9	391.65
117.58	391.15	124.47	390.84	131.93	390.49	142.34	390	150.21	389.53
158.04	389.08	161.74	388.88	161.88	388.87	183.31	387.65	187.17	387.43
187.23	387.43	215.39	386.78	238.03	387.04	238.44	387.05	242.11	383.75
244.57	382.89	249.17	383.78	251.81	385.86	258.14	387.45	258.15	387.45

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     264  388.91  282.39  395.82  284.39  395.75  295.46  395.49  296.12  395.12
  316.31  395.46

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  161.88    .085  238.44     .04  258.14    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        238.44  258.14           198.31  202.16  205.99             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7059

INPUT
Description:
Station Elevation Data    num=      31
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   394.9   12.54  394.26   17.77     394   18.74     394   37.67  392.94
   54.23     392   55.28  391.94   56.04  391.89   69.43  391.06   86.78     390
  111.05  388.93  115.58  388.73  116.27  388.69  116.33  388.69   153.2  387.09
  178.63  385.82  182.48  385.63  184.66  382.67  188.14  382.53  194.24  382.53
  195.94  384.19  198.69  385.84  198.71  385.85   209.3  392.23  221.62  403.18
  233.11  403.18  233.79  402.85  259.74   402.5  338.53  403.99  339.19     404
  350.39     404

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  116.27    .085  178.63     .04  198.71    .085  233.11    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        178.63  198.71           168.76  169.64  170.29             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   261.9  350.39     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 6890

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   394.3   13.98     394   17.28     394   26.86   393.7   27.04   393.7
   34.09  393.42   34.57   393.4   35.15  393.38   35.72  393.35   36.46  393.31
   37.31  393.27   39.62  393.17   65.29     392   68.45  391.85   70.12  391.77
   78.63  391.37  110.47     390  112.55  389.88  113.04  389.85  118.83  389.49
     121  389.35  128.16  388.89   132.1  388.64  138.52  388.23  139.26  388.18
  151.02  388.14  177.71  386.13  206.04  385.19  209.04   382.1  209.48  381.65
  214.16  381.04  217.26  381.23  221.62  384.16  221.67   384.2  221.74  384.25
  221.98  384.45  222.05   384.5  226.69     388   227.2     388  227.34  388.12
  229.12  389.72  229.13  389.74  229.43     390  231.07  391.47  231.68     392
  231.99  392.26  234.01     394  235.13  394.96  236.34     396  238.21  397.58
  238.76     398  239.84  398.64  242.65     400   247.4  401.93  247.54     402
  254.08  402.28  311.77     404  314.64     404

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025   78.63    .085  206.04     .04  226.69    .085  254.08    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        206.04  226.69           197.24  199.49  199.59             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   304.6  314.64     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 6690

INPUT
Description:
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Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.97	9.56	396.32	13.05	396.18	13.29	396.17	15.54	396.08
15.66	396.08	17.8	396	20.68	395.84	21.02	395.81	21.49	395.78
37.06	394.87	38.21	394.76	44.14	394.19	44.63	394.15	46.04	394
48	393.33	49.54	392.75	51.16	392	52.72	391.33	53.29	391.15
54.75	390.76	56.06	390.39	57.3	390	100.92	390	106.99	390.9
108.3	391.09	109.27	391.28	109.32	391.29	109.37	391.29	109.38	391.3
109.43	391.3	152.71	385.84	163.54	384.7	163.98	384.66	168.46	380.92
173.86	380.59	179.48	380.65	181.3	382.1	183.67	382.49	197.16	384.73
205.42	391.59	221.07	403.46	223.51	404	294.59	404	318.16	404

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	163.54	.04	181.3	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
163.54	181.3	377.18	363.89	351.23	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
53.01	109.48	391.28	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3.8	21.3	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6326

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.12	.17	394.1	.39	394.08	.55	394.07	1.48	394
8.54	393.52	9.16	393.45	9.97	393.36	10.47	393.3	12.77	392.95
14.58	392.76	15.81	392.56	19.55	392	20.06	391.95	22.11	391.75
23.82	391.6	25.31	391.48	29.23	391.03	33.2	390.67	35.54	390.38
36.49	390.29	38.71	390	44.96	389.14	51.95	388	56.99	387.4
58.61	387.19	67.92	386	71.44	385.39	73.02	385.16	75.4	384.84
81.11	384.1	81.6	384.03	81.9	384	83.65	383.83	84.03	383.77
89.45	383.24	90.85	383.01	91.64	382.92	97.37	382	99.04	382
99.15	381.99	99.18	381.99	100.82	381.86	104.18	381.58	104.24	381.58
136.32	380.14	161.77	380	170.99	380.01	171.86	380.01	173.35	379.93
177.41	376.15	187.21	377.05	190.57	379.27	192.39	379.55	193.53	379.72
206.36	385.54	206.41	385.59	206.58	385.77	212.57	392	213.68	392.92
214.91	394	216.25	394.9	217.66	396	219.81	397.41	220.59	398
221.57	398.69	223.68	400	225.8	401.31	227.13	402	275.55	403.66
285.17	404	287.06	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	173.35	.04	190.57	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
173.35	190.57	271.56	280.95	283.31	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6045

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	1.4	405.71	1.73	405.66	3.95	405.2	5.01	405.05
7.63	404.63	9.29	404.32	11.26	404	12.26	403.68	13.01	403.46
14.32	403.03	17.73	402	18.08	401.89	18.47	401.76	20.95	400.93
23.69	400.03	23.76	400	27.2	399.06	30.51	398	33.77	397.07
37.4	396	41.28	394.98	44.92	394	47.3	393.41	52.97	392
55.18	391.44	58.72	390.52	60.71	390	64.51	388.98	68.17	388
69.43	387.72	76.91	386	77.37	386	82.19	384.45	82.33	384.4
82.38	384.39	114.77	379.87	140.12	378.58	154.89	377.51	156.71	377.38
160.04	373.45	165.47	372.69	178.5	373.65	179.33	377.25	180.24	377.41
191.95	379.48	205.32	385.5	217.03	395.24	217.08	395.26	217.18	395.28
220.9	397.31	222.17	397.99	222.19	398.01	222.2	398.03	222.23	398.1

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  222.25  398.16  222.35  398.36  222.61  398.88  224.29     402  326.13     402
  330.47  401.79

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  156.71     .04  179.33    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        156.71  179.33           209.04  198.49  192.65             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 5847

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  399.24    1.45  399.08     2.8  398.92   10.83     398   13.21  397.68
   24.43     396   25.01  395.89   35.42     394   37.27  393.74   37.79  393.69
    52.7  390.12   52.72  390.12   52.77  390.11   86.22     383  117.82  378.26
  133.59  377.77  134.53  377.22  140.83  373.57   146.8  372.61  149.54  373.16
  153.94  377.43  154.53  377.49  167.73  378.81  180.08  387.08  185.44  391.87
  185.49  391.87  185.84  391.92  189.44  391.94   190.5  392.47  190.93     396
   193.6  397.72  193.98     398  194.59  398.26  195.26  398.49  199.97     400
  266.19     400   286.7  400.45

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  133.59     .04  153.94    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        133.59  153.94           184.54  178.51  172.27             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   274.9   286.7     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 5668

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     394    2.83     394    6.39  393.53    8.52  393.37    9.42  393.29
   10.04  393.25   11.67  393.09    12.4  393.05   13.26  392.96   14.13  392.92
   15.52  392.77    18.5   392.7    19.6  392.59   28.55  392.15   30.78     392
   32.39   391.8   32.82  391.76    37.1  391.21   42.85  390.73      45  390.55
   46.39   390.5   46.97  390.47   47.22  390.45   51.29     390   56.62   389.6
   57.93  389.52   62.13  389.24   67.84  388.94   71.82   388.7    73.9  388.59
   77.36  388.37   78.88  388.27   82.49     388   88.83  387.18   98.59  385.99
  104.13  385.21  105.71  385.01  107.69   384.8   110.1  384.48  116.68     384
  117.78  383.94  120.53  383.72  121.02  383.67  122.28  383.55  123.44  383.42
  125.71  383.18  130.86  382.57  135.53     382  147.05  380.28  172.82  377.69
  200.62  376.14  220.02  376.22  238.56  376.33  240.62  376.34  244.41  372.35
  247.08  371.75  250.38  372.58  255.86  374.91  258.75  376.54  258.77  376.55
  273.07  384.62   286.6  395.41  293.35  398.75  298.49  401.68  303.94  403.42
  314.05     402  314.97  401.91  328.12     402  400.84     402   419.1  402.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  240.62     .04  258.75    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        240.62  258.75           144.79  148.68  152.52             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   398.6   419.1     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 5520
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INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.57	1.77	392.5	2.21	392.46	11.92	392	17.09	391.5
24.53	390.74	26.95	390.45	31.64	390	34.16	389.82	35.17	389.71
39.42	389.35	45.83	388.73	54.99	388.04	61.37	387.47	63.9	387.27
66.26	387.15	67.44	387.06	71.13	386.95	79.52	386.38	86.54	385.85
89.06	385.64	90.11	385.57	94.2	385.24	97.92	384.9	101.16	384.58
106.52	384	115.88	383.23	119.25	382.99	122.02	382.84	123.86	382.73
125.85	382.65	131.94	382.26	139.57	381.73	153.36	380.63	161.65	380
162.55	379.95	187.97	378	190.84	377.16	211.86	375.32	242.87	374.82
245.72	374.78	248.59	373.11	256.95	371.96	257.18	372.1	260.09	374.7
262.9	375.22	269	376.34	285.23	385.77	295.6	394.02	300.61	398.04
301.69	400	307.46	401.12	309.84	401.46	313.85	402	342.38	402.99
343.02	402.99	351.56	403.37	352.31	403.37	354.24	403.43	354.97	403.43
356.01	403.47	356.73	403.46	357.34	403.48	358.02	403.47	359.97	403.54
361.28	403.52	361.75	403.54	388.95	403.44				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	245.72	.04	260.09	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.72	260.09	75.07	77.35	79.63	.1 .3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
373.3	388.95	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5442

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400	20.17	400	24.58	399.47	27.23	399.5	29.22	399.34
30.21	399.33	37.26	398.97	52.02	398	59.75	397.4	62.81	397.22
78.24	396	88.72	395.02	98.46	394	132.72	392.26	154.81	390
176.04	388	202.11	386.21	204.71	386	230.38	384.54	231.24	384.52
234.24	384	262.33	382.28	263.68	382.25	263.99	382.19	264.46	382.22
264.94	382.15	268.52	382	279.94	381.74	286.41	381.5	298.54	380.78
301.9	380.67	308.4	380.64	312.15	380.5	314.49	380.5	320.11	380
330.71	379.38	337.1	379.1	348.09	377.94	371.78	376.41	397.93	374.82
410.38	374.17	410.4	374.17	413.82	374	416.13	371.71	419.17	371.22
424.47	371.54	428.14	373.48	431.85	373.94	435.55	374.4	448.44	380.81
457.31	388.52	469.69	395.98	474.76	398.6	475.05	398.8	476.32	399.44
478.66	400.4	482.42	401.51	484.65	402	492.73	402	500.99	402.33
511.23	402.63	525.09	402.91	537.02	403.46	539.65	403.5	541.98	403.6
548.32	404	552.12	404.33	555.02	404.48	558.6	404.56		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	413.82	.04	428.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
413.82	428.14	0	0	0 .3	.5

SUMMARY OF MANNING'S N VALUES

River:Little Plumtree

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7
Little Plumtree	9415	.075	.04	.075				
Little Plumtree	9282	.065	.04	.065				
Little Plumtree	9224	.065	.04	.065				
Little Plumtree	9100	Culvert						
Little Plumtree	9094	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	9033	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8938	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8776	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8628	.065	.025	.055	.016	.055	.025	.065

Little Plumtree	8459	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8329	.025	.055	.016	.055	.025	.065	
Little Plumtree	8166	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8010	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	7921	.075	.025	.055	.016	.075	.025	.065
Little Plumtree	7800	Bridge						
Little Plumtree	7735	.075	.04	.055	.025	.065		
Little Plumtree	7717	Lat Struct						
Little Plumtree	7645	.025	.075	.04	.055	.025	.065	
Little Plumtree	7560	.065	.04	.055	.025	.065		
Little Plumtree	7499	.025	.055	.04	.055	.025	.065	
Little Plumtree	7437	.025	.055	.04	.055	.025	.065	
Little Plumtree	7400	Bridge						
Little Plumtree	7358	.025	.055	.04	.055	.025	.065	
Little Plumtree	7340	Lat Struct						
Little Plumtree	7261	.025	.085	.04	.085			
Little Plumtree	7059	.025	.085	.04	.085	.025		
Little Plumtree	6890	.025	.085	.04	.085	.025		
Little Plumtree	6690	.085	.04	.085				
Little Plumtree	6326	.085	.04	.085				
Little Plumtree	6045	.085	.04	.085				
Little Plumtree	5847	.085	.04	.085				
Little Plumtree	5668	.085	.04	.085				
Little Plumtree	5520	.085	.04	.085				
Little Plumtree	5442	.085	.04	.085				

SUMMARY OF REACH LENGTHS

River: Little Plumtree

Reach	River Sta.	Left	Channel	Right
Little Plumtree	9415	133.08	132.78	133.29
Little Plumtree	9282	61.4	57.86	54.02
Little Plumtree	9224	128.56	130.35	131.84
Little Plumtree	9100	Culvert		
Little Plumtree	9094	57.37	60.69	64.17
Little Plumtree	9033	96.95	94.72	92.33
Little Plumtree	8938	163.23	161.92	160.75
Little Plumtree	8776	150.65	147.84	144.92
Little Plumtree	8628	174.55	169.35	164.24
Little Plumtree	8459	130.02	130.06	129.9
Little Plumtree	8329	163	162.96	163.01
Little Plumtree	8166	156.55	156.02	156.27
Little Plumtree	8010	48.73	88.82	110.46
Little Plumtree	7921	168.2	186.1	189.78
Little Plumtree	7800	Bridge		
Little Plumtree	7735	142.82	90.04	69.09
Little Plumtree	7717	Lat Struct		
Little Plumtree	7645	85.44	84.61	84.17
Little Plumtree	7560	62.59	61.86	60.62
Little Plumtree	7499	62.52	61.98	61.21
Little Plumtree	7437	78.48	78.48	79.28
Little Plumtree	7400	Bridge		
Little Plumtree	7358	88.04	96.77	105.03
Little Plumtree	7340	Lat Struct		
Little Plumtree	7261	198.31	202.16	205.99
Little Plumtree	7059	168.76	169.64	170.29
Little Plumtree	6890	197.24	199.49	199.59
Little Plumtree	6690	377.18	363.89	351.23
Little Plumtree	6326	271.56	280.95	283.31
Little Plumtree	6045	209.04	198.49	192.65
Little Plumtree	5847	184.54	178.51	172.27
Little Plumtree	5668	144.79	148.68	152.52
Little Plumtree	5520	75.07	77.35	79.63
Little Plumtree	5442	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Little Plumtree

Reach	River Sta.	Contr.	Expan.

Little Plumtree	9415		.1	.3
Little Plumtree	9282		.1	.3
Little Plumtree	9224		.3	.5
Little Plumtree	9100	Culvert		
Little Plumtree	9094		.3	.5
Little Plumtree	9033		.1	.3
Little Plumtree	8938		.1	.3
Little Plumtree	8776		.1	.3
Little Plumtree	8628		.1	.3
Little Plumtree	8459		.1	.3
Little Plumtree	8329		.1	.3
Little Plumtree	8166		.1	.3
Little Plumtree	8010		.1	.3
Little Plumtree	7921		.3	.5
Little Plumtree	7800	Bridge		
Little Plumtree	7735		.3	.5
Little Plumtree	7717	Lat Struct		
Little Plumtree	7645		.1	.3
Little Plumtree	7560		.1	.3
Little Plumtree	7499		.1	.3
Little Plumtree	7437		.3	.5
Little Plumtree	7400	Bridge		
Little Plumtree	7358		.3	.5
Little Plumtree	7340	Lat Struct		
Little Plumtree	7261		.1	.3
Little Plumtree	7059		.1	.3
Little Plumtree	6890		.1	.3
Little Plumtree	6690		.1	.3
Little Plumtree	6326		.1	.3
Little Plumtree	6045		.1	.3
Little Plumtree	5847		.1	.3
Little Plumtree	5668		.1	.3
Little Plumtree	5520		.1	.3
Little Plumtree	5442		.3	.5

HEC-RAS Plan: R River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	9415	2-YR	189.00	396.28	399.84	398.73	400.04	0.003895	3.64	51.98	25.34	0.45
Little Plumtree	9415	10-YR	397.00	396.28	401.69	399.74	401.88	0.001752	3.59	137.08	66.30	0.33
Little Plumtree	9415	50-YR	698.00	396.28	402.60	400.80	402.91	0.002253	4.72	204.54	81.66	0.39
Little Plumtree	9415	100-YR	862.00	396.28	402.98	401.26	403.35	0.002497	5.24	236.87	90.25	0.41
Little Plumtree	9415	7-30-2016	945.00	396.28	403.12	401.45	403.53	0.002682	5.54	249.81	94.39	0.43
Little Plumtree	9282	2-YR	189.00	395.11	399.46	397.90	399.62	0.002464	3.22	61.27	32.20	0.35
Little Plumtree	9282	10-YR	397.00	395.11	401.53	399.03	401.68	0.001167	3.28	165.08	74.89	0.27
Little Plumtree	9282	50-YR	698.00	395.11	402.37	400.09	402.63	0.001777	4.52	240.86	109.41	0.34
Little Plumtree	9282	100-YR	862.00	395.11	402.72	400.61	403.03	0.002024	5.03	282.62	126.54	0.37
Little Plumtree	9282	7-30-2016	945.00	395.11	402.85	400.84	403.19	0.002197	5.32	298.36	131.84	0.38
Little Plumtree	9224	2-YR	189.00	395.12	399.39	397.47	399.50	0.001519	2.60	72.56	27.75	0.28
Little Plumtree	9224	10-YR	397.00	395.12	401.49	398.46	401.62	0.000892	2.88	152.81	55.87	0.24
Little Plumtree	9224	50-YR	698.00	395.12	402.28	399.49	402.53	0.001495	4.16	217.86	111.90	0.32
Little Plumtree	9224	100-YR	862.00	395.12	402.62	399.93	402.92	0.001723	4.65	265.59	160.39	0.34
Little Plumtree	9224	7-30-2016	945.00	395.12	402.73	400.14	403.07	0.001887	4.93	284.11	179.10	0.36
Little Plumtree	9100		Culvert									
Little Plumtree	9094	2-YR	189.00	394.82	396.86	396.86	397.65	0.003475	7.11	26.57	16.91	1.00
Little Plumtree	9094	10-YR	397.00	394.82	398.52	397.92	399.22	0.001505	6.74	59.57	23.14	0.71
Little Plumtree	9094	50-YR	698.00	394.82	400.42	399.00	401.14	0.000793	6.85	114.78	45.19	0.56
Little Plumtree	9094	100-YR	862.00	394.82	401.51	399.51	402.08	0.000507	6.31	210.98	131.09	0.47
Little Plumtree	9094	7-30-2016	945.00	394.82	402.01	399.74	402.47	0.000400	5.93	279.95	146.03	0.42
Little Plumtree	9033	2-YR	189.00	394.25	396.27	396.45	397.33	0.004814	8.25	22.93	15.16	1.17
Little Plumtree	9033	10-YR	397.00	394.25	397.56	397.56	398.91	0.002770	9.37	45.59	20.08	0.98
Little Plumtree	9033	50-YR	698.00	394.25	398.81	398.81	400.71	0.002436	11.21	73.69	24.92	0.98
Little Plumtree	9033	100-YR	862.00	394.25	399.43	399.43	401.55	0.002273	11.90	90.55	29.53	0.97
Little Plumtree	9033	7-30-2016	945.00	394.25	399.93	399.75	401.96	0.001915	11.69	107.12	40.76	0.90
Little Plumtree	8938	2-YR	189.00	393.85	396.03	396.12	396.99	0.003954	7.84	24.19	15.39	1.07
Little Plumtree	8938	10-YR	397.00	393.85	397.12	397.25	398.62	0.003185	9.85	43.72	20.41	1.05
Little Plumtree	8938	50-YR	698.00	393.85	398.27	398.55	400.43	0.002975	11.99	70.03	25.91	1.07
Little Plumtree	8938	100-YR	862.00	393.85	398.81	399.17	401.28	0.002877	12.86	85.12	30.12	1.08
Little Plumtree	8938	7-30-2016	945.00	393.85	400.26	400.26	401.61	0.001162	9.87	165.03	102.76	0.72
Little Plumtree	8776	2-YR	189.00	392.95	394.85	395.17	396.14	0.006548	9.11	20.74	14.58	1.35
Little Plumtree	8776	10-YR	397.00	392.95	395.72	396.28	397.87	0.005915	11.78	35.09	18.71	1.38
Little Plumtree	8776	50-YR	698.00	392.95	396.75	397.57	399.73	0.005044	13.99	57.02	23.70	1.36
Little Plumtree	8776	100-YR	862.00	392.95	397.23	398.12	400.60	0.004797	14.94	68.95	26.03	1.36
Little Plumtree	8776	7-30-2016	945.00	392.95	397.42	398.46	401.04	0.004850	15.52	74.02	27.04	1.37
Little Plumtree	8628	2-YR	189.00	391.99	393.81	394.17	395.15	0.006858	9.26	20.40	14.48	1.38
Little Plumtree	8628	10-YR	397.00	391.99	394.61	395.26	396.90	0.007013	12.15	33.23	18.04	1.48
Little Plumtree	8628	50-YR	698.00	391.99	395.52	396.53	398.86	0.006392	14.75	51.71	22.67	1.50
Little Plumtree	8628	100-YR	862.00	391.99	395.96	397.12	399.76	0.006100	15.78	62.29	25.59	1.50
Little Plumtree	8628	7-30-2016	945.00	391.99	396.15	398.18	400.19	0.006044	16.30	67.45	26.90	1.51
Little Plumtree	8459	2-YR	189.00	391.22	392.87	393.14	393.97	0.006110	8.44	22.38	17.09	1.30
Little Plumtree	8459	10-YR	397.00	391.22	393.52	394.10	395.59	0.007692	11.55	34.42	19.79	1.53
Little Plumtree	8459	50-YR	698.00	391.22	394.14	395.21	397.59	0.008900	14.90	47.60	22.37	1.72
Little Plumtree	8459	100-YR	862.00	391.22	394.46	395.74	398.51	0.008816	16.15	54.97	23.68	1.75
Little Plumtree	8459	7-30-2016	945.00	391.22	394.62	395.99	398.94	0.008756	16.71	58.68	24.45	1.76
Little Plumtree	8329	2-YR	189.00	390.59	392.24	392.43	393.21	0.005176	7.90	23.93	17.84	1.20
Little Plumtree	8329	10-YR	397.00	390.59	393.01	393.39	394.64	0.005348	10.22	38.98	20.91	1.29
Little Plumtree	8329	50-YR	698.00	390.59	393.69	394.48	396.43	0.006097	13.31	53.95	23.59	1.45
Little Plumtree	8329	100-YR	862.00	390.59	395.90	395.01	396.93	0.001069	8.39	149.04	116.33	0.67
Little Plumtree	8329	7-30-2016	945.00	390.59	396.28	395.26	397.16	0.000883	8.02	209.86	180.09	0.62
Little Plumtree	8166	2-YR	189.00	389.90	392.27	391.86	392.72	0.001611	5.38	35.32	20.31	0.70
Little Plumtree	8166	10-YR	397.00	389.90	393.53	392.84	394.19	0.001225	6.55	64.80	28.85	0.67
Little Plumtree	8166	50-YR	698.00	389.90	395.25	393.94	395.86	0.000676	6.59	180.23	136.07	0.53
Little Plumtree	8166	100-YR	862.00	389.90	396.28	395.01	396.63	0.000366	5.53	344.07	181.16	0.41
Little Plumtree	8166	7-30-2016	945.00	389.90	396.58	395.30	396.91	0.000332	5.45	401.41	193.41	0.39
Little Plumtree	8010	2-YR	189.00	388.95	391.52	391.52	392.33	0.003365	7.24	26.39	33.12	1.00
Little Plumtree	8010	10-YR	397.00	388.95	392.57	392.57	393.85	0.002797	9.14	46.60	44.00	0.99
Little Plumtree	8010	50-YR	698.00	388.95	393.79	393.79	395.56	0.002364	10.81	75.84	54.85	0.97
Little Plumtree	8010	100-YR	862.00	388.95	394.37	394.37	396.36	0.002233	11.52	91.68	61.76	0.96
Little Plumtree	8010	7-30-2016	945.00	388.95	395.28	395.28	396.71	0.001317	10.01	144.57	136.26	0.76

HEC-RAS Plan: R River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	7921	2-YR	189.00	387.21	390.38	388.55	390.40	0.000060	1.24	153.85	76.19	0.15
Little Plumtree	7921	10-YR	397.00	387.21	391.43	389.09	391.48	0.000073	1.76	226.82	84.39	0.17
Little Plumtree	7921	50-YR	698.00	387.21	392.41	389.61	392.50	0.000096	2.39	294.29	119.56	0.20
Little Plumtree	7921	100-YR	862.00	387.21	392.85	389.83	392.96	0.000105	2.68	324.56	126.68	0.22
Little Plumtree	7921	7-30-2016	945.00	387.21	393.14	389.94	393.26	0.000104	2.77	344.43	131.14	0.22
Little Plumtree	7800		Bridge									
Little Plumtree	7735	2-YR	189.00	386.40	390.33	388.48	390.35	0.000377	1.30	164.23	102.29	0.15
Little Plumtree	7735	10-YR	397.00	386.40	391.36	389.03	391.41	0.000513	1.88	238.71	112.62	0.18
Little Plumtree	7735	50-YR	698.00	386.40	392.30	389.56	392.39	0.000711	2.57	306.55	119.16	0.22
Little Plumtree	7735	100-YR	862.00	386.40	392.70	389.79	392.82	0.000812	2.90	335.17	121.92	0.23
Little Plumtree	7735	7-30-2016	945.00	386.40	392.95	389.90	393.08	0.000821	3.02	353.49	123.67	0.24
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	190.00	386.41	389.86	389.11	390.17	0.006629	4.47	43.49	36.08	0.57
Little Plumtree	7645	10-YR	403.00	386.41	390.75	390.39	391.17	0.006745	5.53	95.92	69.43	0.66
Little Plumtree	7645	50-YR	741.00	386.41	391.54	391.18	392.09	0.007482	6.53	154.90	79.95	0.74
Little Plumtree	7645	100-YR	927.00	386.41	391.87	391.50	392.48	0.007882	6.95	182.04	84.33	0.76
Little Plumtree	7645	7-30-2016	1058.00	386.41	392.07	391.69	392.72	0.008166	7.21	199.60	87.02	0.78
Little Plumtree	7560	2-YR	190.00	385.70	389.34	388.73	389.64	0.005971	4.40	45.05	37.44	0.61
Little Plumtree	7560	10-YR	403.00	385.70	390.18	389.85	390.56	0.007330	5.20	97.79	76.60	0.66
Little Plumtree	7560	50-YR	741.00	385.70	390.88	390.57	391.37	0.009204	6.14	155.66	89.93	0.72
Little Plumtree	7560	100-YR	927.00	385.70	391.15	390.84	391.70	0.010242	6.61	180.45	99.95	0.75
Little Plumtree	7560	7-30-2016	1058.00	385.70	391.29	391.02	391.91	0.011156	6.98	194.83	109.52	0.78
Little Plumtree	7499	2-YR	190.00	385.87	388.32	388.32	389.00	0.017945	6.75	30.67	23.53	0.92
Little Plumtree	7499	10-YR	403.00	385.87	389.38	389.38	389.98	0.011593	6.79	78.80	92.13	0.85
Little Plumtree	7499	50-YR	741.00	385.87	390.61	390.18	390.89	0.005034	5.23	222.15	179.64	0.56
Little Plumtree	7499	100-YR	927.00	385.87	391.00	390.45	391.22	0.004066	4.80	294.33	192.21	0.52
Little Plumtree	7499	7-30-2016	1058.00	385.87	391.19	390.63	391.40	0.003895	4.74	332.30	203.17	0.52
Little Plumtree	7437	2-YR	190.00	383.80	387.77	386.00	387.89	0.002311	2.79	68.05	25.69	0.30
Little Plumtree	7437	10-YR	403.00	383.80	389.16	386.99	389.38	0.003054	3.76	107.70	50.91	0.35
Little Plumtree	7437	50-YR	741.00	383.80	390.12	388.11	390.57	0.005088	5.35	142.61	133.32	0.46
Little Plumtree	7437	100-YR	927.00	383.80	390.68	388.62	390.98	0.003641	4.75	254.38	206.72	0.39
Little Plumtree	7437	7-30-2016	1057.72	383.80	390.93	388.98	391.19	0.003208	4.56	312.02	251.40	0.37
Little Plumtree	7400		Bridge									
Little Plumtree	7358	2-YR	190.00	383.89	387.58	386.03	387.73	0.001823	3.05	65.79	36.53	0.33
Little Plumtree	7358	10-YR	403.00	383.89	388.60	387.05	388.90	0.002804	4.54	95.25	48.16	0.41
Little Plumtree	7358	50-YR	741.00	383.89	389.86	388.13	390.09	0.002343	4.21	239.73	189.13	0.39
Little Plumtree	7358	100-YR	927.00	383.89	390.43	388.60	390.57	0.001562	3.60	375.84	268.74	0.32
Little Plumtree	7358	7-30-2016	1057.72	383.89	390.73	389.00	390.85	0.001286	3.34	461.81	289.35	0.29
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	190.00	382.89	387.06	385.94	387.38	0.005985	4.57	46.13	53.17	0.54
Little Plumtree	7261	10-YR	403.00	382.89	388.28	387.58	388.58	0.004147	4.91	137.28	89.22	0.48
Little Plumtree	7261	50-YR	741.00	382.89	389.56	388.39	389.83	0.002934	5.13	268.86	116.00	0.42
Little Plumtree	7261	100-YR	925.66	382.89	390.09	388.72	390.35	0.002619	5.22	333.13	126.69	0.41
Little Plumtree	7261	7-30-2016	1050.06	382.89	390.38	389.00	390.64	0.002521	5.31	371.43	133.73	0.40
Little Plumtree	7059	2-YR	190.00	382.53	385.74	384.72	386.09	0.006788	4.73	40.18	18.31	0.56
Little Plumtree	7059	10-YR	403.00	382.53	387.17	386.09	387.63	0.005180	5.59	88.34	49.47	0.53
Little Plumtree	7059	50-YR	741.00	382.53	388.47	387.41	389.06	0.004737	6.63	173.95	81.71	0.54
Little Plumtree	7059	100-YR	925.66	382.53	389.11	387.96	389.67	0.004099	6.71	231.23	97.21	0.51
Little Plumtree	7059	7-30-2016	1050.06	382.53	389.44	388.27	389.99	0.003936	6.84	263.90	105.07	0.51
Little Plumtree	6890	2-YR	190.00	381.04	384.65	383.63	385.01	0.005928	4.81	39.46	15.69	0.54
Little Plumtree	6890	10-YR	403.00	381.04	385.99	384.90	386.61	0.006906	6.36	71.83	42.09	0.60
Little Plumtree	6890	50-YR	741.00	381.04	387.57	386.62	388.19	0.005510	6.83	159.94	67.49	0.56
Little Plumtree	6890	100-YR	925.66	381.04	388.22	387.15	388.88	0.005240	7.15	208.08	88.82	0.56
Little Plumtree	6890	7-30-2016	1050.06	381.04	388.57	387.44	389.23	0.005006	7.30	240.01	94.65	0.55
Little Plumtree	6690	2-YR	190.00	380.59	383.33	382.66	383.73	0.006962	5.11	40.85	23.19	0.59
Little Plumtree	6690	10-YR	403.00	380.59	384.58	383.80	385.19	0.007264	6.55	75.24	32.16	0.64
Little Plumtree	6690	50-YR	741.00	380.59	385.24	385.10	386.53	0.012648	9.60	98.97	39.37	0.86
Little Plumtree	6690	100-YR	925.66	380.59	385.62	385.62	387.18	0.013866	10.70	114.54	43.40	0.92
Little Plumtree	6690	7-30-2016	1050.06	380.59	385.94	385.94	387.59	0.013460	11.07	129.11	46.70	0.91

HEC-RAS Plan: R River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	6326	2-YR	190.00	376.15	378.67	378.67	379.52	0.022126	7.42	25.61	14.95	1.00
Little Plumtree	6326	10-YR	403.00	376.15	379.84	379.84	381.09	0.018991	8.97	45.82	20.36	0.98
Little Plumtree	6326	50-YR	741.00	376.15	381.31	381.31	382.32	0.010201	8.82	139.93	86.72	0.77
Little Plumtree	6326	100-YR	925.66	376.15	381.73	381.74	382.78	0.009953	9.30	178.19	95.51	0.77
Little Plumtree	6326	7-30-2016	1050.06	376.15	381.88	382.01	383.05	0.010871	9.94	192.82	97.68	0.81
Little Plumtree	6045	2-YR	190.00	372.69	377.35	374.62	377.43	0.000775	2.21	85.81	23.18	0.20
Little Plumtree	6045	10-YR	403.00	372.69	378.78	375.57	378.95	0.001148	3.33	138.39	51.81	0.26
Little Plumtree	6045	50-YR	741.00	372.69	380.19	376.74	380.47	0.001483	4.45	235.46	81.10	0.30
Little Plumtree	6045	100-YR	925.66	372.69	380.79	377.29	381.11	0.001582	4.86	285.75	86.72	0.32
Little Plumtree	6045	7-30-2016	1050.06	372.69	381.16	377.66	381.50	0.001635	5.11	317.98	90.14	0.33
Little Plumtree	5847	2-YR	190.00	372.61	376.93	375.30	377.14	0.003068	3.72	51.01	18.39	0.39
Little Plumtree	5847	10-YR	403.00	372.61	378.04	376.55	378.51	0.004831	5.51	75.81	34.95	0.51
Little Plumtree	5847	50-YR	741.00	372.61	379.06	377.99	379.88	0.006341	7.47	125.36	55.63	0.61
Little Plumtree	5847	100-YR	925.66	372.61	379.52	378.78	380.48	0.006749	8.21	151.55	59.34	0.64
Little Plumtree	5847	7-30-2016	1050.06	372.61	379.80	379.14	380.84	0.006946	8.64	168.64	61.65	0.66
Little Plumtree	5668	2-YR	190.00	371.75	376.32	374.81	376.56	0.003479	3.90	52.48	57.72	0.42
Little Plumtree	5668	10-YR	403.00	371.75	377.32	376.07	377.67	0.004134	5.17	122.92	80.63	0.48
Little Plumtree	5668	50-YR	741.00	371.75	378.52	377.51	378.91	0.003624	5.85	231.83	97.76	0.47
Little Plumtree	5668	100-YR	925.66	371.75	379.09	377.91	379.47	0.003376	6.07	288.48	104.33	0.46
Little Plumtree	5668	7-30-2016	1050.06	371.75	379.43	378.12	379.82	0.003260	6.21	324.91	108.34	0.46
Little Plumtree	5520	2-YR	190.00	371.96	375.22	374.73	375.73	0.009571	5.79	38.80	44.50	0.68
Little Plumtree	5520	10-YR	403.00	371.96	376.60	376.01	377.00	0.004987	5.77	123.91	72.27	0.54
Little Plumtree	5520	50-YR	741.00	371.96	378.00	376.88	378.37	0.003621	6.12	234.77	83.90	0.48
Little Plumtree	5520	100-YR	925.66	371.96	378.55	377.30	378.96	0.003597	6.54	283.53	92.07	0.49
Little Plumtree	5520	7-30-2016	1050.06	371.96	378.89	377.49	379.31	0.003589	6.79	315.19	97.02	0.49
Little Plumtree	5442	2-YR	190.00	371.22	375.05	373.68	375.27	0.002781	3.92	64.12	42.74	0.39
Little Plumtree	5442	10-YR	403.00	371.22	376.38	375.01	376.69	0.002782	4.97	137.50	67.34	0.42
Little Plumtree	5442	50-YR	741.00	371.22	377.75	376.20	378.12	0.002784	5.94	245.35	91.17	0.43
Little Plumtree	5442	100-YR	925.66	371.22	378.31	376.68	378.71	0.002781	6.32	299.32	98.84	0.44
Little Plumtree	5442	7-30-2016	1050.06	371.22	378.65	376.96	379.07	0.002780	6.54	333.64	102.75	0.44

HEC-RAS Plan: R River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	9415	2-YR	400.04	399.84	0.21	0.41	0.01		189.00		25.34	0.48
Little Plumtree	9415	10-YR	401.88	401.69	0.19	0.19	0.01	4.78	370.53	21.70	66.30	0.38
Little Plumtree	9415	50-YR	402.91	402.60	0.30	0.26	0.01	22.23	607.56	68.21	81.66	0.62
Little Plumtree	9415	100-YR	403.35	402.98	0.37	0.30	0.02	32.92	730.16	98.92	90.25	0.74
Little Plumtree	9415	7-30-2016	403.53	403.12	0.40	0.32	0.02	38.08	792.70	114.21	94.39	0.82
Little Plumtree	9282	2-YR	399.62	399.46	0.16	0.11	0.02	0.59	187.38	1.03	32.20	0.35
Little Plumtree	9282	10-YR	401.68	401.53	0.15	0.06	0.01	20.04	344.72	32.24	74.89	0.30
Little Plumtree	9282	50-YR	402.63	402.37	0.26	0.09	0.00	64.72	560.53	72.75	109.41	0.54
Little Plumtree	9282	100-YR	403.03	402.72	0.31	0.11	0.00	98.01	663.95	100.04	126.54	0.66
Little Plumtree	9282	7-30-2016	403.19	402.85	0.34	0.12	0.00	115.64	715.99	113.37	131.84	0.73
Little Plumtree	9224	2-YR	399.50	399.39	0.11				189.00		27.75	0.23
Little Plumtree	9224	10-YR	401.62	401.49	0.13			3.78	386.92	6.30	55.87	0.23
Little Plumtree	9224	50-YR	402.53	402.28	0.25			13.28	654.80	29.91	111.90	0.46
Little Plumtree	9224	100-YR	402.92	402.62	0.30			25.61	778.74	57.64	160.39	0.56
Little Plumtree	9224	7-30-2016	403.07	402.73	0.34			32.63	841.59	70.78	179.10	0.63
Little Plumtree	9100		Culvert									
Little Plumtree	9094	2-YR	397.65	396.86	0.79	0.25	0.08		189.00		16.91	0.32
Little Plumtree	9094	10-YR	399.22	398.52	0.71	0.12	0.19	0.40	396.60		23.14	0.24
Little Plumtree	9094	50-YR	401.14	400.42	0.72	0.08	0.35	7.55	687.36	3.09	45.19	0.21
Little Plumtree	9094	100-YR	402.08	401.51	0.56	0.06	0.47	23.27	784.23	54.50	131.09	0.17
Little Plumtree	9094	7-30-2016	402.47	402.01	0.47	0.05	0.47	52.87	801.05	91.07	146.03	0.14
Little Plumtree	9033	2-YR	397.33	396.27	1.06	0.38	0.06		188.99	0.01	15.16	0.44
Little Plumtree	9033	10-YR	398.91	397.56	1.35	0.28	0.01	1.50	393.31	2.20	20.08	0.46
Little Plumtree	9033	50-YR	400.71	398.81	1.90	0.25	0.03	8.66	678.66	10.68	24.92	0.58
Little Plumtree	9033	100-YR	401.55	399.43	2.12	0.24	0.03	14.86	830.25	16.88	29.53	0.63
Little Plumtree	9033	7-30-2016	401.96	399.93	2.03	0.14	0.20	19.35	902.22	23.43	40.76	0.58
Little Plumtree	8938	2-YR	396.99	396.03	0.96	0.81	0.03	0.01	188.97	0.02	15.39	0.38
Little Plumtree	8938	10-YR	398.62	397.12	1.49	0.69	0.07	1.68	392.91	2.42	20.41	0.51
Little Plumtree	8938	50-YR	400.43	398.27	2.17	0.62	0.08	8.67	676.70	12.63	25.91	0.68
Little Plumtree	8938	100-YR	401.28	398.81	2.47	0.59	0.09	14.57	827.19	20.23	30.12	0.75
Little Plumtree	8938	7-30-2016	401.61	400.26	1.35	0.34	0.23	37.18	842.17	65.65	102.76	0.40
Little Plumtree	8776	2-YR	396.14	394.85	1.29	0.99	0.00		189.00		14.58	0.55
Little Plumtree	8776	10-YR	397.87	395.72	2.15	0.95	0.01	0.60	395.34	1.05	18.71	0.78
Little Plumtree	8776	50-YR	399.73	396.75	2.98	0.84	0.04	5.63	684.03	8.33	23.70	0.97
Little Plumtree	8776	100-YR	400.60	397.23	3.37	0.80	0.04	10.38	836.71	14.91	26.03	1.06
Little Plumtree	8776	7-30-2016	401.04	397.42	3.62	0.80	0.04	12.85	913.68	18.47	27.04	1.13
Little Plumtree	8628	2-YR	395.15	393.81	1.33	1.10	0.07		189.00		14.48	0.57
Little Plumtree	8628	10-YR	396.90	394.61	2.29	1.24	0.07	0.37	396.47	0.16	18.04	0.86
Little Plumtree	8628	50-YR	398.86	395.52	3.34	1.27	0.01	4.62	690.01	3.37	22.67	1.12
Little Plumtree	8628	100-YR	399.76	395.96	3.80	1.23	0.02	8.88	846.03	7.08	25.59	1.22
Little Plumtree	8628	7-30-2016	400.19	396.15	4.04	1.22	0.03	11.68	923.96	9.36	26.90	1.28
Little Plumtree	8459	2-YR	393.97	392.87	1.11	0.73	0.04		189.00		17.09	0.48
Little Plumtree	8459	10-YR	395.59	393.52	2.07	0.83	0.13		396.98	0.02	19.79	0.81
Little Plumtree	8459	50-YR	397.59	394.14	3.44	0.95	0.21	0.07	697.00	0.93	22.37	1.23
Little Plumtree	8459	100-YR	398.51	394.46	4.04	0.20	0.22	0.45	859.35	2.21	23.68	1.39
Little Plumtree	8459	7-30-2016	398.94	394.62	4.32	0.17	0.29	0.79	941.18	3.03	24.45	1.46
Little Plumtree	8329	2-YR	393.21	392.24	0.97	0.37	0.08		189.00		17.84	0.42
Little Plumtree	8329	10-YR	394.64	393.01	1.62	0.26	0.09	0.07	396.92	0.00	20.91	0.62
Little Plumtree	8329	50-YR	396.43	393.69	2.74	0.16	0.16	1.31	696.07	0.62	23.59	0.95
Little Plumtree	8329	100-YR	396.93	395.90	1.03	0.09	0.20	23.95	811.24	26.81	116.33	0.31
Little Plumtree	8329	7-30-2016	397.16	396.28	0.88	0.08	0.17	56.27	835.30	53.43	180.09	0.27
Little Plumtree	8166	2-YR	392.72	392.27	0.45	0.35	0.04	0.09	188.91		20.31	0.17
Little Plumtree	8166	10-YR	394.19	393.53	0.66	0.28	0.06	2.35	394.13	0.52	28.85	0.22
Little Plumtree	8166	50-YR	395.86	395.25	0.60	0.18	0.12	42.71	623.61	31.68	136.07	0.19
Little Plumtree	8166	100-YR	396.63	396.28	0.35	0.12	0.16	113.83	636.90	111.27	181.16	0.13
Little Plumtree	8166	7-30-2016	396.91	396.58	0.33	0.09	0.11	140.45	661.40	143.15	193.41	0.12
Little Plumtree	8010	2-YR	392.33	391.52	0.81	0.02	0.24	0.21	188.79		33.12	0.33
Little Plumtree	8010	10-YR	393.85	392.57	1.29	0.02	0.37	2.96	393.20	0.83	44.00	0.44
Little Plumtree	8010	50-YR	395.56	393.79	1.77	0.02	0.50	12.07	679.12	6.81	54.85	0.55
Little Plumtree	8010	100-YR	396.36	394.37	1.99	0.03	0.56	19.10	830.58	12.32	61.76	0.59
Little Plumtree	8010	7-30-2016	396.71	395.28	1.43	0.02	0.39	43.11	868.81	33.08	136.26	0.42
Little Plumtree	7921	2-YR	390.40	390.38	0.02	0.00	0.00	0.05	188.84	0.12	76.19	0.01
Little Plumtree	7921	10-YR	391.48	391.43	0.05	0.00	0.00	0.27	396.35	0.39	84.39	0.02

HEC-RAS Plan: R River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	7921	50-YR	392.50	392.41	0.09	0.00	0.00	0.65	696.53	0.82	119.56	0.03
Little Plumtree	7921	100-YR	392.96	392.85	0.11	0.00	0.00	0.89	860.05	1.06	126.68	0.03
Little Plumtree	7921	7-30-2016	393.26	393.14	0.12	0.00	0.00	1.02	942.78	1.20	131.14	0.03
Little Plumtree	7800		Bridge									
Little Plumtree	7735	2-YR	390.35	390.33	0.02	0.09	0.09	19.43	169.57		102.29	0.06
Little Plumtree	7735	10-YR	391.41	391.36	0.05	0.12	0.11	47.79	349.21		112.62	0.11
Little Plumtree	7735	50-YR	392.39	392.30	0.09	0.17	0.14	90.34	607.66		119.16	0.19
Little Plumtree	7735	100-YR	392.82	392.70	0.12	0.19	0.15	113.96	748.04		121.92	0.24
Little Plumtree	7735	7-30-2016	393.08	392.95	0.13	0.20	0.16	126.39	818.61		123.67	0.25
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	390.17	389.86	0.31	0.53	0.00	0.30	189.70		36.08	0.74
Little Plumtree	7645	10-YR	391.17	390.75	0.43	0.60	0.02	42.01	360.99		69.43	0.88
Little Plumtree	7645	50-YR	392.09	391.54	0.55	0.70	0.02	139.96	601.04		79.95	1.10
Little Plumtree	7645	100-YR	392.48	391.87	0.61	0.76	0.02	197.73	729.27		84.33	1.22
Little Plumtree	7645	7-30-2016	392.72	392.07	0.65	0.80	0.01	239.10	818.90		87.02	1.31
Little Plumtree	7560	2-YR	389.64	389.34	0.30	0.59	0.04	2.10	187.90		37.44	0.55
Little Plumtree	7560	10-YR	390.56	390.18	0.38	0.56	0.02	43.90	359.10		76.60	0.84
Little Plumtree	7560	50-YR	391.37	390.88	0.49	0.41	0.06	150.35	590.65		89.93	1.24
Little Plumtree	7560	100-YR	391.70	391.15	0.55	0.38	0.10	213.51	713.49		99.95	1.46
Little Plumtree	7560	7-30-2016	391.91	391.29	0.61	0.38	0.12	257.75	800.15	0.11	109.52	1.64
Little Plumtree	7499	2-YR	389.00	388.32	0.68	0.31	0.17	8.38	181.62		23.53	1.70
Little Plumtree	7499	10-YR	389.98	389.38	0.60	0.33	0.11	74.52	328.48		92.13	1.31
Little Plumtree	7499	50-YR	390.89	390.61	0.28	0.31	0.02	274.22	431.11	35.67	179.64	0.80
Little Plumtree	7499	100-YR	391.22	391.00	0.22	0.24	0.01	356.91	458.12	111.97	192.21	0.63
Little Plumtree	7499	7-30-2016	391.40	391.19	0.21	0.22	0.00	408.82	486.29	162.89	203.17	0.61
Little Plumtree	7437	2-YR	387.89	387.77	0.12	0.05	0.00		190.00		25.69	0.34
Little Plumtree	7437	10-YR	389.38	389.16	0.22			0.62	402.38		50.91	0.60
Little Plumtree	7437	50-YR	390.57	390.12	0.44			6.26	733.61	1.13	133.32	1.18
Little Plumtree	7437	100-YR	390.98	390.68	0.29			89.25	741.24	96.50	206.72	0.92
Little Plumtree	7437	7-30-2016	391.19	390.93	0.25			153.05	750.80	153.87	251.40	0.84
Little Plumtree	7400		Bridge									
Little Plumtree	7358	2-YR	387.73	387.58	0.14	0.29	0.05	4.78	185.22		36.53	0.30
Little Plumtree	7358	10-YR	388.90	388.60	0.31	0.32	0.00	24.84	378.16		48.16	0.63
Little Plumtree	7358	50-YR	390.09	389.86	0.23	0.25	0.01	134.32	604.17	2.51	189.13	0.50
Little Plumtree	7358	100-YR	390.57	390.43	0.14	0.19	0.03	268.15	602.31	56.54	268.74	0.36
Little Plumtree	7358	7-30-2016	390.85	390.73	0.12	0.16	0.04	348.84	604.58	104.31	289.35	0.31
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	387.38	387.06	0.32	1.29	0.00	1.84	188.16		53.17	0.75
Little Plumtree	7261	10-YR	388.58	388.28	0.30	0.93	0.02	83.67	318.48	0.85	89.22	0.76
Little Plumtree	7261	50-YR	389.83	389.56	0.27	0.74	0.03	269.55	462.75	8.71	116.00	0.75
Little Plumtree	7261	100-YR	390.35	390.09	0.26	0.65	0.03	386.20	524.93	14.53	126.69	0.74
Little Plumtree	7261	7-30-2016	390.64	390.38	0.26	0.63	0.03	466.14	565.37	18.55	133.73	0.76
Little Plumtree	7059	2-YR	386.09	385.74	0.35	1.07	0.00		190.00		18.31	0.81
Little Plumtree	7059	10-YR	387.63	387.17	0.46	1.01	0.02	17.46	384.30	1.24	49.47	0.98
Little Plumtree	7059	50-YR	389.06	388.47	0.59	0.86	0.00	103.90	629.68	7.42	81.71	1.24
Little Plumtree	7059	100-YR	389.67	389.11	0.56	0.78	0.01	189.51	723.79	12.36	97.21	1.21
Little Plumtree	7059	7-30-2016	389.99	389.44	0.55	0.75	0.01	252.69	781.79	15.57	105.07	1.24
Little Plumtree	6890	2-YR	385.01	384.65	0.36	1.28	0.00		190.00		15.69	0.81
Little Plumtree	6890	10-YR	386.61	385.99	0.62	1.41	0.00	7.60	395.40		42.09	1.27
Little Plumtree	6890	50-YR	388.19	387.57	0.62	1.59	0.07	111.39	629.61		67.49	1.34
Little Plumtree	6890	100-YR	388.88	388.22	0.66	1.60	0.09	170.93	754.68	0.05	88.82	1.42
Little Plumtree	6890	7-30-2016	389.23	388.57	0.66	1.54	0.10	226.58	823.19	0.29	94.65	1.45
Little Plumtree	6690	2-YR	383.73	383.33	0.40	4.16	0.05		185.16	4.84	23.19	0.92
Little Plumtree	6690	10-YR	385.19	384.58	0.62	4.03	0.06		371.43	31.57	32.16	1.35
Little Plumtree	6690	50-YR	386.53	385.24	1.29	4.12	0.08	1.14	657.44	82.42	39.37	2.75
Little Plumtree	6690	100-YR	387.18	385.62	1.57	4.25	0.15	4.87	803.99	116.80	43.40	3.31
Little Plumtree	6690	7-30-2016	387.59	385.94	1.65	4.39	0.14	10.80	895.46	143.80	46.70	3.46
Little Plumtree	6326	2-YR	379.52	378.67	0.86	0.62	0.23		190.00		14.95	2.15
Little Plumtree	6326	10-YR	381.09	379.84	1.25	0.83	0.32		401.83	1.17	20.36	2.75
Little Plumtree	6326	50-YR	382.32	381.31	1.02	0.87	0.22	107.68	617.18	16.14	86.72	2.30
Little Plumtree	6326	100-YR	382.78	381.73	1.06	0.90	0.22	183.90	717.63	24.13	95.51	2.47

HEC-RAS Plan: R River: Little Plumtree Reach: Little Plumtree (Continued)

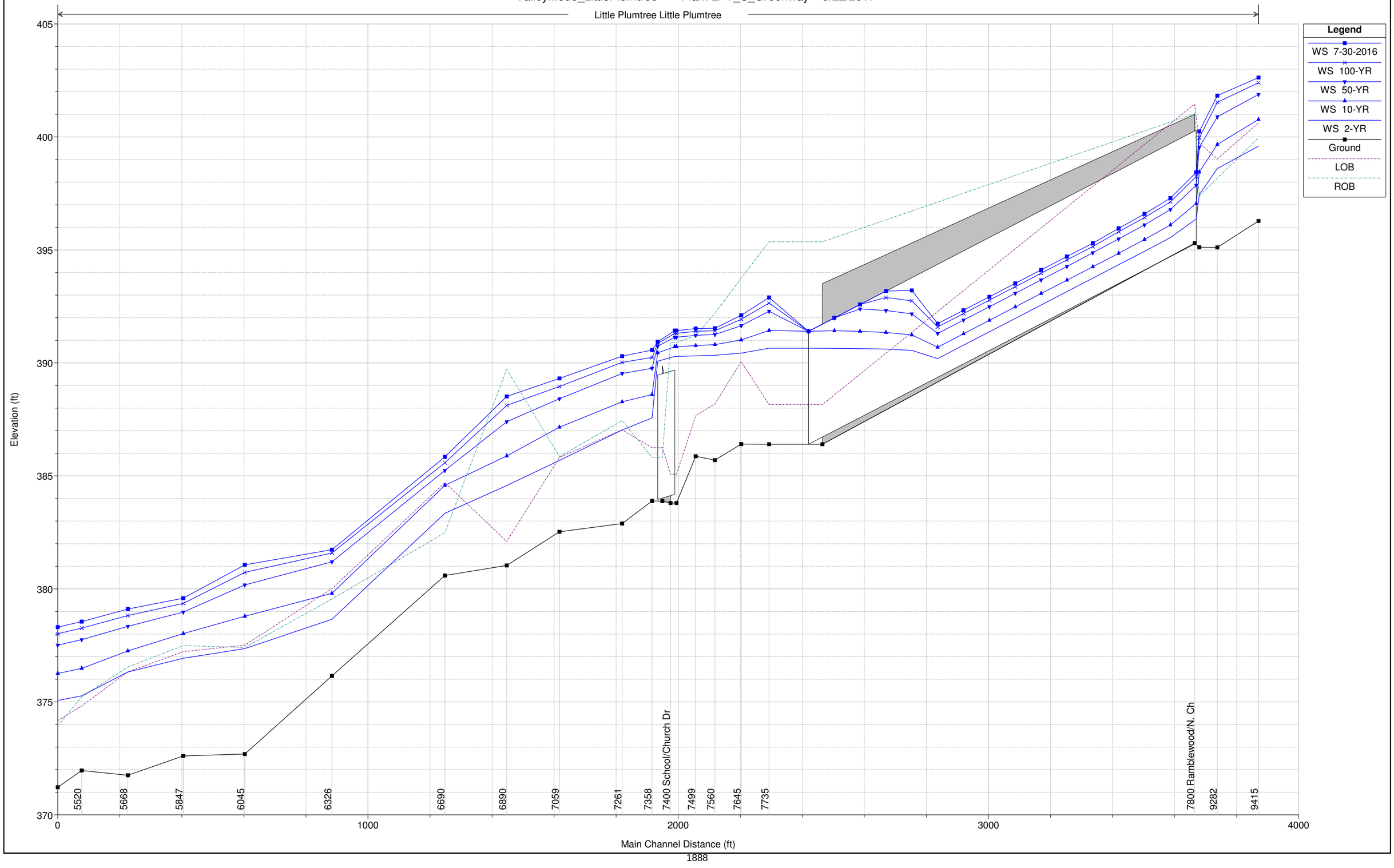
Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	6326	7-30-2016	383.05	381.88	1.18	0.91	0.21	228.52	792.70	28.84	97.68	2.79
Little Plumtree	6045	2-YR	377.43	377.35	0.08	0.27	0.01		190.00	0.00	23.18	0.15
Little Plumtree	6045	10-YR	378.95	378.78	0.17	0.41	0.03	6.17	393.57	3.25	51.81	0.31
Little Plumtree	6045	50-YR	380.47	380.19	0.28	0.54	0.05	51.78	667.19	22.03	81.10	0.51
Little Plumtree	6045	100-YR	381.11	380.79	0.32	0.57	0.06	93.42	795.88	36.36	86.72	0.59
Little Plumtree	6045	7-30-2016	381.50	381.16	0.34	0.59	0.07	124.80	878.37	46.89	90.14	0.64
Little Plumtree	5847	2-YR	377.14	376.93	0.22	0.58	0.00		190.00		18.39	0.47
Little Plumtree	5847	10-YR	378.51	378.04	0.47	0.80	0.03	0.36	401.64	1.00	34.95	0.94
Little Plumtree	5847	50-YR	379.88	379.06	0.82	0.84	0.13	23.82	700.17	17.01	55.63	1.59
Little Plumtree	5847	100-YR	380.48	379.52	0.96	0.83	0.17	46.77	845.36	33.52	59.34	1.86
Little Plumtree	5847	7-30-2016	380.84	379.80	1.04	0.83	0.20	65.00	938.91	46.14	61.65	2.02
Little Plumtree	5668	2-YR	376.56	376.32	0.24	0.81	0.03	0.87	189.13		57.72	0.52
Little Plumtree	5668	10-YR	377.67	377.32	0.36	0.67	0.00	59.11	343.59	0.29	80.63	0.82
Little Plumtree	5668	50-YR	378.91	378.52	0.38	0.53	0.00	220.86	516.80	3.34	97.76	0.96
Little Plumtree	5668	100-YR	379.47	379.09	0.39	0.51	0.00	321.36	598.05	6.25	104.33	0.99
Little Plumtree	5668	7-30-2016	379.82	379.43	0.39	0.50	0.00	390.76	650.69	8.61	108.34	1.02
Little Plumtree	5520	2-YR	375.73	375.22	0.51	0.36	0.09	3.75	185.76	0.49	44.50	1.20
Little Plumtree	5520	10-YR	377.00	376.60	0.39	0.28	0.03	90.42	300.49	12.09	72.27	1.02
Little Plumtree	5520	50-YR	378.37	378.00	0.37	0.24	0.00	259.52	440.93	40.56	83.90	1.02
Little Plumtree	5520	100-YR	378.96	378.55	0.40	0.24	0.00	344.99	523.26	57.42	92.07	1.13
Little Plumtree	5520	7-30-2016	379.31	378.89	0.42	0.24	0.00	404.92	576.10	69.03	97.02	1.19
Little Plumtree	5442	2-YR	375.27	375.05	0.22			6.55	175.62	7.83	42.74	0.49
Little Plumtree	5442	10-YR	376.69	376.38	0.31			54.78	317.52	30.69	67.34	0.70
Little Plumtree	5442	50-YR	378.12	377.75	0.38			176.50	495.10	69.40	91.17	0.92
Little Plumtree	5442	100-YR	378.71	378.31	0.40			257.74	577.56	90.37	98.84	1.01
Little Plumtree	5442	7-30-2016	379.07	378.65	0.42			315.86	629.72	104.48	102.75	1.06

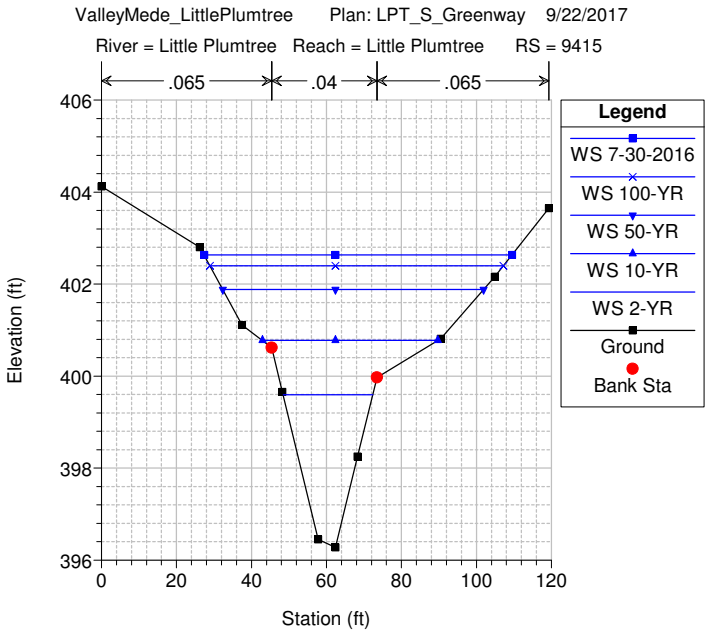
Appendix H-13

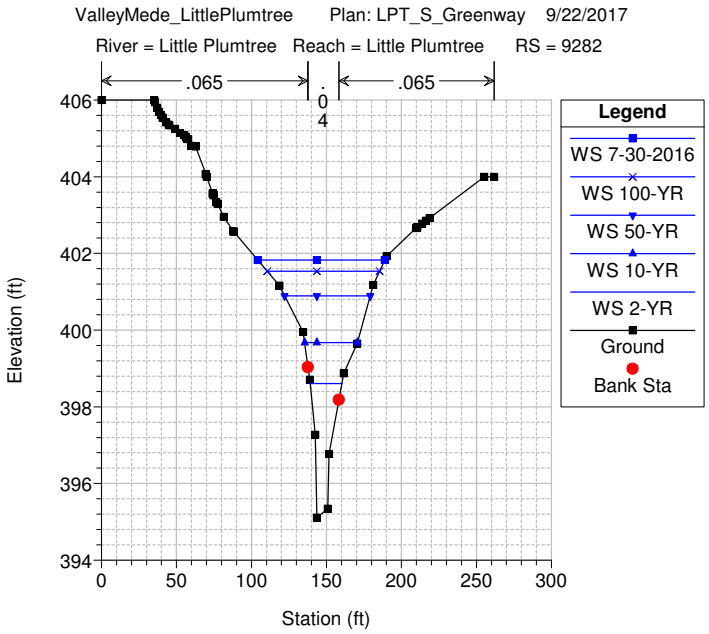
Little Plumtree Branch: Option S Hydraulic Modeling

ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017

Little Plumtree Little Plumtree




ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9415
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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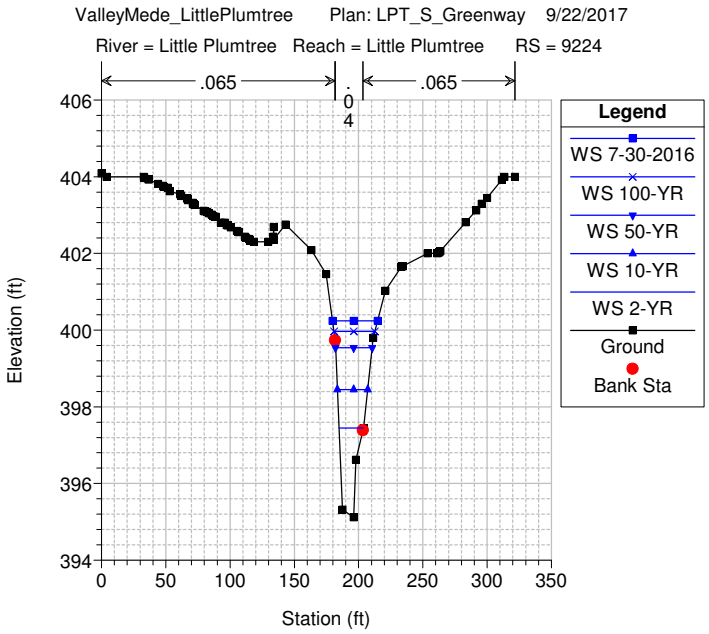
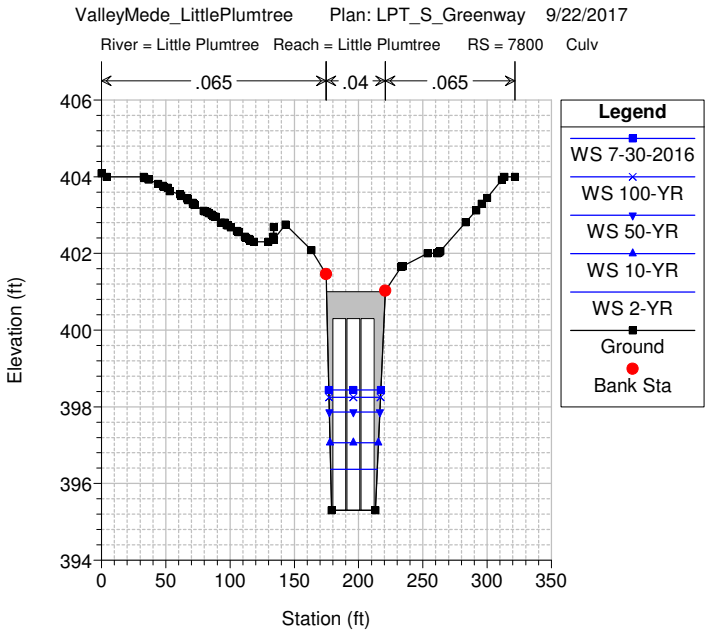
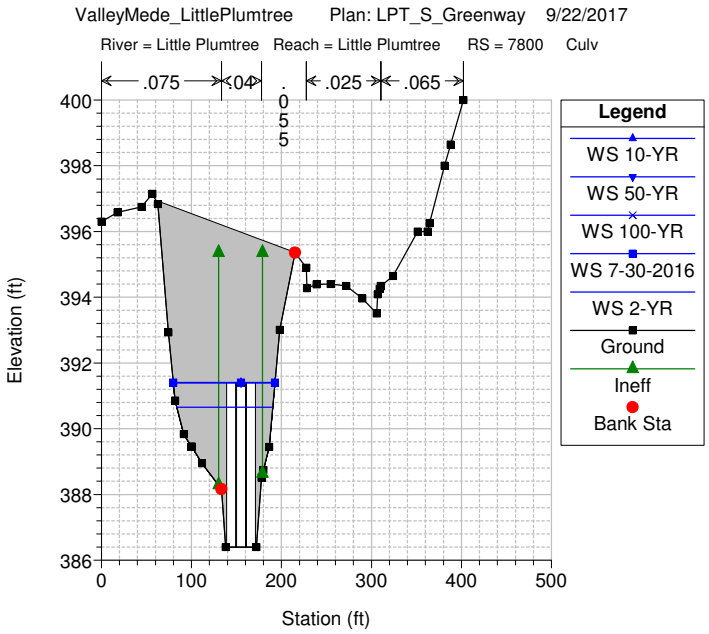
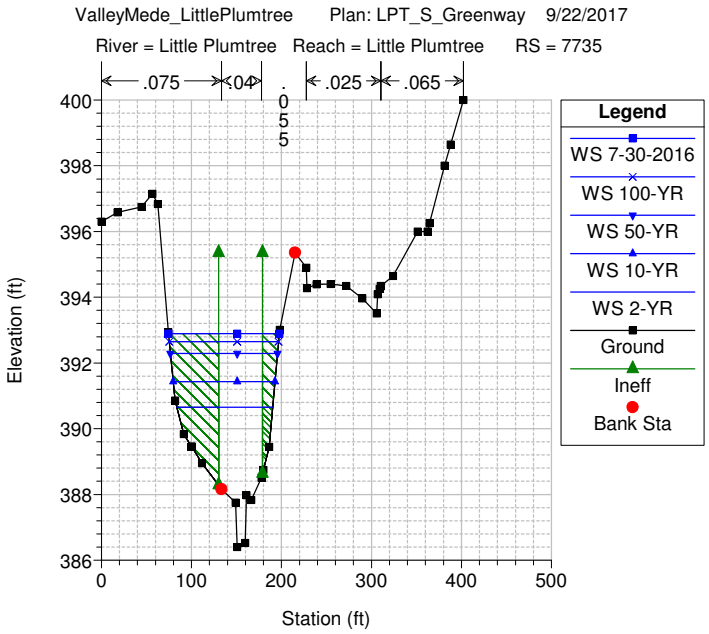
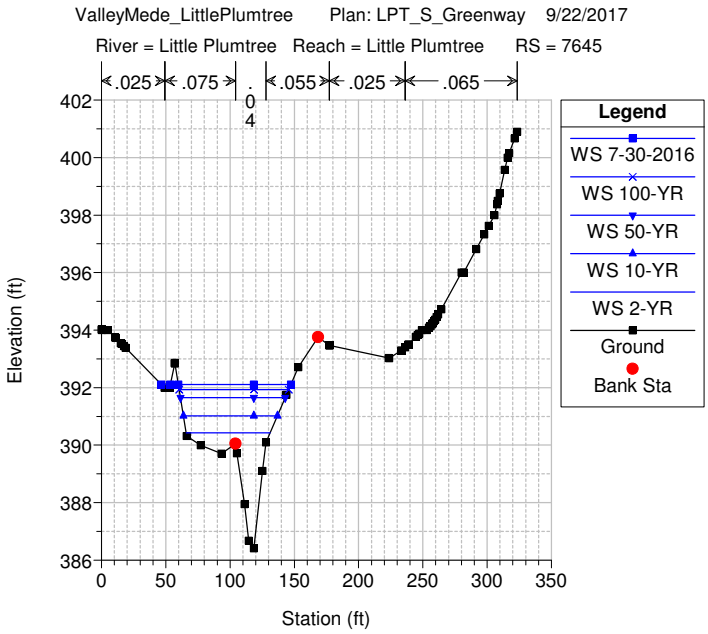
River = Little Plumtree Reach = Little Plumtree RS = 9282
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

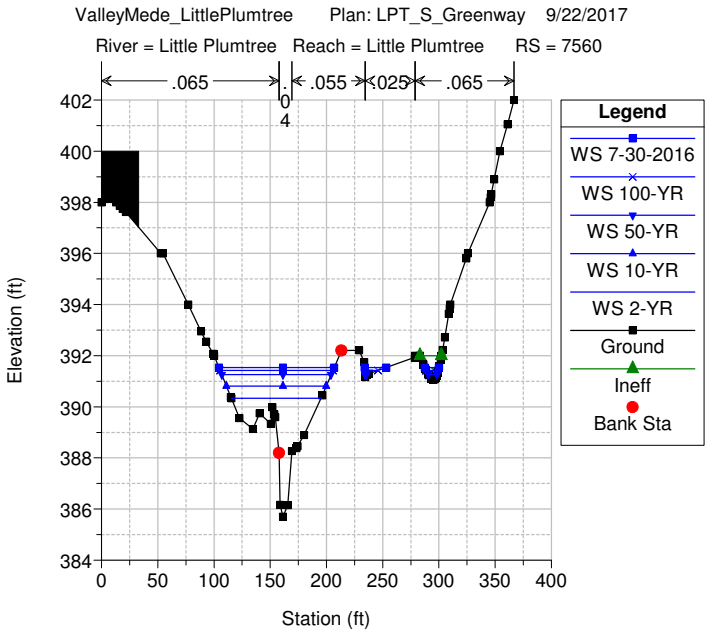

ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9224
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

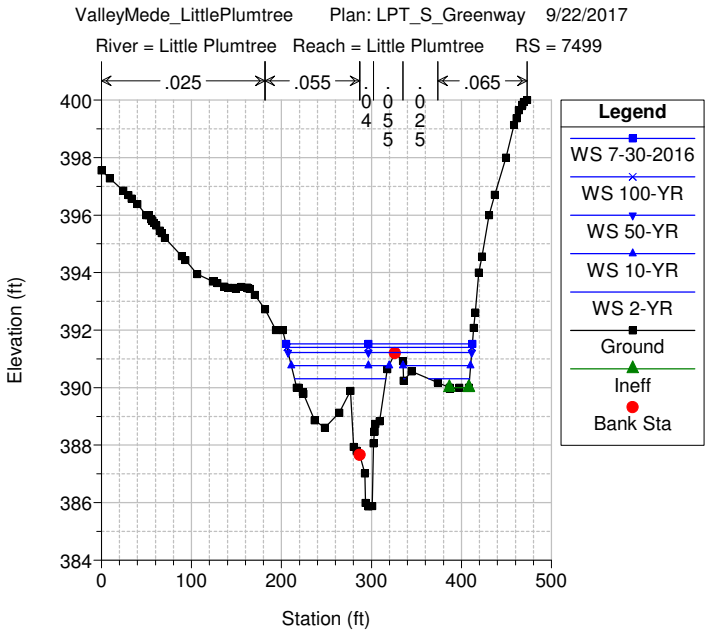

ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7800 Culv
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

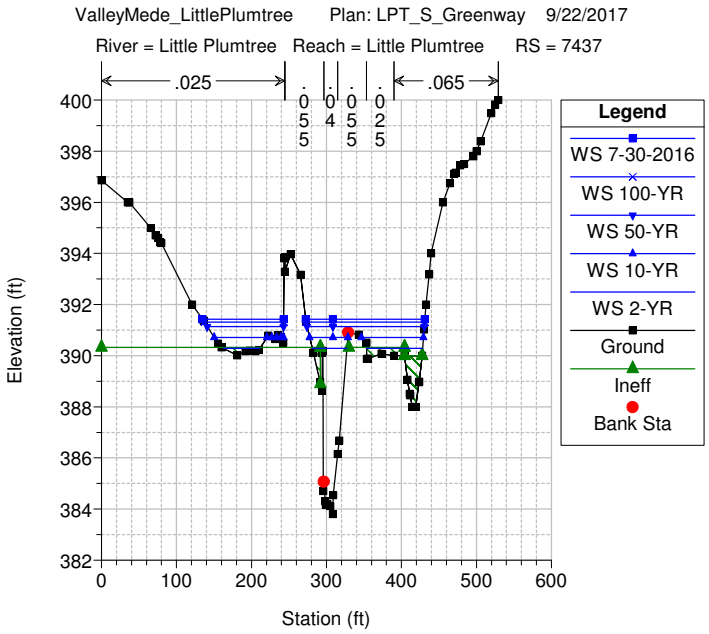

ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7800 Culv
.075
.04
.025
.065
Legend
WS 10-YR
WS 50-YR
WS 100-YR
WS 7-30-2016
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

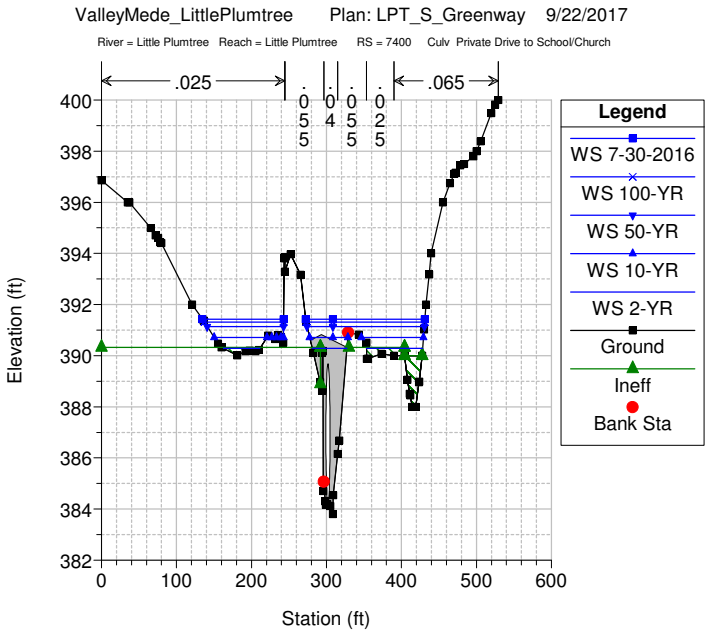

ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7735
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

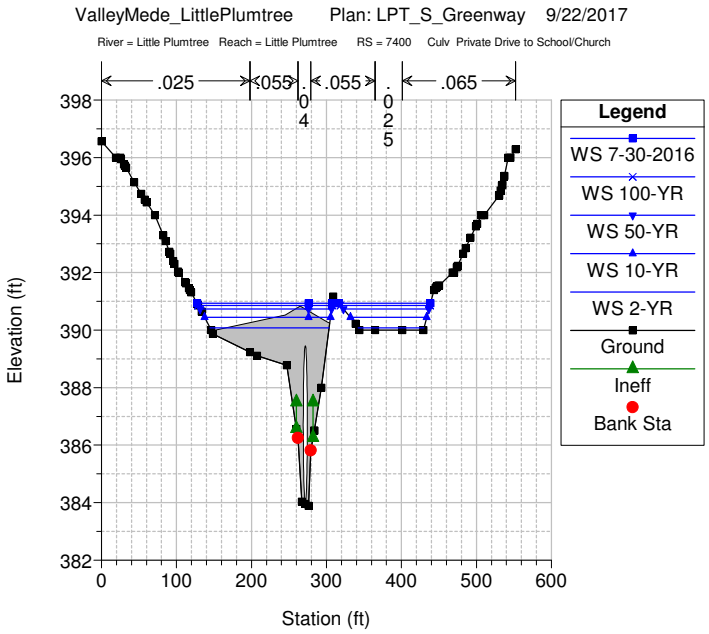

ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7645
.025 .075 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

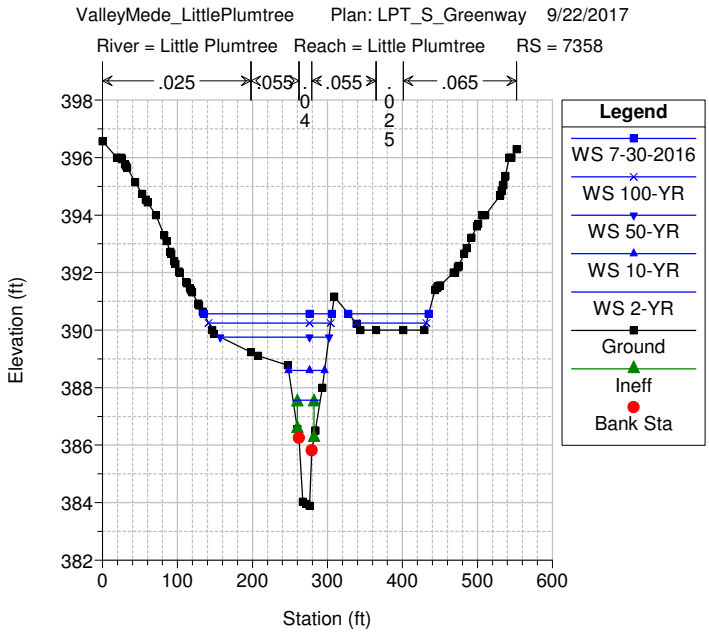

ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7560
.065 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

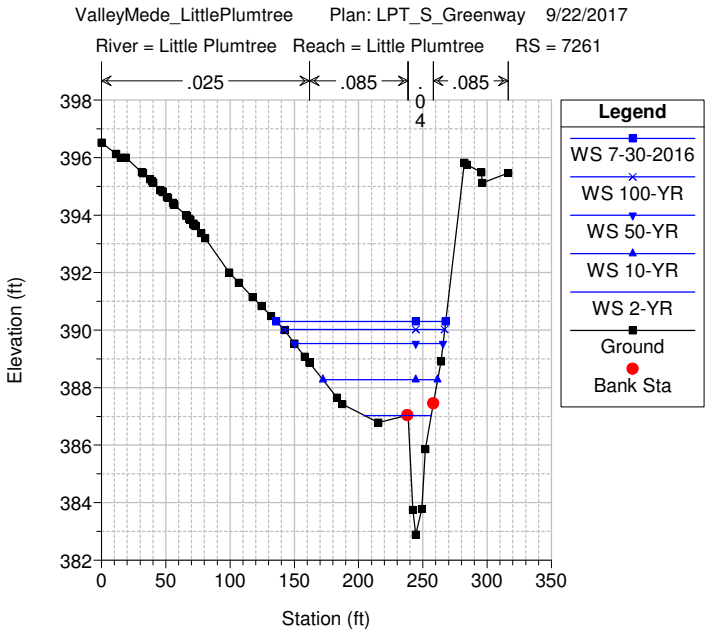

ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7499
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

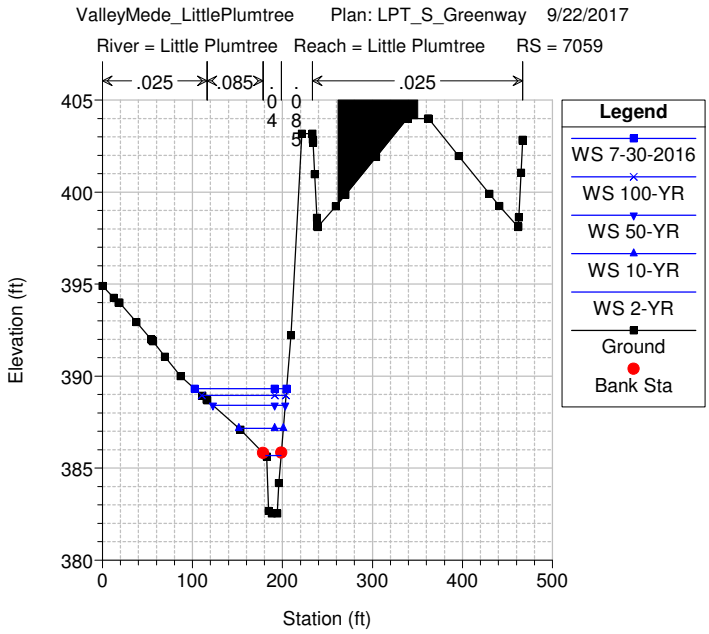

ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7437
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

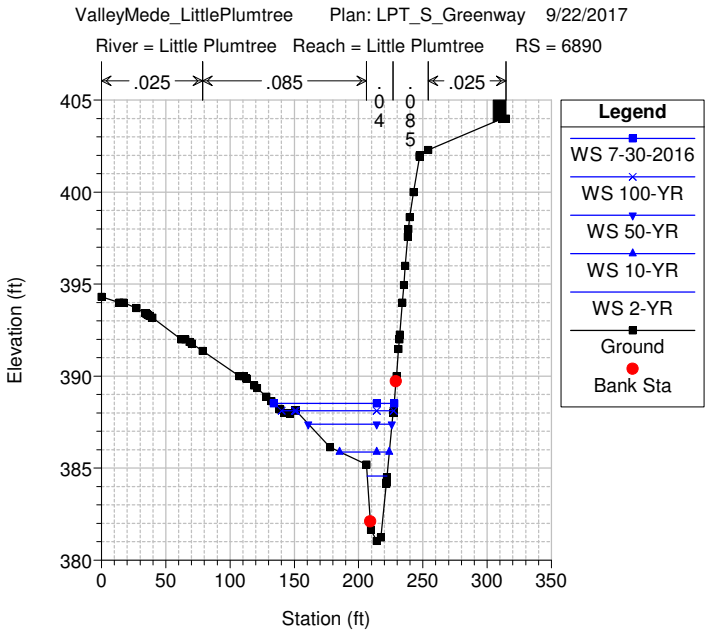

ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7400 Culv Private Drive to School/Church
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7400 Culv Private Drive to School/Church
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7358
.025
.055
.055
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7261
.025
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7059
.025
.085
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 6890
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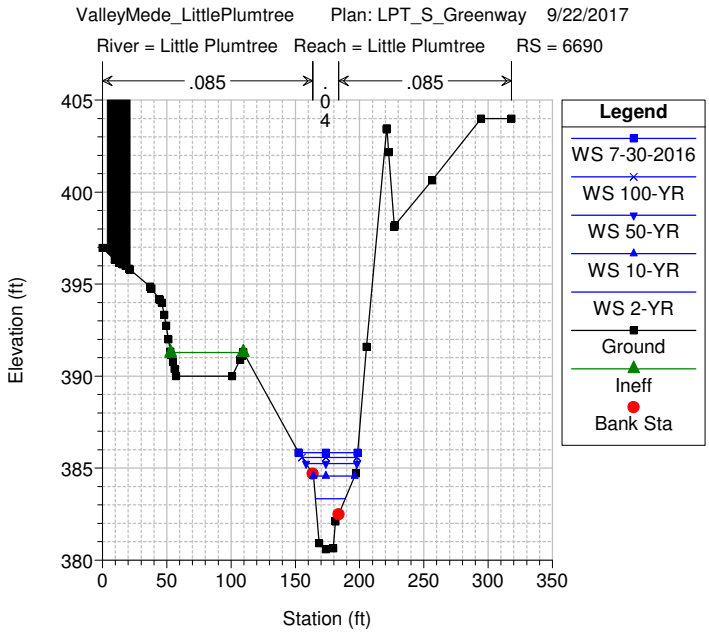
.085
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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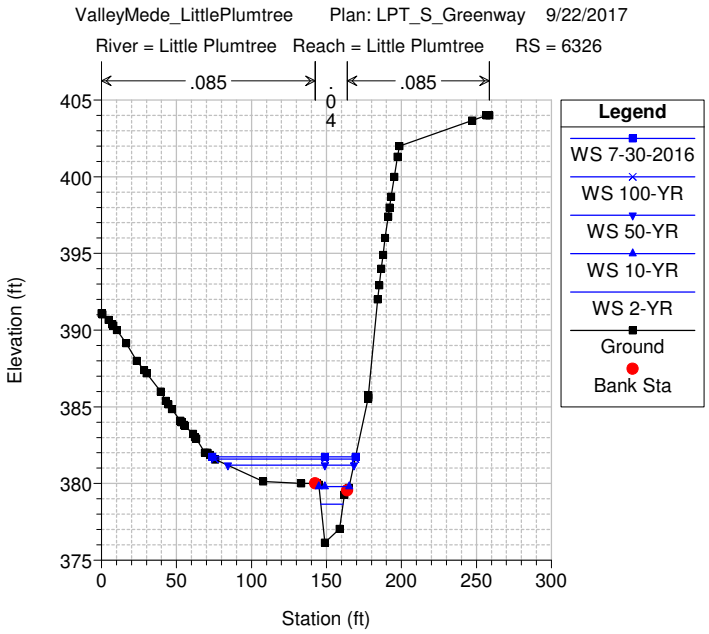
River = Little Plumtree Reach = Little Plumtree RS = 6690
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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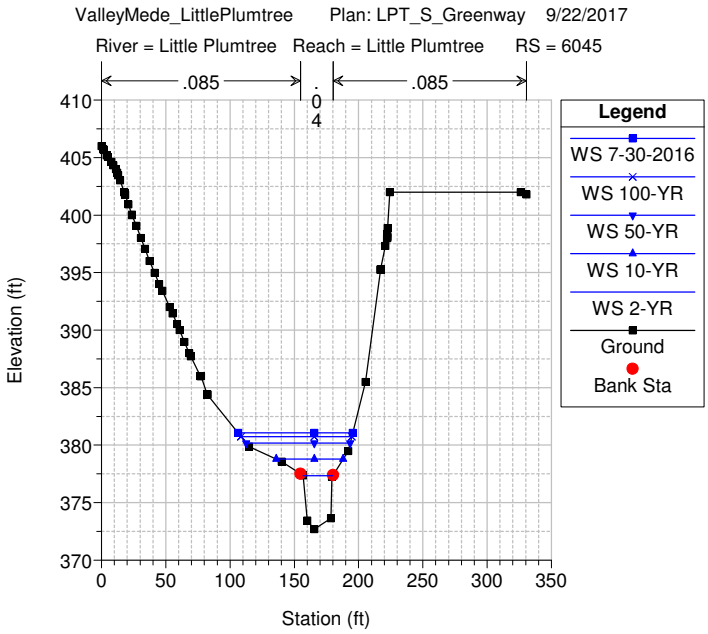
River = Little Plumtree Reach = Little Plumtree RS = 6326
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6045
.085
.04
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Legend
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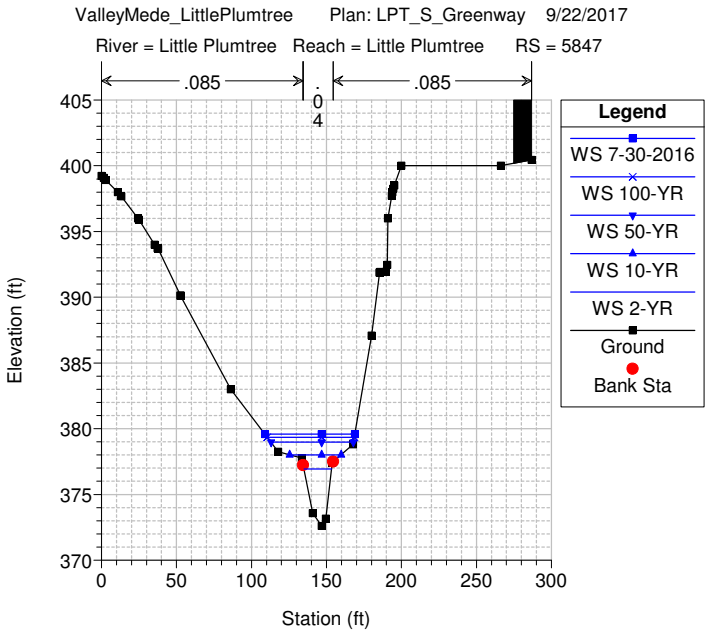
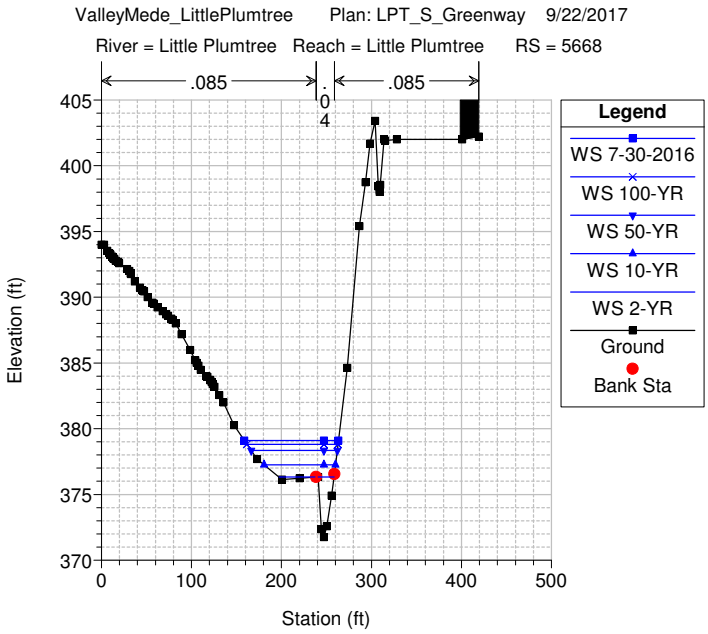
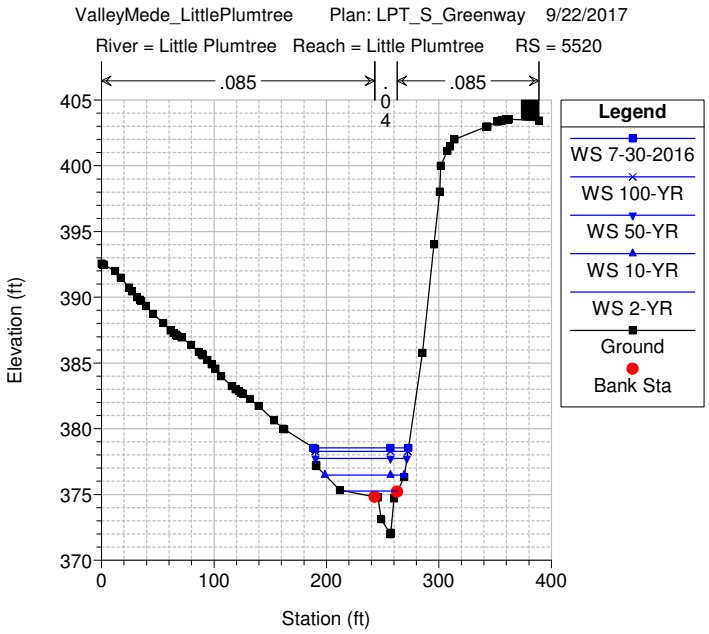
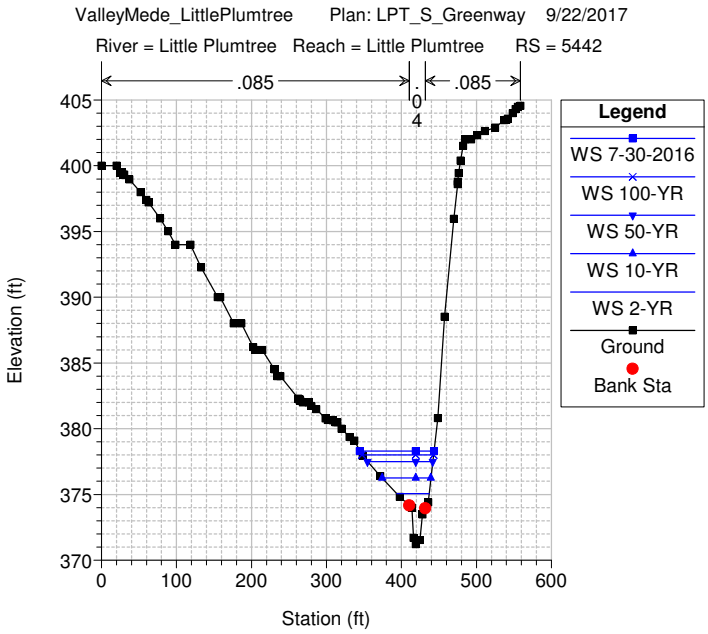
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5847
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5668
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_S_Greenway 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5520
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 5442
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
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PROJECT DATA
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Project File : ValleyMedeLittlePlumtree.prj
Run Date and Time: 9/22/2017 12:55:07 PM

Project in English units

PLAN DATA

Plan Title: LPT_S_Greenway
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.p03

Geometry Title: Little Plumtree_S_ChathamGrnwy
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g03

Flow Title : Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Plan Summary Information:
Number of: Cross Sections = 19 Multiple Openings = 0
Culverts = 2 Inline Structures = 0
Bridges = 0 Lateral Structures = 2

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Flow Data (cfs)

River	Reach	RS	2-YR	10-YR	50-YR	100-YR	7-30-2016
Little Plumtree	Little Plumtree	9415	189	397	698	862	945
Little Plumtree	Little Plumtree	7645	190	403	741	927	1058

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Little Plumtree	Little Plumtree	2-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	10-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	50-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	100-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	7-30-2016	Critical	Normal S = 0.00278

GEOMETRY DATA

Geometry Title: Little Plumtree_S_ChathamGrnwy
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g03

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9415

INPUT
Description:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.12	26.24	402.8	37.49	401.11	45.42	400.62	48.26	399.66
57.81	396.45	62.4	396.28	68.31	398.25	73.47	399.97	90.46	400.81
104.93	402.16	119.34	403.65						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	45.42	.04	73.47	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.42	73.47	133.08	132.78	133.29	.1 .3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9282

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	35.14	406	35.66	405.94	37.16	405.8	38.48	405.69
39.65	405.61	40.74	405.54	41.04	405.53	43.06	405.42	44.88	405.36
45.26	405.34	49.17	405.25	52.19	405.14	55.17	405.08	56.39	405.02
57.09	404.98	57.75	404.98	60.06	404.81	61.67	404.8	62.71	404.79
69.47	404.07	69.52	404.06	69.61	404.06	70.1	404	73.98	403.56
74.29	403.54	74.75	403.51	76.65	403.33	77.5	403.29	81.52	402.95
87.95	402.58	88.09	402.57	88.21	402.57	118.53	401.16	134.44	399.95
137.69	399.03	137.7	399.03	138.85	398.71	142.58	397.27	143.65	395.11
150.75	395.34	151.63	396.77	158.22	398.18	161.45	398.87	170.55	399.65
181.15	401.18	190.16	401.93	209.71	402.66	209.76	402.66	210.1	402.67
210.35	402.68	210.6	402.68	213.79	402.78	216.31	402.85	218.75	402.92
255.28	404	261.74	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	137.7	.04	158.22	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
137.7	158.22	61.4	57.86	54.02	.1 .3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9224

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.78	402.44
133.82	402.69	133.83	402.36	143.12	402.75	163.4	402.09	174.73	401.46
181.84	399.73	181.86	399.72	187.51	395.32	196.08	395.12	197.79	396.62
203.28	397.38	203.29	397.39	203.77	397.45	211.36	399.8	220.8	401.03
233.33	401.65	233.48	401.66	234.16	401.67	234.38	401.67	253.57	402
261.14	402	261.73	402.01	262.76	402.03	263.67	402.06	283.21	402.81
291.42	403.12	295.82	403.3	299.88	403.45	311.32	403.92	313.45	404
321.72	404								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	203.29	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
181.84	203.29	1437.81	1386.92 1507.68	.3	.5

CULVERT

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7800

INPUT
Description:
Distance from Upstream XS = 15
Deck/Roadway Width = 1200
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
170	401	260	401

Upstream Bridge Cross Section Data
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.78	402.44
133.82	402.69	133.83	402.36	143.12	402.75	163.4	402.09	174.73	401.46
179	395.3	213	395.3	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	174.73	.04	220.8	.065

Bank Sta: Left	Right	Coeff Contr.	Expan.
174.73	220.8	.3	.5

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
56	397	216	395.36

Downstream Bridge Cross Section Data
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.3	17.79	396.58	44.54	396.75	56.45	397.15	62.45	396.84
74.23	392.93	81.72	390.86	91.42	389.84	100.1	389.46	100.11	389.46
111.61	388.95	133.43	388.16	138	386.4	172	386.4	177.83	388.51
179.97	388.75	186.19	389.45	198.02	393.01	215.18	395.36	227.49	394.9
228.3	394.28	238.98	394.39	254.49	394.4	272.22	394.34	289.78	393.96

```
     306  393.51  306.75  394.09  309.11  394.26  310.38  394.33  310.44  394.34
  310.51  394.34  324.13  394.65  351.47     396  362.24     396  364.63  396.25
  381.06     398  387.94  398.65  402.16     400

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  133.43     .04  177.83    .055  227.49    .025  310.38    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        133.43  215.18             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     130  395.36       F
     179  402.16  395.36       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                10    1250     .013     .013        0                  .5                1
Number of Barrels =  3
Upstream   Elevation =  395.3
Centerline Stations
    Sta.    Sta.    Sta.
     185     196     207
Downstream Elevation =  386.4
Centerline Stations
    Sta.    Sta.    Sta.
     144     155     166

CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        189.00    Culv Full Len (ft)
  # Barrels                      3    Culv Vel US (ft/s)          5.87
  Q Barrel (cfs)             63.00    Culv Vel DS (ft/s)          1.48
  E.G. US. (ft)             396.96    Culv Inv El Up (ft)       395.30
  W.S. US. (ft)             397.45    Culv Inv El Dn (ft)       386.40
  E.G. DS (ft)              390.68    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              390.65    Culv Exit Loss (ft)         0.01
  Delta EG (ft)               6.29    Culv Entr Loss (ft)         0.06
  Delta WS (ft)               6.80    Q Weir (cfs)
  E.G. IC (ft)              396.96    Weir Sta Lft (ft)
  E.G. OC (ft)              397.18    Weir Sta Rgt (ft)
  Culvert Control            Inlet    Weir Submerg
  Culv WS Inlet (ft)        396.37    Weir Max Depth (ft)
  Culv WS Outlet (ft)       390.65    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         0.82    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         1.07    Min El Weir Flow (ft)     401.01


Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note:    During supercritical analysis, the culvert direct step method went to normal depth.  The
program then assumed
         normal depth at the outlet.
Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        397.00    Culv Full Len (ft)          5.41
  # Barrels                      3    Culv Vel US (ft/s)          7.52
  Q Barrel (cfs)            132.33    Culv Vel DS (ft/s)          2.65
  E.G. US. (ft)             398.07    Culv Inv El Up (ft)       395.30
  W.S. US. (ft)             398.45    Culv Inv El Dn (ft)       386.40
  E.G. DS (ft)              391.51    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              391.44    Culv Exit Loss (ft)         0.03
  Delta EG (ft)               6.56    Culv Entr Loss (ft)         0.14
  Delta WS (ft)               7.01    Q Weir (cfs)
```

E.G. IC (ft)	398.07	Weir Sta Lft (ft)	
E.G. OC (ft)	398.38	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	397.06	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.40	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.33	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.76	Min El Weir Flow (ft)	401.01

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	698.00	Culv Full Len (ft)	141.20
# Barrels	3	Culv Vel US (ft/s)	9.08
Q Barrel (cfs)	232.67	Culv Vel DS (ft/s)	4.65
E.G. US. (ft)	399.40	Culv Inv El Up (ft)	395.30
W.S. US. (ft)	399.54	Culv Inv El Dn (ft)	386.40
E.G. DS (ft)	392.44	Culv Frctn Ls (ft)	0.12
W.S. DS (ft)	392.29	Culv Exit Loss (ft)	0.18
Delta EG (ft)	6.95	Culv Entr Loss (ft)	0.25
Delta WS (ft)	7.25	Q Weir (cfs)	
E.G. IC (ft)	399.40	Weir Sta Lft (ft)	
E.G. OC (ft)	399.78	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	397.86	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.40	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.93	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.56	Min El Weir Flow (ft)	401.01

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	862.00	Culv Full Len (ft)	214.42
# Barrels	3	Culv Vel US (ft/s)	9.74
Q Barrel (cfs)	287.33	Culv Vel DS (ft/s)	5.75
E.G. US. (ft)	400.04	Culv Inv El Up (ft)	395.30
W.S. US. (ft)	399.96	Culv Inv El Dn (ft)	386.40
E.G. DS (ft)	392.86	Culv Frctn Ls (ft)	0.27
W.S. DS (ft)	392.65	Culv Exit Loss (ft)	0.31
Delta EG (ft)	7.18	Culv Entr Loss (ft)	0.32
Delta WS (ft)	7.31	Q Weir (cfs)	
E.G. IC (ft)	400.04	Weir Sta Lft (ft)	
E.G. OC (ft)	400.46	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	398.25	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.40	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.23	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.95	Min El Weir Flow (ft)	401.01

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	945.00	Culv Full Len (ft)	267.50
# Barrels	3	Culv Vel US (ft/s)	10.04
Q Barrel (cfs)	315.00	Culv Vel DS (ft/s)	6.30
E.G. US. (ft)	400.35	Culv Inv El Up (ft)	395.30
W.S. US. (ft)	400.25	Culv Inv El Dn (ft)	386.40
E.G. DS (ft)	393.12	Culv Frctn Ls (ft)	0.41
W.S. DS (ft)	392.89	Culv Exit Loss (ft)	0.39
Delta EG (ft)	7.24	Culv Entr Loss (ft)	0.35
Delta WS (ft)	7.35	Q Weir (cfs)	
E.G. IC (ft)	400.35	Weir Sta Lft (ft)	

E.G. OC (ft)	400.79	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	398.44	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.40	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.37	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.14	Min El Weir Flow (ft)	401.01

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed
normal depth at the outlet.
Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7735

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.3	17.79	396.58	44.54	396.75	56.45	397.15	62.45	396.84
74.23	392.93	81.72	390.86	91.42	389.84	100.1	389.46	100.11	389.46
111.61	388.95	133.43	388.16	148.98	387.75	150.92	386.4	159.56	386.53
161.02	387.98	166.33	387.83	177.83	388.51	179.97	388.75	186.19	389.45
198.02	393.01	215.18	395.36	227.49	394.9	228.3	394.28	238.98	394.39
254.49	394.4	272.22	394.34	289.78	393.96	306	393.51	306.75	394.09
309.11	394.26	310.38	394.33	310.44	394.34	310.51	394.34	324.13	394.65
351.47	396	362.24	396	364.63	396.25	381.06	398	387.94	398.65
402.16	400								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	133.43	.04	177.83	.055	227.49	.025	310.38	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
133.43	215.18	142.82	90.04	69.09	.3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	130	395.36	F
179	402.16	395.36	F

LATERAL STRUCTURE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7717

INPUT
Description: N Chatham Overflow
Lateral structure position = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width = 2
Weir Coefficient = 2
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-50	395.36	39.54	393.75	124.15	392.21	186.01	391.2	247	390.9

Weir crest shape = Broad Crested

LATERAL STRUCTURE OUTPUT Profile #2-YR Lateral Structure

E.G. US. (ft)	390.68	Weir Sta US (ft)	
W.S. US. (ft)	390.65	Weir Sta DS (ft)	
E.G. DS (ft)	390.32	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.29	Wr Top Wdth (ft)	
Q US (cfs)	189.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	190.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	

Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #10-YR Lateral Structure

E.G. US. (ft)	391.51	Weir Sta US (ft)	
W.S. US. (ft)	391.43	Weir Sta DS (ft)	
E.G. DS (ft)	390.78	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.72	Wr Top Wdth (ft)	
Q US (cfs)	397.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	403.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #50-YR Lateral Structure

E.G. US. (ft)	392.44	Weir Sta US (ft)	124.15
W.S. US. (ft)	392.28	Weir Sta DS (ft)	247.00
E.G. DS (ft)	391.23	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	391.14	Wr Top Wdth (ft)	62.23
Q US (cfs)	698.00	Weir Max Depth (ft)	0.24
Q Leaving Total (cfs)	6.25	Weir Avg Depth (ft)	0.13
Q DS (cfs)	734.77	Weir Flow Area (sq ft)	7.94
Perc Q Leaving	0.89	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	6.25	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Lateral Structure

E.G. US. (ft)	392.86	Weir Sta US (ft)	124.15
W.S. US. (ft)	392.65	Weir Sta DS (ft)	247.00
E.G. DS (ft)	391.42	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	391.31	Wr Top Wdth (ft)	73.43
Q US (cfs)	862.00	Weir Max Depth (ft)	0.41
Q Leaving Total (cfs)	21.68	Weir Avg Depth (ft)	0.27
Q DS (cfs)	905.48	Weir Flow Area (sq ft)	19.80
Perc Q Leaving	2.50	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	21.68	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	

Breach WD (ft)	
Breach Top El (ft)	
Breach Bottom El (ft)	
Breach SSL (ft)	
Breach SSR (ft)	

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Lateral Structure

E.G. US. (ft)	393.12	Weir Sta US (ft)	124.15
W.S. US. (ft)	392.89	Weir Sta DS (ft)	247.00
E.G. DS (ft)	391.55	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	391.43	Wr Top Wdth (ft)	80.88
Q US (cfs)	945.00	Weir Max Depth (ft)	0.53
Q Leaving Total (cfs)	37.06	Weir Avg Depth (ft)	0.36
Q DS (cfs)	1020.40	Weir Flow Area (sq ft)	29.16
Perc Q Leaving	3.98	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	37.06	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7645

INPUT
Description:
Station Elevation Data   num=   68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.02	.32	394	4.94	394	10.64	393.74	10.96	393.73
15.06	393.54	15.59	393.52	17.34	393.44	18.71	393.39	49.02	392
49.35	392	52.97	392	57.03	392.84	57.05	392.84	57.1	392.86
66.29	390.32	77.21	389.99	93.33	389.71	104.18	390.05	105.31	389.72
111.39	387.95	114.49	386.68	118.37	386.41	125.33	389.1	127.91	390.1
143.93	391.75	153.06	392.71	168.44	393.75	177.22	393.47	177.5	393.47
223.31	393.03	223.82	393.02	233.1	393.29	233.46	393.29	236.26	393.4
238.69	393.5	238.95	393.5	244.54	393.77	244.67	393.77	245.96	393.83
247.21	393.88	249.08	394	253.16	394	254.69	394.09	255.85	394.13
255.98	394.14	257.17	394.2	257.4	394.22	257.65	394.24	258.72	394.31
259.55	394.37	260.71	394.46	261.77	394.54	264.41	394.72	280.17	396
281.83	396	291.62	396.82	297.74	397.33	301.31	397.63	305.66	398
307.68	398.37	308.27	398.49	309.55	398.75	313.77	399.57	315.97	400
317.17	400.15	321.34	400.67	323.25	400.9				

Manning's n Values   num=   6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	49.35	.075	104.18	.04	127.91	.055	177.22	.025
236.26	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.18	168.44	85.44	84.61	84.17	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7560

INPUT
Description:
Station Elevation Data   num=   76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398	13.16	398	16.3	397.86	18.69	397.75	21.57	397.62
52.62	396	54.72	396	77.17	394	88.58	392.95	92.96	392.55
99.27	392.07	99.47	392.05	100.16	392	114.95	390.39	115.47	390.33
122.74	389.56	134.6	389.13	140.5	389.75	150.4	389.33	151.86	389.98

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  153.73  389.71  154.61  389.59   157.9  388.19  158.89  386.17  161.21   385.7
  165.61  386.15   169.3  388.27  173.13  388.38  174.07  388.45  174.09  388.45
  180.17   388.9  196.18  390.45  213.33   392.2   229.1  392.21  233.65  391.75
   234.4  391.16  235.56  391.26  235.78  391.26  237.87   391.3  278.66  391.93
  278.71  391.92  279.16  391.98  279.36     392  282.97     392  285.84  391.69
  286.14  391.65  288.03  391.47  288.42  391.42  290.38  391.27  290.86  391.23
  293.03   391.1  293.77  391.08  295.03  391.06  295.75  391.07  296.26   391.1
     297  391.13  297.79  391.21  298.72  391.34  299.12  391.38  300.22  391.58
  301.48  391.83  302.25     392  303.24  392.23  305.23  392.71  308.78  393.64
  309.52  393.84  310.08     394  324.25  395.81   325.8     396  345.06     398
  345.97   398.2   346.5  398.32   349.1   398.9   354.1     400  361.13  401.05
  366.82     402

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   157.9     .04   169.3    .055   234.4    .025  278.71    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         157.9  213.33           62.59   61.86   60.62             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  282.96  302.26     392       T
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
       0    32.9     400

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7499

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  397.55    9.17  397.27   24.09  396.85   29.99   396.7   33.44  396.57
   39.96  396.38   49.86     396   52.49     396   55.42  395.85   56.63  395.81
    58.3  395.73   60.74  395.64   64.59  395.46    66.9  395.37   70.43   395.2
   89.36  394.57   93.12  394.44  106.41  393.95  123.58  393.69  124.46   393.7
  128.86  393.64  136.64  393.51  140.68  393.47  147.39  393.47  148.97  393.45
  155.58   393.5  161.68  393.48  162.44  393.46  164.58  393.44  170.22  393.22
  181.89  392.72  193.67     392  201.39     392  217.03     390  218.99     390
  223.72  389.84  224.47  389.79   236.8  388.86  248.34  388.61  264.24  389.13
  276.64  389.89  280.11  387.94  283.32  387.81     287  387.66  292.53  387.02
   293.3  385.99  296.46  385.87   300.8  385.88  302.11  388.06  303.42  388.47
  303.43  388.47  304.28  388.74  309.18  388.83   317.6  390.64  326.22   391.2
  334.94  390.92  335.64  390.24  344.52  390.57  373.6390.1774  386.74     390
  386.94  389.96  397.68     390  408.08     390  413.69  392.08  415.28  392.61
  419.37     394  422.85  394.56  430.78     396  436.98  396.71  449.57     398
  458.27  399.13   461.4  399.37  463.76  399.64  467.25  399.79  467.61  399.83
  469.29  399.93  472.83     400

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  181.89    .055     287     .04  302.11    .055  334.94    .025
   373.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          287  326.22           62.52   61.98   61.21             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  386.59  408.08     390       T

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7437

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  396.86    34.9     396    37.3     396   65.79  394.99   72.05   394.7
   75.42  394.61   78.52  394.43   79.74  394.41  120.94     392  136.04  391.37
  155.34  390.47  159.88  390.33  181.12  390.01  191.93  390.17  197.52   390.2
  205.41  390.17  210.12  390.23  222.25  390.79   231.8  390.65  235.24   390.8
   239.5  390.72   242.6  390.51   243.7  393.81  244.38  393.85  244.52  393.29
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   252.3  393.97  265.38  393.16  272.52  391.32  282.48  390.12  291.46  388.97
  291.48  388.96  293.97  388.64  294.25  390.13  295.27  390.19  295.61  384.71
  296.77  385.07   298.3   384.3  298.98  384.16  301.25  384.19  305.22  384.12
  308.47   383.8  309.04  384.54  315.03  386.16  316.94  386.68   328.9   390.9
  343.15  390.83  353.17  390.51  353.89  389.87  355.55  389.89  373.23  390.07
  390.11     390  403.96     390  407.91  389.06  411.03  388.51  411.66  388.45
  414.31     388  418.89     388   423.5  388.96  423.78  388.99  427.54     390
  430.04  391.02  432.84     392  437.06  393.18  439.65     394   455.4     396
  464.83  396.74  470.72  397.12  472.23  397.16   478.3  397.45  483.36   397.5
  496.04   397.8   500.1     398  505.53  398.38  519.88  399.49  524.94  399.82
     529     400

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  244.52    .055  296.77     .04  315.03    .055  353.17    .025
  390.11    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        296.77   328.9            78.48   78.48   79.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0     292  390.32       F
     330  403.94  390.32       F
  403.94  427.58     390       T

CULVERT


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7400

INPUT
Description: Private Drive to School/Church
Distance from Upstream XS =      19
Deck/Roadway Width        =    26.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       3
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     273 390.523           293.3  390.83           330.1 390.275

Upstream Bridge Cross Section Data
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  396.86    34.9     396    37.3     396   65.79  394.99   72.05   394.7
   75.42  394.61   78.52  394.43   79.74  394.41  120.94     392  136.04  391.37
  155.34  390.47  159.88  390.33  181.12  390.01  191.93  390.17  197.52   390.2
  205.41  390.17  210.12  390.23  222.25  390.79   231.8  390.65  235.24   390.8
   239.5  390.72   242.6  390.51   243.7  393.81  244.38  393.85  244.52  393.29
   252.3  393.97  265.38  393.16  272.52  391.32  282.48  390.12  291.46  388.97
  291.48  388.96  293.97  388.64  294.25  390.13  295.27  390.19  295.61  384.71
  296.77  385.07   298.3   384.3  298.98  384.16  301.25  384.19  305.22  384.12
  308.47   383.8  309.04  384.54  315.03  386.16  316.94  386.68   328.9   390.9
  343.15  390.83  353.17  390.51  353.89  389.87  355.55  389.89  373.23  390.07
  390.11     390  403.96     390  407.91  389.06  411.03  388.51  411.66  388.45
  414.31     388  418.89     388   423.5  388.96  423.78  388.99  427.54     390
  430.04  391.02  432.84     392  437.06  393.18  439.65     394   455.4     396
  464.83  396.74  470.72  397.12  472.23  397.16   478.3  397.45  483.36   397.5
  496.04   397.8   500.1     398  505.53  398.38  519.88  399.49  524.94  399.82
     529     400

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  244.52    .055  296.77     .04  315.03    .055  353.17    .025
  390.11    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        296.77   328.9             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0     292  390.32       F
     330  403.94  390.32       F
  403.94  427.58     390       T

Downstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  148.65  389.87           151.8     390           244.9 390.523
   264.8  390.83           301.1 390.275             322   390.1
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Downstream Bridge Cross Section Data
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.57	19.18	396	25.02	396	26.23	395.94	29.88	395.76
31.08	395.72	32.73	395.65	43.33	395.14	53.01	394.74	57.42	394.54
60	394.44	71.11	394	82.39	393.29	85.33	393.09	90.62	392.73
91.6	392.66	95.73	392.4	97.19	392.3	101.89	392.04	102.02	392.03
102.64	392	111.71	391.66	112.52	391.62	116.39	391.46	117.91	391.39
119.63	391.31	127.79	390.92	128.88	390.86	133.39	390.64	146.33	390
148.65	389.87	197.8	389.235	207.48	389.11	247.02	388.78	260.06	386.56
261.83	386.25	267	384.04	271.78	383.96	276.29	383.89	279.1	385.82
283.58	386.51	283.6	386.51	293.28	388	308.92	391.17	338.91	390.22
343.99	390	364.77	390	401.13	390	429.27	390	443.29	391.39
445.37	391.46	446.23	391.48	446.91	391.51	447.8	391.52	448.1	391.53
449	391.53	449.3	391.55	450.2	391.55	468.04	392	470.36	392
473.67	392.18	474.82	392.24	482.25	392.66	485.63	392.85	492.04	393.22
499.3	393.61	500.79	393.69	506.62	394	510.56	394	529.82	394.67
530.59	394.68	532.27	394.85	533.97	395.03	534.59	395.05	536.96	395.34
537.45	395.36	542.27	396	545.21	396	552.15	396.29		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	197.8	.055	261.83	.04	279.1	.055	364.77	.025
401.13	.065								

Bank Sta: Left Right Coeff Contr. Expan.
261.83 279.1 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	260	387.5	F
282	552.15	387.5	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Circular	5.5	

FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	5.5	55.2	.013	.013	0	.5	1

Upstream Elevation = 384.18
Centerline Station = 302
Downstream Elevation = 383.96
Centerline Station = 271.8

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	175.69	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.97
Q Barrel (cfs)	175.69	Culv Vel DS (ft/s)	10.31
E.G. US. (ft)	390.32	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	390.29	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	387.72	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	387.56	Culv Exit Loss (ft)	1.60
Delta EG (ft)	2.60	Culv Entr Loss (ft)	0.77
Delta WS (ft)	2.73	Q Weir (cfs)	11.20
E.G. IC (ft)	390.24	Weir Sta Lft (ft)	327.16
E.G. OC (ft)	390.32	Weir Sta Rgt (ft)	428.32
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	388.00	Weir Max Depth (ft)	0.32
Culv WS Outlet (ft)	387.67	Weir Avg Depth (ft)	0.31
Culv Nml Depth (ft)	3.82	Weir Flow Area (sq ft)	7.66
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	196.87	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.34

Q Barrel (cfs)	196.87	Culv Vel DS (ft/s)	9.21
E.G. US. (ft)	390.78	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	390.72	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	388.89	Culv Frctn Ls (ft)	0.80
W.S. DS (ft)	388.60	Culv Exit Loss (ft)	1.03
Delta EG (ft)	1.89	Culv Entr Loss (ft)	0.68
Delta WS (ft)	2.12	Q Weir (cfs)	206.13
E.G. IC (ft)	390.77	Weir Sta Lft (ft)	149.21
E.G. OC (ft)	390.78	Weir Sta Rgt (ft)	429.39
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	388.74	Weir Max Depth (ft)	0.89
Culv WS Outlet (ft)	388.60	Weir Avg Depth (ft)	0.48
Culv Nml Depth (ft)	4.19	Weir Flow Area (sq ft)	101.54
Culv Crt Depth (ft)	3.93	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	178.91	Culv Full Len (ft)	55.20
# Barrels	1	Culv Vel US (ft/s)	7.53
Q Barrel (cfs)	178.91	Culv Vel DS (ft/s)	7.53
E.G. US. (ft)	391.24	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	391.14	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	390.11	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	389.76	Culv Exit Loss (ft)	0.53
Delta EG (ft)	1.13	Culv Entr Loss (ft)	0.44
Delta WS (ft)	1.38	Q Weir (cfs)	555.86
E.G. IC (ft)	391.19	Weir Sta Lft (ft)	139.02
E.G. OC (ft)	391.24	Weir Sta Rgt (ft)	430.64
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	389.68	Weir Max Depth (ft)	1.36
Culv WS Outlet (ft)	389.46	Weir Avg Depth (ft)	0.84
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	219.82
Culv Crt Depth (ft)	3.74	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	159.40	Culv Full Len (ft)	55.20
# Barrels	1	Culv Vel US (ft/s)	6.71
Q Barrel (cfs)	159.40	Culv Vel DS (ft/s)	6.71
E.G. US. (ft)	391.42	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	391.31	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	390.51	Culv Frctn Ls (ft)	0.12
W.S. DS (ft)	390.24	Culv Exit Loss (ft)	0.43
Delta EG (ft)	0.91	Culv Entr Loss (ft)	0.35
Delta WS (ft)	1.07	Q Weir (cfs)	746.07
E.G. IC (ft)	391.37	Weir Sta Lft (ft)	134.66
E.G. OC (ft)	391.42	Weir Sta Rgt (ft)	431.20
Culvert Control	Outlet	Weir Submerg	0.09
Culv WS Inlet (ft)	389.68	Weir Max Depth (ft)	1.56
Culv WS Outlet (ft)	389.46	Weir Avg Depth (ft)	1.02
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	271.77
Culv Crt Depth (ft)	3.53	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	145.36	Culv Full Len (ft)	55.20
# Barrels	1	Culv Vel US (ft/s)	6.12
Q Barrel (cfs)	145.36	Culv Vel DS (ft/s)	6.12
E.G. US. (ft)	391.54	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	391.43	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	390.77	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	390.57	Culv Exit Loss (ft)	0.38
Delta EG (ft)	0.78	Culv Entr Loss (ft)	0.29
Delta WS (ft)	0.86	Q Weir (cfs)	875.03
E.G. IC (ft)	391.48	Weir Sta Lft (ft)	131.76
E.G. OC (ft)	391.54	Weir Sta Rgt (ft)	431.55
Culvert Control	Outlet	Weir Submerg	0.24
Culv WS Inlet (ft)	389.68	Weir Max Depth (ft)	1.68
Culv WS Outlet (ft)	389.46	Weir Avg Depth (ft)	1.12
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	304.36
Culv Crt Depth (ft)	3.36	Min El Weir Flow (ft)	390.01

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7358

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.57	19.18	396	25.02	396	26.23	395.94	29.88	395.76
31.08	395.72	32.73	395.65	43.33	395.14	53.01	394.74	57.42	394.54
60	394.44	71.11	394	82.39	393.29	85.33	393.09	90.62	392.73
91.6	392.66	95.73	392.4	97.19	392.3	101.89	392.04	102.02	392.03
102.64	392	111.71	391.66	112.52	391.62	116.39	391.46	117.91	391.39
119.63	391.31	127.79	390.92	128.88	390.86	133.39	390.64	146.33	390
148.65	389.87	197.8	389.235	207.48	389.11	247.02	388.78	260.06	386.56
261.83	386.25	267	384.04	271.78	383.96	276.29	383.89	279.1	385.82
283.58	386.51	283.6	386.51	293.28	388	308.92	391.17	338.91	390.22
343.99	390	364.77	390	401.13	390	429.27	390	443.29	391.39
445.37	391.46	446.23	391.48	446.91	391.51	447.8	391.52	448.1	391.53
449	391.53	449.3	391.55	450.2	391.55	468.04	392	470.36	392
473.67	392.18	474.82	392.24	482.25	392.66	485.63	392.85	492.04	393.22
499.3	393.61	500.79	393.69	506.62	394	510.56	394	529.82	394.67
530.59	394.68	532.27	394.85	533.97	395.03	534.59	395.05	536.96	395.34
537.45	395.36	542.27	396	545.21	396	552.15	396.29		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	197.8	.055	261.83	.04	279.1	.055	364.77	.025
401.13	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
261.83	279.1	88.04	96.77	105.03	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	260	387.5	F
282	552.15	387.5	F

LATERAL STRUCTURE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7340

INPUT
Description:
Lateral structure position = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width = 2
Weir Coefficient = 2
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 2

Sta	Elev	Sta	Elev
0	391.17	35	390

Weir crest shape = Broad Crested

LATERAL STRUCTURE OUTPUT Profile #2-YR Lateral Structure

E.G. US. (ft)	387.71	Weir Sta US (ft)	
W.S. US. (ft)	387.56	Weir Sta DS (ft)	
E.G. DS (ft)	387.59	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	387.37	Wr Top Wdth (ft)	
Q US (cfs)	190.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	190.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #10-YR Lateral Structure

E.G. US. (ft)	388.89	Weir Sta US (ft)	
W.S. US. (ft)	388.60	Weir Sta DS (ft)	
E.G. DS (ft)	388.78	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	388.48	Wr Top Wdth (ft)	
Q US (cfs)	403.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	403.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #50-YR Lateral Structure

E.G. US. (ft)	390.11	Weir Sta US (ft)	
W.S. US. (ft)	389.76	Weir Sta DS (ft)	
E.G. DS (ft)	390.00	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	389.68	Wr Top Wdth (ft)	
Q US (cfs)	734.77	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	734.77	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Lateral Structure

E.G. US. (ft)	390.51	Weir Sta US (ft)	0.00
W.S. US. (ft)	390.24	Weir Sta DS (ft)	35.00
E.G. DS (ft)	390.43	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	390.16	Wr Top Wdth (ft)	5.20
Q US (cfs)	905.48	Weir Max Depth (ft)	0.16
Q Leaving Total (cfs)	0.27	Weir Avg Depth (ft)	0.08
Q DS (cfs)	905.21	Weir Flow Area (sq ft)	0.42
Perc Q Leaving	0.03	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	0.27	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Lateral Structure

E.G. US. (ft)	390.77	Weir Sta US (ft)	0.00
W.S. US. (ft)	390.57	Weir Sta DS (ft)	35.00
E.G. DS (ft)	390.69	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	390.47	Wr Top Wdth (ft)	15.31
Q US (cfs)	1020.40	Weir Max Depth (ft)	0.47
Q Leaving Total (cfs)	3.95	Weir Avg Depth (ft)	0.23
Q DS (cfs)	1016.43	Weir Flow Area (sq ft)	3.60
Perc Q Leaving	0.39	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	3.95	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7261

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.52	11.16	396.13	11.49	396.12	14.84	396	19.03	396
31.29	395.48	32.33	395.45	37.78	395.24	39.36	395.17	40.43	395.13
45.64	394.87	46.72	394.83	47.74	394.79	50.86	394.63	51.69	394.6
55.43	394.43	56.02	394.4	56.87	394.35	65.64	394	66.27	393.97
66.34	393.97	68.25	393.87	69.12	393.83	71.37	393.71	72.13	393.67
73.08	393.62	77.56	393.37	80.58	393.19	99.36	392	106.9	391.65
117.58	391.15	124.47	390.84	131.93	390.49	142.34	390	150.21	389.53
158.04	389.08	161.74	388.88	161.88	388.87	183.31	387.65	187.17	387.43
187.23	387.43	215.39	386.78	238.03	387.04	238.44	387.05	242.11	383.75
244.57	382.89	249.17	383.78	251.81	385.86	258.14	387.45	258.15	387.45
264	388.91	282.39	395.82	284.39	395.75	295.46	395.49	296.12	395.12
316.31	395.46								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	161.88	.085	238.44	.04	258.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
238.03	258.14	198.31	202.16	205.99	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7059

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.9	12.54	394.26	17.77	394	18.74	394	37.67	392.94
54.23	392	55.28	391.94	56.04	391.89	69.43	391.06	86.78	390
111.05	388.93	115.58	388.73	116.27	388.69	116.33	388.69	153.2	387.09
178.63	385.82	182.48	385.63	184.66	382.67	188.14	382.53	194.24	382.53
195.94	384.19	198.69	385.84	198.71	385.85	209.3	392.23	221.62	403.18
233.11	403.18	233.78	402.85	233.83	402.8	233.95	402.69	235.78	400.96
238.24	398.6	238.69	398.13	238.8	398.1	259.23	399.22	269.98	399.86
304.11	401.9	338.52	403.99	339.19	404	361.6	404	362.26	403.99
395.85	401.95	430.12	399.9	441.04	399.25	461.98	398.1	462.09	398.13
462.56	398.62	465.1	401.05	466.95	402.8	467	402.85		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	116.27	.085	178.63	.04	198.71	.085	233.11	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.

```
       178.63  198.71           168.76  169.64  170.29            .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   261.9  350.39     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 6890

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   394.3   13.98     394   17.28     394   26.86   393.7   27.04   393.7
   34.09  393.42   34.57   393.4   35.15  393.38   35.72  393.35   36.46  393.31
   37.31  393.27   39.62  393.17      62     392   65.29     392   68.45  391.85
   70.12  391.77   78.63  391.37  107.33     390  110.47     390  112.55  389.88
  113.04  389.85  118.83  389.49     121  389.35  128.16  388.89   132.1  388.64
  138.52  388.23  139.26  388.18  142.14     388  145.56     388  146.59  387.94
   150.7  388.13  150.95  388.14  151.02  388.14  177.71  386.13  206.04  385.19
  209.04   382.1  209.48  381.65  214.16  381.04  217.26  381.23  221.62  384.16
  221.67   384.2  221.74  384.25  221.98  384.45  222.05   384.5  226.69     388
   227.2     388  227.34  388.12  229.12  389.72  229.13  389.74  229.43     390
  231.07  391.47  231.68     392  231.99  392.26  234.01     394  235.13  394.96
  236.34     396  238.21  397.58  238.76     398  239.84  398.64  242.65     400
   247.4  401.93  247.54     402  254.08  402.28  311.77     404  314.64     404

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025   78.63    .085  206.04     .04  226.69    .085  254.08    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        209.04  229.12           197.24  199.49  199.59            .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   304.6  314.64     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 6690

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  396.97    9.56  396.32   13.05  396.18   13.29  396.17   15.54  396.08
   15.66  396.08    17.8     396   20.68  395.84   21.02  395.81   21.49  395.78
   37.06  394.87   38.21  394.76   44.14  394.19   44.63  394.15   46.04     394
      48  393.33   49.54  392.75   51.16     392   52.72  391.33   53.29  391.15
   54.75  390.76   56.06  390.39    57.3     390  100.92     390  106.99   390.9
   108.3  391.09  109.27  391.28  109.32  391.29  109.37  391.29  109.38   391.3
  109.43   391.3  152.71  385.84  163.54   384.7  163.98  384.66  168.46  380.92
  173.86  380.59  179.48  380.65   181.3   382.1  183.67  382.49  197.16  384.73
  205.42  391.59  221.07  403.46  221.13   403.4  221.23  403.46   222.6  402.16
  227.03  398.11  227.29  398.19  256.47  400.63  294.59     404  318.16     404

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  163.54     .04  183.67    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        163.54  183.67           377.18  363.89  351.23            .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
   53.01  109.48  391.28       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     3.8    21.3     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 6326
```

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	391.11	.71	391.03	4.68	390.67	7.01	390.38	7.97	390.29
10.18	390	16.44	389.14	23.42	388	28.46	387.4	30.08	387.19
39.39	386	42.91	385.39	44.5	385.16	46.87	384.84	52.59	384.1
53.07	384.03	53.37	384	55.12	383.83	55.51	383.77	60.92	383.24
62.32	383.01	63.11	382.92	68.84	382	70.51	382	70.62	381.99
70.65	381.99	72.29	381.86	75.66	381.58	75.71	381.58	107.79	380.14
133.25	380	142.46	380.01	142.47	380.01	143.34	380.01	144.83	379.93
148.88	376.15	158.68	377.05	162.04	379.27	163.86	379.55	165	379.72
177.83	385.54	177.88	385.59	178.05	385.77	184.04	392	185.15	392.92
186.38	394	187.72	394.9	189.13	396	191.28	397.41	192.06	398
193.04	398.69	195.15	400	197.27	401.31	198.6	402	247.03	403.66
256.64	404	258.53	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	142.47	.04	163.86	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
142.47	163.86	271.56	280.95	283.31	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6045

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	1.4	405.71	1.73	405.66	3.95	405.2	5.01	405.05
7.63	404.63	9.29	404.32	11.26	404	12.26	403.68	13.01	403.46
14.32	403.03	17.73	402	18.08	401.89	18.47	401.76	20.95	400.93
23.69	400.03	23.76	400	27.2	399.06	30.51	398	33.77	397.07
37.4	396	41.28	394.98	44.92	394	47.3	393.41	52.97	392
55.18	391.44	58.72	390.52	60.71	390	64.51	388.98	68.17	388
69.43	387.72	76.91	386	77.37	386	82.19	384.45	82.33	384.4
82.38	384.39	114.77	379.87	140.12	378.58	154.89	377.51	156.71	377.38
160.04	373.45	165.47	372.69	178.5	373.65	179.33	377.25	180.24	377.41
191.95	379.48	205.32	385.5	217.03	395.24	217.08	395.26	217.18	395.28
220.9	397.31	222.17	397.99	222.19	398.01	222.2	398.03	222.23	398.1
222.25	398.16	222.35	398.36	222.61	398.88	224.29	402	326.13	402
330.47	401.79								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	154.89	.04	180.24	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
154.89	180.24	209.04	198.49	192.65	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5847

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.24	1.45	399.08	2.8	398.92	10.83	398	13.21	397.68
24.43	396	25.01	395.89	35.42	394	37.27	393.74	37.79	393.69
52.7	390.12	52.72	390.12	52.77	390.11	86.22	383	117.82	378.26
133.59	377.77	134.53	377.22	140.83	373.57	146.8	372.61	149.54	373.16
153.94	377.43	154.53	377.49	167.73	378.81	180.08	387.08	185.44	391.87
185.49	391.87	185.84	391.92	189.44	391.94	190.5	392.47	190.93	396
193.6	397.72	193.98	398	194.59	398.26	195.26	398.49	199.97	400
266.19	400	286.7	400.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	134.53	.04	154.53	.085

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

```
       134.53  154.53           184.54  178.51  172.27            .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   274.9   286.7     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 5668

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     394    2.83     394    6.39  393.53    8.52  393.37    9.42  393.29
   10.04  393.25   11.67  393.09    12.4  393.05   13.26  392.96   14.13  392.92
   15.52  392.77    18.5   392.7    19.6  392.59   28.55  392.15   30.78     392
   32.39   391.8   32.82  391.76    37.1  391.21   42.85  390.73      45  390.55
   46.39   390.5   46.97  390.47   47.22  390.45   51.29     390   56.62   389.6
   57.93  389.52   62.13  389.24   67.84  388.94   71.82   388.7    73.9  388.59
   77.36  388.37   78.88  388.27   82.49     388   88.83  387.18   98.59  385.99
  104.13  385.21  105.71  385.01  107.69   384.8   110.1  384.48  116.68     384
  117.78  383.94  120.53  383.72  121.02  383.67  122.28  383.55  123.44  383.42
  125.71  383.18  130.86  382.57  135.53     382  147.05  380.28  172.82  377.69
  200.62  376.14  220.02  376.22  238.56  376.33  240.62  376.34  244.41  372.35
  247.08  371.75  250.38  372.58  255.86  374.91  258.75  376.54  258.77  376.55
  273.07  384.62   286.6  395.41  293.35  398.75  298.49  401.68  303.94  403.42
  307.78  398.42  308.98  398.02   309.2  398.17  309.69  398.55  314.05     402
  314.97  401.91  328.12     402  400.84     402   419.1  402.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  238.56     .04  258.75    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        238.56  258.75           144.79  148.68  152.52            .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   398.6   419.1     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 5520

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  392.57    1.77   392.5    2.21  392.46   11.92     392   17.09   391.5
   24.53  390.74   26.95  390.45   31.64     390   34.16  389.82   35.17  389.71
   39.42  389.35   45.83  388.73   54.99  388.04   61.37  387.47    63.9  387.27
   66.26  387.15   67.44  387.06   71.13  386.95   79.52  386.38   86.54  385.85
   89.06  385.64   90.11  385.57    94.2  385.24   97.92   384.9  101.16  384.58
  106.52     384  115.88  383.23  119.25  382.99  122.02  382.84  123.86  382.73
  125.85  382.65  131.94  382.26  139.57  381.73  153.36  380.63  161.65     380
  162.55  379.95  189.92  378.47  190.73  377.18  190.78  377.25  190.84  377.16
  211.86  375.32  242.87  374.82  245.72  374.78  248.59  373.11  256.95  371.96
  257.18   372.1  260.09   374.7   262.9  375.22     269  376.34  285.23  385.77
   295.6  394.02  300.61  398.04  301.69     400  307.46  401.12  309.84  401.46
  313.85     402  342.38  402.99  343.02  402.99  351.56  403.37  352.31  403.37
  354.24  403.43  354.97  403.43  356.01  403.47  356.73  403.46  357.34  403.48
  358.02  403.47  359.97  403.54  361.28  403.52  361.75  403.54  388.95  403.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  242.87     .04   262.9    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        242.87   262.9           75.07   77.35   79.63            .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   373.3  388.95     405

CROSS SECTION
```

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5442

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400	20.17	400	24.58	399.47	27.23	399.5	29.22	399.34
30.21	399.33	37.26	398.97	52.02	398	59.75	397.4	62.81	397.22
78.24	396	88.72	395.02	98.46	394	118.49	394	132.72	392.26
154.81	390	158.15	390	176.04	388	186.32	388	202.11	386.21
204.71	386	214.31	386	230.38	384.54	231.24	384.52	234.24	384
238.49	384	262.33	382.28	263.68	382.25	263.99	382.19	264.46	382.22
264.94	382.15	268.52	382	275.95	382	279.94	381.74	286.41	381.5
298.54	380.78	301.9	380.67	308.4	380.64	312.15	380.5	314.49	380.5
320.11	380	330.71	379.38	337.1	379.1	348.09	377.94	371.78	376.41
397.93	374.82	410.38	374.17	410.4	374.17	413.82	374	416.13	371.71
419.17	371.22	424.47	371.54	428.14	373.48	431.85	373.94	435.55	374.4
448.44	380.81	457.31	388.52	469.69	395.98	474.76	398.6	475.05	398.8
476.32	399.44	478.66	400.4	482.42	401.51	484.65	402	492.73	402
500.99	402.33	511.23	402.63	525.09	402.91	537.02	403.46	539.65	403.5
541.98	403.6	548.32	404	552.12	404.33	555.02	404.48	558.6	404.56

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	410.4	.04	431.85	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
410.4	431.85	0	0	.3	.5

SUMMARY OF MANNING'S N VALUES

River:Little Plumtree

Reach	River Sta.	n1	n2	n3	n4	n5	n6
Little Plumtree	9415	.065	.04	.065			
Little Plumtree	9282	.065	.04	.065			
Little Plumtree	9224	.065	.04	.065			
Little Plumtree	7800	Culvert					
Little Plumtree	7735	.075	.04	.055	.025	.065	
Little Plumtree	7717	Lat Struct					
Little Plumtree	7645	.025	.075	.04	.055	.025	.065
Little Plumtree	7560	.065	.04	.055	.025	.065	
Little Plumtree	7499	.025	.055	.04	.055	.025	.065
Little Plumtree	7437	.025	.055	.04	.055	.025	.065
Little Plumtree	7400	Culvert					
Little Plumtree	7358	.025	.055	.04	.055	.025	.065
Little Plumtree	7340	Lat Struct					
Little Plumtree	7261	.025	.085	.04	.085		
Little Plumtree	7059	.025	.085	.04	.085	.025	
Little Plumtree	6890	.025	.085	.04	.085	.025	
Little Plumtree	6690	.085	.04	.085			
Little Plumtree	6326	.085	.04	.085			
Little Plumtree	6045	.085	.04	.085			
Little Plumtree	5847	.085	.04	.085			
Little Plumtree	5668	.085	.04	.085			
Little Plumtree	5520	.085	.04	.085			
Little Plumtree	5442	.085	.04	.085			

SUMMARY OF REACH LENGTHS

River: Little Plumtree

Reach	River Sta.	Left	Channel	Right
Little Plumtree	9415	133.08	132.78	133.29
Little Plumtree	9282	61.4	57.86	54.02
Little Plumtree	9224	1437.81	1386.92	1507.68
Little Plumtree	7800	Culvert		
Little Plumtree	7735	142.82	90.04	69.09
Little Plumtree	7717	Lat Struct		
Little Plumtree	7645	85.44	84.61	84.17
Little Plumtree	7560	62.59	61.86	60.62

Little Plumtree	7499	62.52	61.98	61.21
Little Plumtree	7437	78.48	78.48	79.28
Little Plumtree	7400	Culvert		
Little Plumtree	7358	88.04	96.77	105.03
Little Plumtree	7340	Lat Struct		
Little Plumtree	7261	198.31	202.16	205.99
Little Plumtree	7059	168.76	169.64	170.29
Little Plumtree	6890	197.24	199.49	199.59
Little Plumtree	6690	377.18	363.89	351.23
Little Plumtree	6326	271.56	280.95	283.31
Little Plumtree	6045	209.04	198.49	192.65
Little Plumtree	5847	184.54	178.51	172.27
Little Plumtree	5668	144.79	148.68	152.52
Little Plumtree	5520	75.07	77.35	79.63
Little Plumtree	5442	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Little Plumtree

Reach	River Sta.	Contr.	Expan.
Little Plumtree	9415	.1	.3
Little Plumtree	9282	.1	.3
Little Plumtree	9224	.3	.5
Little Plumtree	7800	Culvert	
Little Plumtree	7735	.3	.5
Little Plumtree	7717	Lat Struct	
Little Plumtree	7645	.1	.3
Little Plumtree	7560	.1	.3
Little Plumtree	7499	.1	.3
Little Plumtree	7437	.3	.5
Little Plumtree	7400	Culvert	
Little Plumtree	7358	.3	.5
Little Plumtree	7340	Lat Struct	
Little Plumtree	7261	.1	.3
Little Plumtree	7059	.1	.3
Little Plumtree	6890	.1	.3
Little Plumtree	6690	.1	.3
Little Plumtree	6326	.1	.3
Little Plumtree	6045	.1	.3
Little Plumtree	5847	.1	.3
Little Plumtree	5668	.1	.3
Little Plumtree	5520	.1	.3
Little Plumtree	5442	.3	.5

HEC-RAS Plan: S River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	9415	2-YR	189.00	396.28	399.59	398.71	399.86	0.005417	4.11	45.97	23.88	0.52
Little Plumtree	9415	10-YR	397.00	396.28	400.77	399.74	401.17	0.005091	5.06	84.06	46.81	0.54
Little Plumtree	9415	50-YR	698.00	396.28	401.88	400.81	402.37	0.004351	5.86	149.89	69.58	0.53
Little Plumtree	9415	100-YR	862.00	396.28	402.40	401.28	402.90	0.003996	6.10	188.01	78.28	0.51
Little Plumtree	9415	7-30-2016	945.00	396.28	402.63	401.47	403.15	0.003868	6.22	206.89	82.13	0.51
Little Plumtree	9282	2-YR	189.00	395.11	398.60	397.90	398.97	0.008046	4.90	38.95	21.07	0.61
Little Plumtree	9282	10-YR	397.00	395.11	399.67	399.02	400.29	0.008310	6.41	68.35	35.28	0.66
Little Plumtree	9282	50-YR	698.00	395.11	400.89	400.15	401.63	0.006744	7.28	123.52	57.13	0.63
Little Plumtree	9282	100-YR	862.00	395.11	401.54	400.67	402.26	0.005687	7.36	165.37	75.02	0.59
Little Plumtree	9282	7-30-2016	945.00	395.11	401.83	400.90	402.53	0.005303	7.39	188.56	84.75	0.58
Little Plumtree	9224	2-YR	189.00	395.12	397.45	397.45	398.20	0.023040	6.95	27.21	18.99	1.01
Little Plumtree	9224	10-YR	397.00	395.12	398.45	398.45	399.55	0.018633	8.47	48.49	23.51	0.98
Little Plumtree	9224	50-YR	698.00	395.12	399.54	399.54	400.98	0.016409	9.79	76.82	28.44	0.96
Little Plumtree	9224	100-YR	862.00	395.12	399.96	399.96	401.64	0.016574	10.60	89.38	31.75	0.98
Little Plumtree	9224	7-30-2016	945.00	395.12	400.25	400.25	401.95	0.015338	10.71	98.78	35.06	0.96
Little Plumtree	7800		Culvert									
Little Plumtree	7735	2-YR	189.00	386.40	390.65	388.48	390.68	0.000322	1.35	143.87	106.48	0.14
Little Plumtree	7735	10-YR	397.00	386.40	391.44	389.00	391.51	0.000650	2.25	182.37	113.16	0.20
Little Plumtree	7735	50-YR	698.00	386.40	392.29	389.59	392.44	0.001016	3.22	224.01	119.06	0.26
Little Plumtree	7735	100-YR	862.00	386.40	392.65	389.87	392.86	0.001201	3.68	241.91	121.60	0.29
Little Plumtree	7735	7-30-2016	945.00	386.40	392.89	390.01	393.12	0.001233	3.84	253.71	123.27	0.30
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	190.00	386.41	390.43		390.58	0.002537	3.17	74.73	65.23	0.39
Little Plumtree	7645	10-YR	403.00	386.41	391.02		391.32	0.004467	4.71	115.18	73.03	0.55
Little Plumtree	7645	50-YR	741.00	386.41	391.65		392.14	0.006490	6.16	164.21	81.49	0.69
Little Plumtree	7645	100-YR	927.00	386.41	391.93		392.50	0.007331	6.74	187.45	85.17	0.74
Little Plumtree	7645	7-30-2016	1058.00	386.41	392.11		392.74	0.007818	7.08	203.66	94.43	0.76
Little Plumtree	7560	2-YR	190.00	385.70	390.34		390.40	0.001292	2.21	109.78	79.63	0.27
Little Plumtree	7560	10-YR	403.00	385.70	390.81		390.97	0.002985	3.48	149.45	88.61	0.41
Little Plumtree	7560	50-YR	741.00	385.70	391.26		391.57	0.005735	4.99	190.93	105.88	0.56
Little Plumtree	7560	100-YR	927.00	385.70	391.42		391.83	0.007346	5.72	208.57	123.06	0.63
Little Plumtree	7560	7-30-2016	1058.00	385.70	391.54		392.00	0.008379	6.15	221.60	134.20	0.68
Little Plumtree	7499	2-YR	190.00	385.87	390.31		390.34	0.000553	1.68	172.81	148.90	0.19
Little Plumtree	7499	10-YR	403.00	385.87	390.77		390.83	0.001134	2.51	250.65	183.58	0.27
Little Plumtree	7499	50-YR	741.00	385.87	391.22		391.32	0.001826	3.25	337.80	203.88	0.35
Little Plumtree	7499	100-YR	926.15	385.87	391.40		391.52	0.002159	3.60	374.33	205.75	0.38
Little Plumtree	7499	7-30-2016	1054.99	385.87	391.52		391.66	0.002337	3.80	399.49	207.03	0.39
Little Plumtree	7437	2-YR	190.00	383.80	390.29	386.03	390.32	0.000296	1.41	147.96	169.73	0.12
Little Plumtree	7437	10-YR	403.00	383.80	390.72	387.03	390.78	0.000654	2.16	257.13	213.48	0.18
Little Plumtree	7437	50-YR	734.77	383.80	391.14	388.18	391.23	0.001080	2.91	360.15	258.18	0.23
Little Plumtree	7437	100-YR	905.48	383.80	391.31	388.68	391.42	0.001228	3.18	404.65	263.79	0.25
Little Plumtree	7437	7-30-2016	1020.40	383.80	391.43	389.01	391.54	0.001279	3.29	436.84	267.45	0.25
Little Plumtree	7400		Culvert									
Little Plumtree	7358	2-YR	190.00	383.89	387.56	386.00	387.72	0.001860	3.27	68.39	36.26	0.33
Little Plumtree	7358	10-YR	403.00	383.89	388.60	387.06	388.89	0.002602	4.69	112.33	48.14	0.41
Little Plumtree	7358	50-YR	734.77	383.89	389.76	388.30	390.11	0.002621	5.56	221.31	144.79	0.43
Little Plumtree	7358	100-YR	905.48	383.89	390.24	388.75	390.51	0.002068	5.23	318.36	256.43	0.38
Little Plumtree	7358	7-30-2016	1020.40	383.89	390.57	388.72	390.77	0.001617	4.80	405.17	278.13	0.34
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	190.00	382.89	387.03	385.93	387.36	0.006181	4.63	44.85	50.89	0.54
Little Plumtree	7261	10-YR	403.00	382.89	388.28		388.58	0.004139	4.87	137.41	89.25	0.48
Little Plumtree	7261	50-YR	734.77	382.89	389.53		389.80	0.002962	5.10	266.10	115.54	0.42
Little Plumtree	7261	100-YR	905.21	382.89	390.02		390.28	0.002678	5.19	324.81	125.11	0.41
Little Plumtree	7261	7-30-2016	1016.43	382.89	390.30		390.56	0.002557	5.26	360.62	131.78	0.40
Little Plumtree	7059	2-YR	190.00	382.53	385.68		386.05	0.006797	4.85	39.17	17.06	0.56
Little Plumtree	7059	10-YR	403.00	382.53	387.16		387.62	0.005241	5.61	87.82	49.21	0.54
Little Plumtree	7059	50-YR	734.77	382.53	388.41		389.01	0.004914	6.70	169.19	80.26	0.55
Little Plumtree	7059	100-YR	905.21	382.53	388.96		389.56	0.004512	6.91	216.67	93.50	0.53
Little Plumtree	7059	7-30-2016	1016.43	382.53	389.31		389.89	0.004112	6.89	251.39	102.14	0.51

HEC-RAS Plan: S River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	6890	2-YR	190.00	381.04	384.57		384.97	0.005889	5.18	38.17	15.50	0.56
Little Plumtree	6890	10-YR	403.00	381.04	385.88	384.93	386.57	0.007217	6.90	67.40	38.64	0.64
Little Plumtree	6890	50-YR	734.77	381.04	387.40		388.08	0.006118	7.40	148.65	65.00	0.61
Little Plumtree	6890	100-YR	905.21	381.04	388.12		388.70	0.005678	7.12	200.39	86.20	0.57
Little Plumtree	6890	7-30-2016	1016.43	381.04	388.52		389.07	0.005623	7.08	236.42	93.75	0.55
Little Plumtree	6690	2-YR	190.00	380.59	383.34	382.67	383.70	0.006794	4.84	41.06	23.25	0.58
Little Plumtree	6690	10-YR	403.00	380.59	384.58	383.74	385.15	0.006690	6.17	75.33	32.18	0.61
Little Plumtree	6690	50-YR	734.77	380.59	385.25	384.97	386.41	0.011321	8.99	99.17	39.42	0.82
Little Plumtree	6690	100-YR	905.21	380.59	385.59	385.45	387.01	0.012461	9.99	113.18	43.06	0.87
Little Plumtree	6690	7-30-2016	1016.43	380.59	385.84	385.74	387.37	0.012503	10.42	124.62	45.81	0.88
Little Plumtree	6326	2-YR	190.00	376.15	378.65	378.65	379.52	0.022617	7.48	25.41	14.91	1.01
Little Plumtree	6326	10-YR	403.00	376.15	379.80	379.80	381.06	0.021509	9.00	44.94	20.21	1.03
Little Plumtree	6326	50-YR	734.77	376.15	381.20	381.20	382.19	0.011566	8.57	130.68	84.08	0.81
Little Plumtree	6326	100-YR	905.21	376.15	381.59	381.59	382.62	0.011026	8.98	164.92	93.51	0.81
Little Plumtree	6326	7-30-2016	1016.43	376.15	381.74	381.74	382.86	0.011630	9.46	179.37	95.69	0.83
Little Plumtree	6045	2-YR	190.00	372.69	377.36	374.61	377.43	0.000794	2.21	85.91	23.21	0.20
Little Plumtree	6045	10-YR	403.00	372.69	378.79	375.55	378.95	0.001181	3.24	138.78	52.00	0.26
Little Plumtree	6045	50-YR	734.77	372.69	380.18	376.72	380.44	0.001462	4.27	233.87	80.91	0.30
Little Plumtree	6045	100-YR	905.21	372.69	380.73	377.23	381.03	0.001539	4.64	280.47	86.15	0.31
Little Plumtree	6045	7-30-2016	1016.43	372.69	381.07	377.67	381.38	0.001579	4.85	309.59	89.26	0.32
Little Plumtree	5847	2-YR	190.00	372.61	376.93		377.14	0.003069	3.73	51.00	18.38	0.39
Little Plumtree	5847	10-YR	403.00	372.61	378.02		378.50	0.004805	5.55	75.25	34.27	0.51
Little Plumtree	5847	50-YR	734.77	372.61	378.97	377.94	379.84	0.006655	7.64	120.50	54.91	0.63
Little Plumtree	5847	100-YR	905.21	372.61	379.36	378.73	380.38	0.007288	8.43	142.19	58.04	0.67
Little Plumtree	5847	7-30-2016	1016.43	372.61	379.59	379.06	380.71	0.007622	8.89	155.82	59.93	0.69
Little Plumtree	5668	2-YR	190.00	371.75	376.32		376.56	0.003484	3.90	52.41	57.51	0.42
Little Plumtree	5668	10-YR	403.00	371.75	377.26		377.62	0.004642	5.18	117.90	79.40	0.50
Little Plumtree	5668	50-YR	734.77	371.75	378.34		378.76	0.004260	5.99	214.17	95.61	0.50
Little Plumtree	5668	100-YR	905.21	371.75	378.82		379.25	0.004043	6.25	261.13	101.21	0.50
Little Plumtree	5668	7-30-2016	1016.43	371.75	379.11		379.55	0.003920	6.39	291.05	104.62	0.49
Little Plumtree	5520	2-YR	190.00	371.96	375.27	374.86	375.70	0.010789	5.31	41.14	47.92	0.71
Little Plumtree	5520	10-YR	403.00	371.96	376.48		376.86	0.005657	5.47	114.90	70.61	0.56
Little Plumtree	5520	50-YR	734.77	371.96	377.75		378.13	0.004073	5.89	213.52	81.06	0.50
Little Plumtree	5520	100-YR	905.21	371.96	378.26		378.66	0.003792	6.13	255.40	82.26	0.50
Little Plumtree	5520	7-30-2016	1016.43	371.96	378.55		378.98	0.003766	6.36	279.46	84.44	0.50
Little Plumtree	5442	2-YR	190.00	371.22	375.06	373.73	375.24	0.002782	3.44	64.62	42.95	0.38
Little Plumtree	5442	10-YR	403.00	371.22	376.26	374.87	376.53	0.002782	4.46	129.09	65.00	0.41
Little Plumtree	5442	50-YR	734.77	371.22	377.51	375.93	377.87	0.002783	5.43	224.21	87.02	0.43
Little Plumtree	5442	100-YR	905.21	371.22	378.02	376.36	378.41	0.002781	5.79	270.71	95.46	0.44
Little Plumtree	5442	7-30-2016	1016.43	371.22	378.31	376.59	378.73	0.002780	6.00	299.31	98.84	0.44

HEC-RAS Plan: S River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	9415	2-YR	399.86	399.59	0.26	0.87	0.01		189.00		23.88	0.62
Little Plumtree	9415	10-YR	401.17	400.77	0.39	0.85	0.02	0.06	391.14	5.80	46.81	0.84
Little Plumtree	9415	50-YR	402.37	401.88	0.49	0.71	0.03	12.65	634.68	50.67	69.58	1.00
Little Plumtree	9415	100-YR	402.90	402.40	0.51	0.63	0.02	26.56	749.28	86.16	78.28	1.04
Little Plumtree	9415	7-30-2016	403.15	402.63	0.52	0.60	0.02	34.74	804.42	105.84	82.13	1.07
Little Plumtree	9282	2-YR	398.97	398.60	0.37	0.74	0.04		188.70	0.30	21.07	0.89
Little Plumtree	9282	10-YR	400.29	399.67	0.62	0.69	0.05	0.70	385.34	10.96	35.28	1.35
Little Plumtree	9282	50-YR	401.63	400.89	0.74	0.58	0.07	14.83	620.27	62.90	57.13	1.55
Little Plumtree	9282	100-YR	402.26	401.54	0.72	0.52	0.10	37.38	724.21	100.41	75.02	1.51
Little Plumtree	9282	7-30-2016	402.53	401.83	0.71	0.48	0.10	53.23	771.31	120.46	84.75	1.49
Little Plumtree	9224	2-YR	398.20	397.45	0.75				189.00	0.00	18.99	1.97
Little Plumtree	9224	10-YR	399.55	398.45	1.10				392.59	4.41	23.51	2.51
Little Plumtree	9224	50-YR	400.98	399.54	1.44				673.24	24.76	28.44	3.03
Little Plumtree	9224	100-YR	401.64	399.96	1.68			0.08	824.06	37.86	31.75	3.41
Little Plumtree	9224	7-30-2016	401.95	400.25	1.70			0.62	897.92	46.46	35.06	3.40
Little Plumtree	7800		Culvert									
Little Plumtree	7735	2-YR	390.68	390.65	0.03	0.06	0.04	5.35	183.65		106.48	0.06
Little Plumtree	7735	10-YR	391.51	391.44	0.08	0.13	0.07	12.12	384.88		113.16	0.15
Little Plumtree	7735	50-YR	392.44	392.29	0.16	0.21	0.10	22.42	675.58		119.06	0.29
Little Plumtree	7735	100-YR	392.86	392.65	0.21	0.24	0.11	28.13	833.87		121.60	0.36
Little Plumtree	7735	7-30-2016	393.12	392.89	0.22	0.26	0.12	31.13	913.87		123.27	0.39
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	390.58	390.43	0.15	0.15	0.02	11.23	178.77		65.23	0.32
Little Plumtree	7645	10-YR	391.32	391.02	0.30	0.31	0.04	55.61	347.39		73.03	0.61
Little Plumtree	7645	50-YR	392.14	391.65	0.49	0.52	0.05	146.73	594.27		81.49	0.97
Little Plumtree	7645	100-YR	392.50	391.93	0.57	0.62	0.05	201.56	725.44		85.17	1.15
Little Plumtree	7645	7-30-2016	392.74	392.11	0.63	0.69	0.05	241.74	816.26		94.43	1.26
Little Plumtree	7560	2-YR	390.40	390.34	0.07	0.05	0.01	25.21	164.79		79.63	0.15
Little Plumtree	7560	10-YR	390.97	390.81	0.16	0.11	0.03	78.61	324.39		88.61	0.40
Little Plumtree	7560	50-YR	391.57	391.26	0.31	0.19	0.06	178.00	562.97	0.03	105.88	0.84
Little Plumtree	7560	100-YR	391.83	391.42	0.41	0.23	0.09	235.50	690.34	1.16	123.06	1.11
Little Plumtree	7560	7-30-2016	392.00	391.54	0.47	0.25	0.10	277.15	776.59	4.27	134.20	1.30
Little Plumtree	7499	2-YR	390.34	390.31	0.03	0.02	0.00	64.15	123.46	2.39	148.90	0.08
Little Plumtree	7499	10-YR	390.83	390.77	0.06	0.05	0.00	152.17	219.24	31.59	183.58	0.18
Little Plumtree	7499	50-YR	391.32	391.22	0.10	0.09	0.00	285.39	337.36	118.25	203.88	0.29
Little Plumtree	7499	100-YR	391.52	391.40	0.12	0.10	0.00	354.55	398.67	172.94	205.75	0.36
Little Plumtree	7499	7-30-2016	391.66	391.52	0.14	0.11	0.01	401.89	438.29	214.81	207.03	0.41
Little Plumtree	7437	2-YR	390.32	390.29	0.03			4.75	184.09	1.16	169.73	0.08
Little Plumtree	7437	10-YR	390.78	390.72	0.06			47.54	310.97	44.50	213.48	0.18
Little Plumtree	7437	50-YR	391.23	391.14	0.09			149.82	457.52	127.43	258.18	0.31
Little Plumtree	7437	100-YR	391.42	391.31	0.11			214.58	516.57	174.32	263.79	0.37
Little Plumtree	7437	7-30-2016	391.54	391.43	0.11			263.69	548.37	208.34	267.45	0.39
Little Plumtree	7400		Culvert									
Little Plumtree	7358	2-YR	387.72	387.56	0.15	0.30	0.05	4.34	175.26	10.41	36.26	0.34
Little Plumtree	7358	10-YR	388.89	388.60	0.29	0.31	0.00	24.37	335.20	43.42	48.14	0.63
Little Plumtree	7358	50-YR	390.11	389.76	0.35	0.26	0.04	118.51	508.27	107.99	144.79	0.82
Little Plumtree	7358	100-YR	390.51	390.24	0.27	0.22	0.00	240.08	522.08	143.32	256.43	0.70
Little Plumtree	7358	7-30-2016	390.77	390.57	0.20	0.19	0.02	324.14	505.78	190.48	278.13	0.58
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	387.36	387.03	0.33	1.31	0.00	1.43	188.57		50.89	0.77
Little Plumtree	7261	10-YR	388.58	388.28	0.30	0.94	0.02	83.10	319.05	0.86	89.25	0.75
Little Plumtree	7261	50-YR	389.80	389.53	0.27	0.76	0.03	263.61	462.66	8.50	115.54	0.74
Little Plumtree	7261	100-YR	390.28	390.02	0.26	0.69	0.03	369.79	521.63	13.79	125.11	0.75
Little Plumtree	7261	7-30-2016	390.56	390.30	0.26	0.64	0.03	441.24	557.77	17.42	131.78	0.75
Little Plumtree	7059	2-YR	386.05	385.68	0.37	1.07	0.00		190.00		17.06	0.85
Little Plumtree	7059	10-YR	387.62	387.16	0.47	1.04	0.02	17.21	384.58	1.22	49.21	0.99
Little Plumtree	7059	50-YR	389.01	388.41	0.60	0.93	0.01	99.52	628.14	7.11	80.26	1.27
Little Plumtree	7059	100-YR	389.56	388.96	0.60	0.85	0.01	170.08	723.72	11.41	93.50	1.30
Little Plumtree	7059	7-30-2016	389.89	389.31	0.57	0.81	0.00	230.89	771.01	14.53	102.14	1.26
Little Plumtree	6890	2-YR	384.97	384.57	0.40	1.26	0.01	7.63	182.37		15.50	0.90
Little Plumtree	6890	10-YR	386.57	385.88	0.69	1.39	0.04	33.67	369.33		38.64	1.46

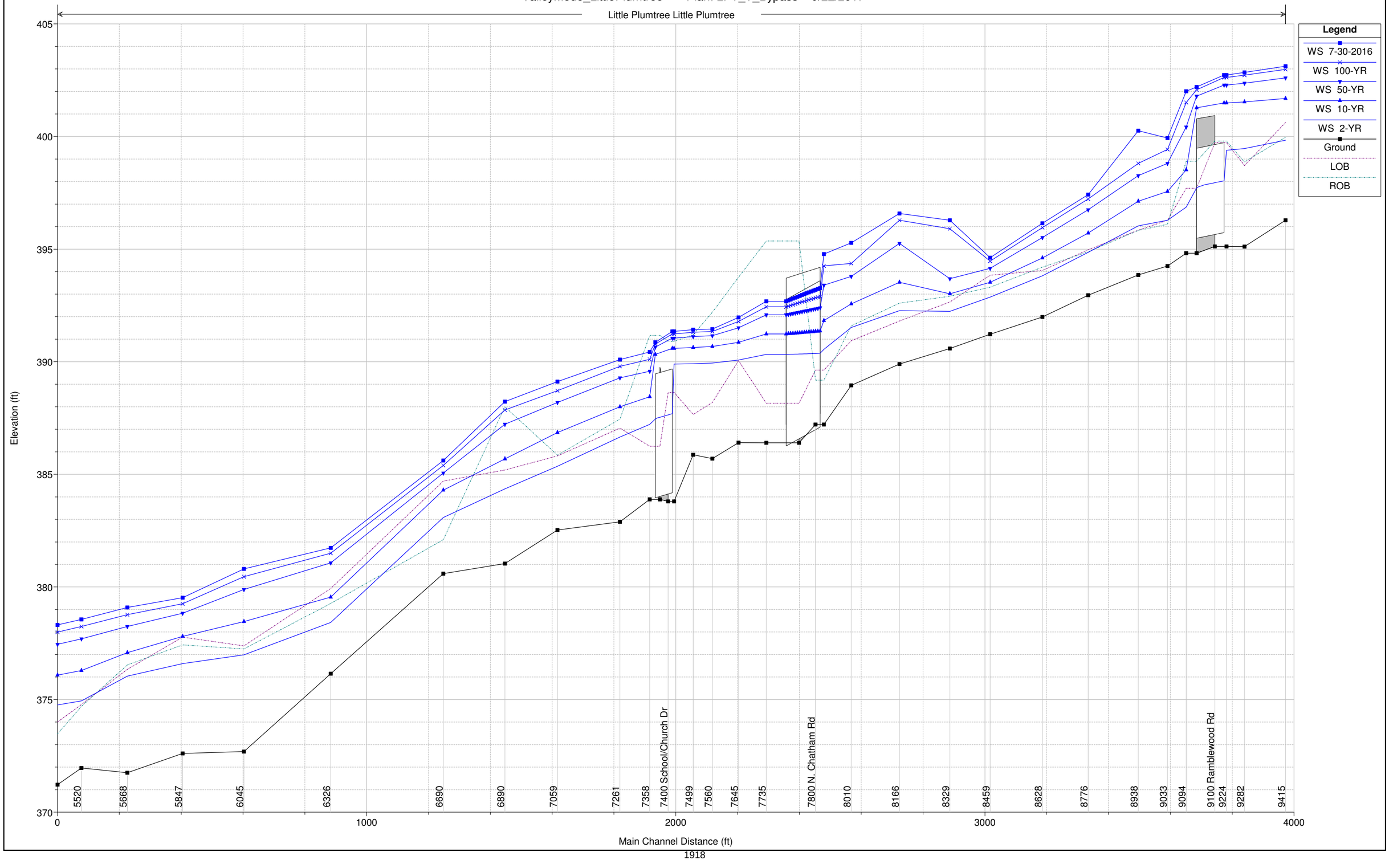
HEC-RAS Plan: S River: Little Plumtree Reach: Little Plumtree (Continued)

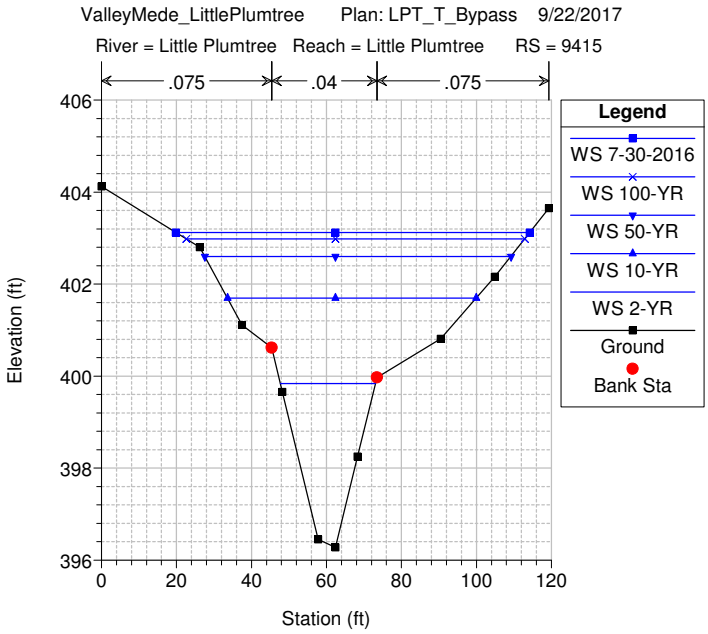
Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	6890	50-YR	388.08	387.40	0.68	1.62	0.05	160.71	574.06		65.00	1.55
Little Plumtree	6890	100-YR	388.70	388.12	0.58	1.61	0.08	263.71	641.50		86.20	1.54
Little Plumtree	6890	7-30-2016	389.07	388.52	0.56	1.60	0.10	326.25	690.18		93.75	1.60
Little Plumtree	6690	2-YR	383.70	383.34	0.36	4.13	0.05		188.23	1.77	23.25	0.84
Little Plumtree	6690	10-YR	385.15	384.58	0.57	4.01	0.07		383.82	19.18	32.18	1.21
Little Plumtree	6690	50-YR	386.41	385.25	1.17	4.17	0.05	1.10	678.67	55.00	39.42	2.42
Little Plumtree	6690	100-YR	387.01	385.59	1.42	4.27	0.12	4.20	822.67	78.34	43.06	2.91
Little Plumtree	6690	7-30-2016	387.37	385.84	1.53	4.39	0.12	8.32	912.27	95.84	45.81	3.10
Little Plumtree	6326	2-YR	379.52	378.65	0.87	0.63	0.24		190.00		14.91	2.19
Little Plumtree	6326	10-YR	381.06	379.80	1.26	0.87	0.33		402.86	0.14	20.21	2.85
Little Plumtree	6326	50-YR	382.19	381.20	0.99	0.89	0.22	91.38	636.11	7.28	84.08	2.27
Little Plumtree	6326	100-YR	382.62	381.59	1.04	0.91	0.22	153.24	740.34	11.62	93.51	2.40
Little Plumtree	6326	7-30-2016	382.86	381.74	1.13	0.94	0.24	191.02	811.24	14.17	95.69	2.64
Little Plumtree	6045	2-YR	377.43	377.36	0.08	0.28	0.01		190.00		23.21	0.15
Little Plumtree	6045	10-YR	378.95	378.79	0.16	0.42	0.03	4.89	395.62	2.49	52.00	0.30
Little Plumtree	6045	50-YR	380.44	380.18	0.26	0.54	0.06	44.90	671.40	18.46	80.91	0.48
Little Plumtree	6045	100-YR	381.03	380.73	0.30	0.58	0.07	79.84	795.25	30.12	86.15	0.55
Little Plumtree	6045	7-30-2016	381.38	381.07	0.32	0.59	0.08	105.33	872.66	38.43	89.26	0.59
Little Plumtree	5847	2-YR	377.14	376.93	0.22	0.58	0.00		190.00		18.38	0.47
Little Plumtree	5847	10-YR	378.50	378.02	0.48	0.84	0.03	0.54	401.76	0.70	34.27	0.95
Little Plumtree	5847	50-YR	379.84	378.97	0.86	0.94	0.13	23.09	698.28	13.41	54.91	1.66
Little Plumtree	5847	100-YR	380.38	379.36	1.02	0.95	0.18	43.08	835.91	26.22	58.04	1.97
Little Plumtree	5847	7-30-2016	380.71	379.59	1.12	0.95	0.20	58.29	922.34	35.79	59.93	2.16
Little Plumtree	5668	2-YR	376.56	376.32	0.24	0.84	0.02	0.86	189.14		57.51	0.52
Little Plumtree	5668	10-YR	377.62	377.26	0.36	0.76	0.00	54.27	348.48	0.25	79.40	0.85
Little Plumtree	5668	50-YR	378.76	378.34	0.42	0.61	0.01	197.46	534.51	2.80	95.61	1.03
Little Plumtree	5668	100-YR	379.25	378.82	0.43	0.58	0.01	282.38	617.72	5.10	101.21	1.09
Little Plumtree	5668	7-30-2016	379.55	379.11	0.44	0.57	0.00	339.81	669.70	6.92	104.62	1.12
Little Plumtree	5520	2-YR	375.70	375.27	0.43	0.38	0.08	4.11	185.89	0.00	47.92	1.09
Little Plumtree	5520	10-YR	376.86	376.48	0.38	0.30	0.03	74.50	324.23	4.27	70.61	0.97
Little Plumtree	5520	50-YR	378.13	377.75	0.38	0.26	0.01	215.21	499.26	20.29	81.06	1.00
Little Plumtree	5520	100-YR	378.66	378.26	0.40	0.25	0.00	292.85	582.86	29.50	82.26	1.04
Little Plumtree	5520	7-30-2016	378.98	378.55	0.42	0.25	0.00	339.09	641.43	35.91	84.44	1.10
Little Plumtree	5442	2-YR	375.24	375.06	0.18			4.16	183.07	2.77	42.95	0.40
Little Plumtree	5442	10-YR	376.53	376.26	0.27			37.78	352.20	13.02	65.00	0.60
Little Plumtree	5442	50-YR	377.87	377.51	0.36			128.15	573.67	32.95	87.02	0.80
Little Plumtree	5442	100-YR	378.41	378.02	0.40			185.74	675.35	44.12	95.46	0.88
Little Plumtree	5442	7-30-2016	378.73	378.31	0.42			227.65	737.29	51.48	98.84	0.93

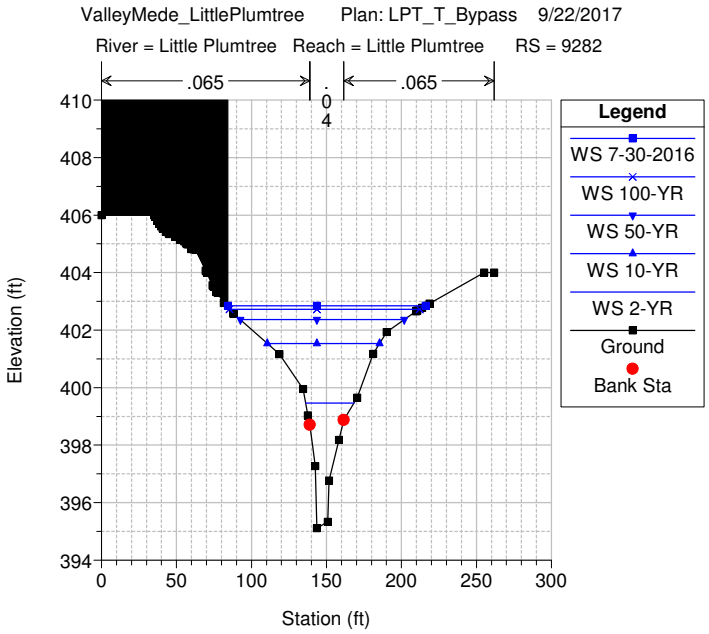
Appendix H-14

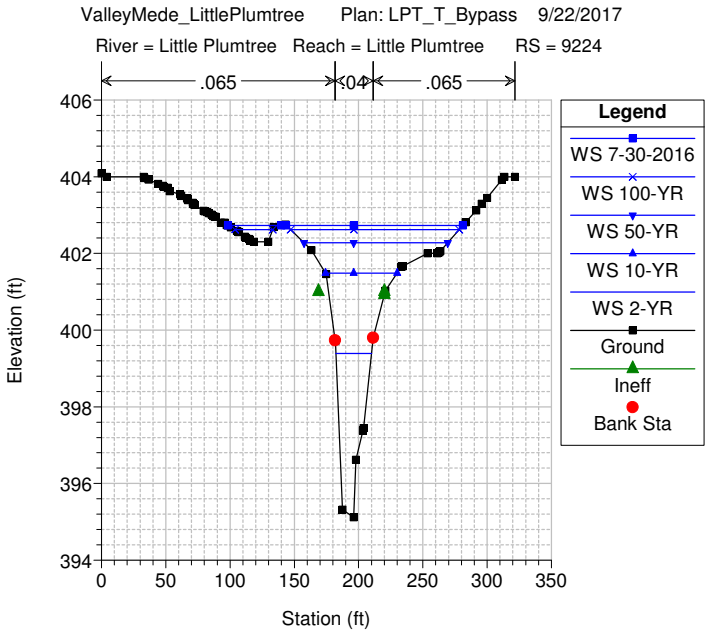
Little Plumtree Branch: Option T Hydraulic Modeling

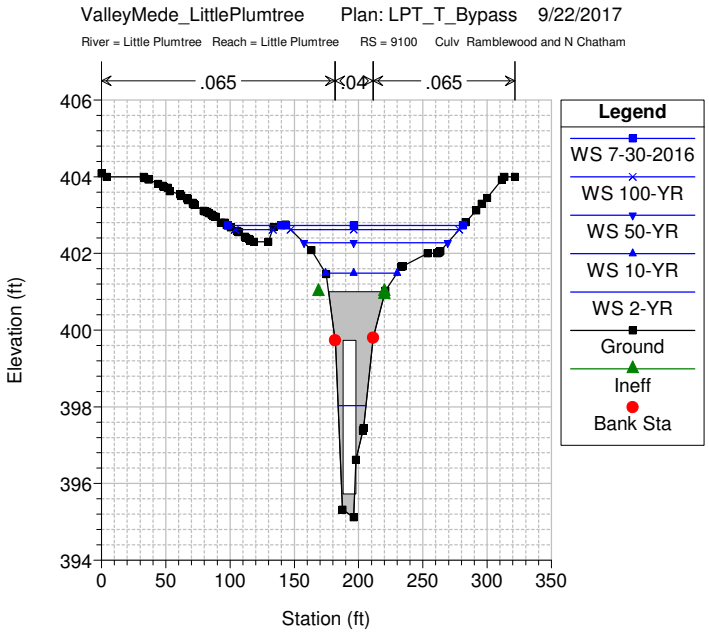
ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017

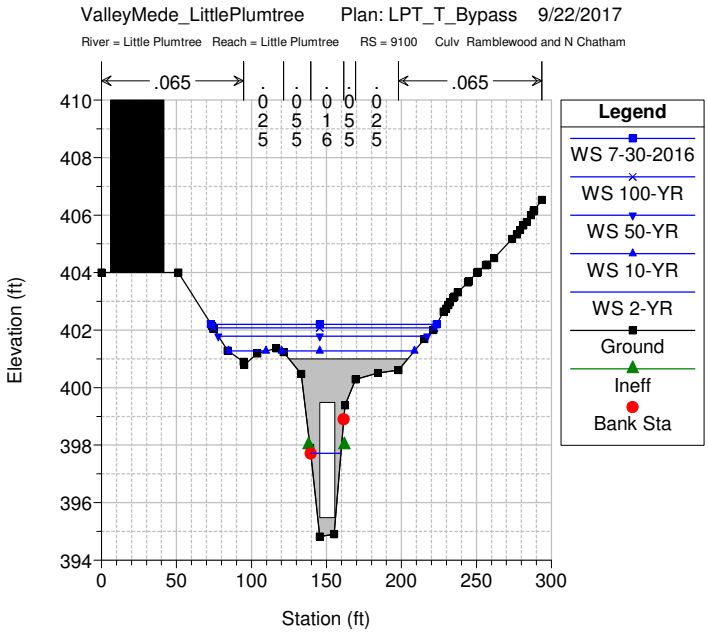


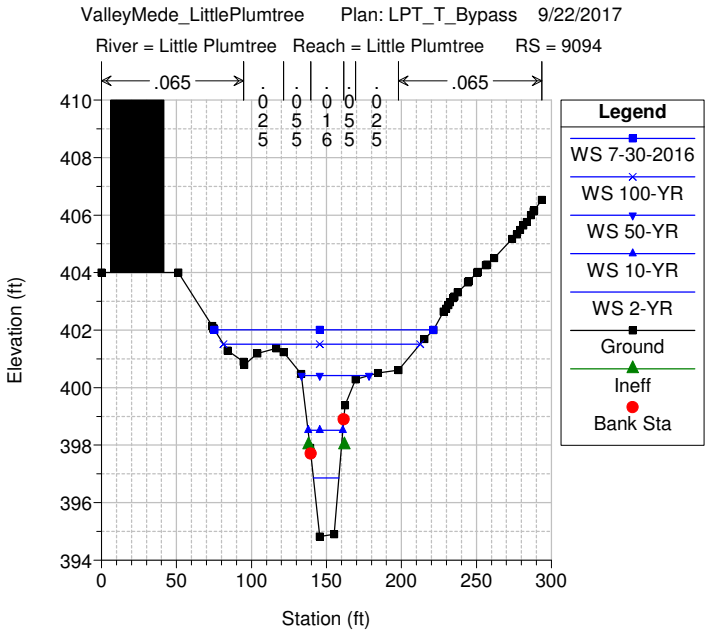

ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9415
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

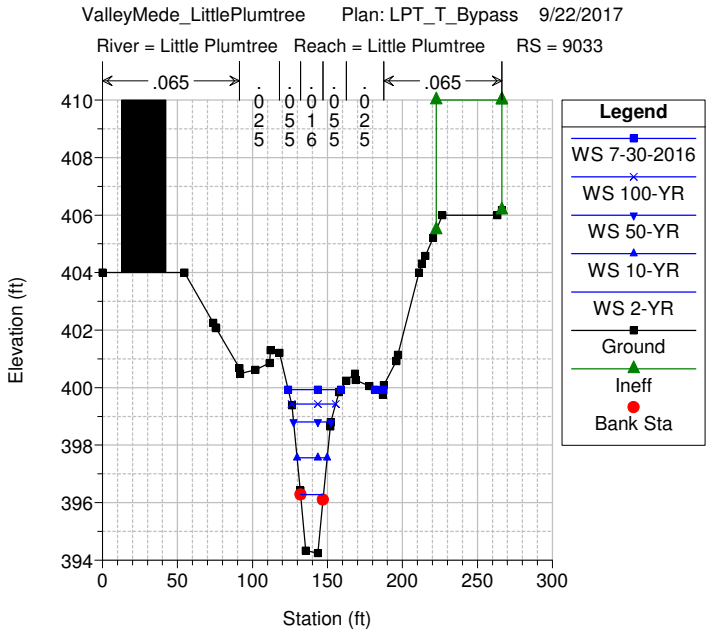

ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9282
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

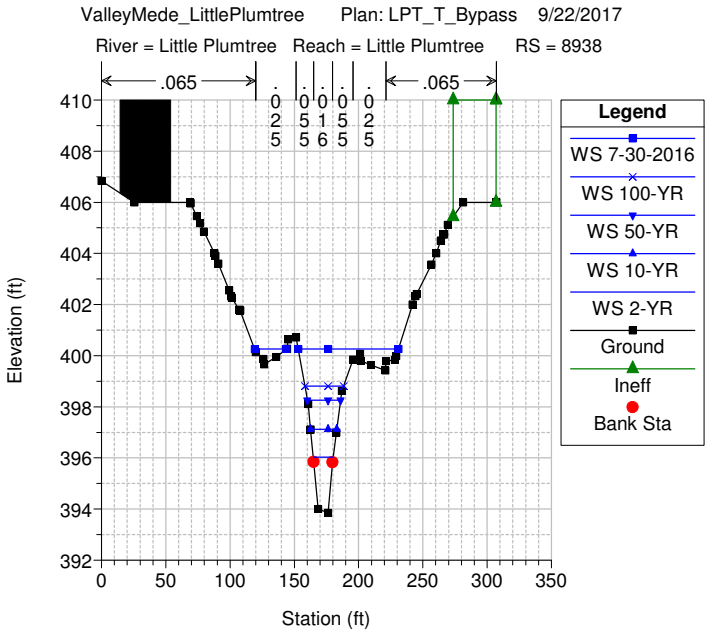

ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9224
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

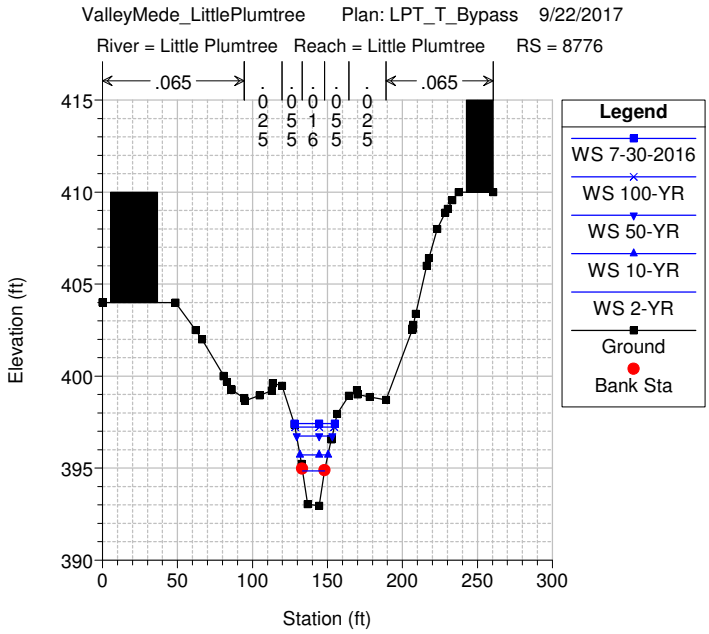

ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9100 Culv Ramblewood and N Chatham
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

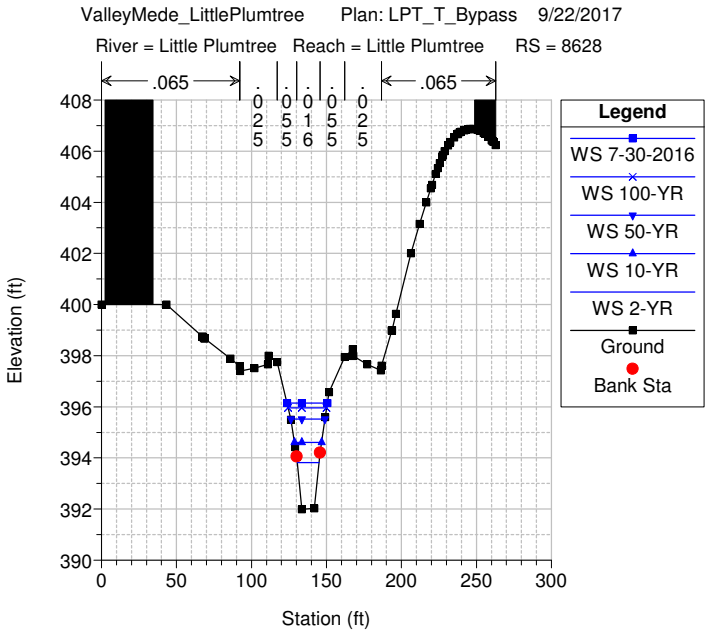

ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9100 Culv Ramblewood and N Chatham
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9094
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9033
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8938
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8776
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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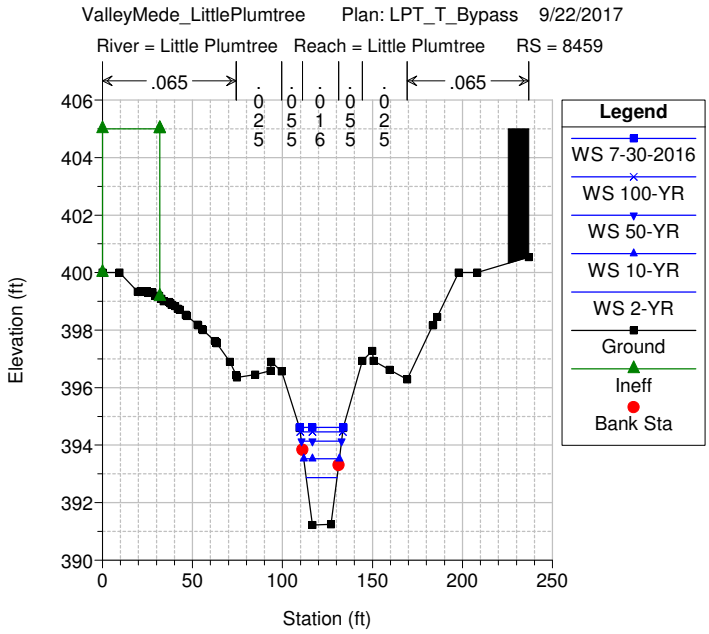
River = Little Plumtree Reach = Little Plumtree RS = 8628
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8459
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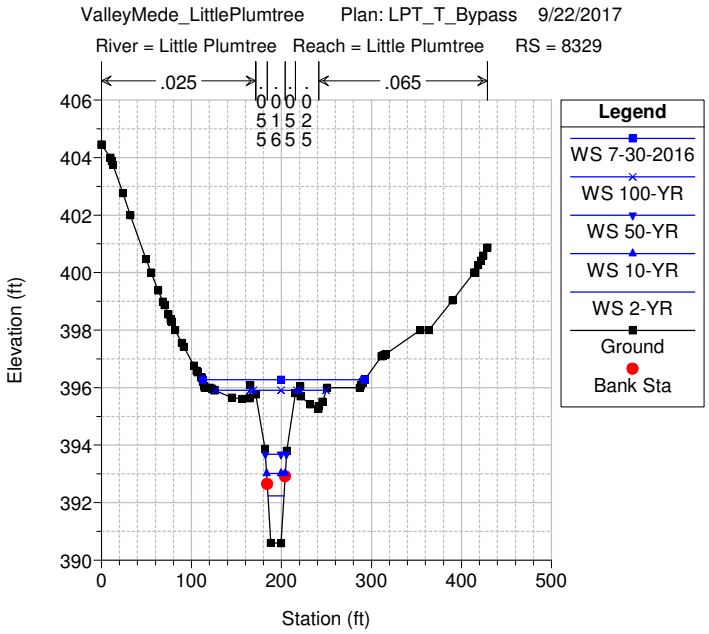
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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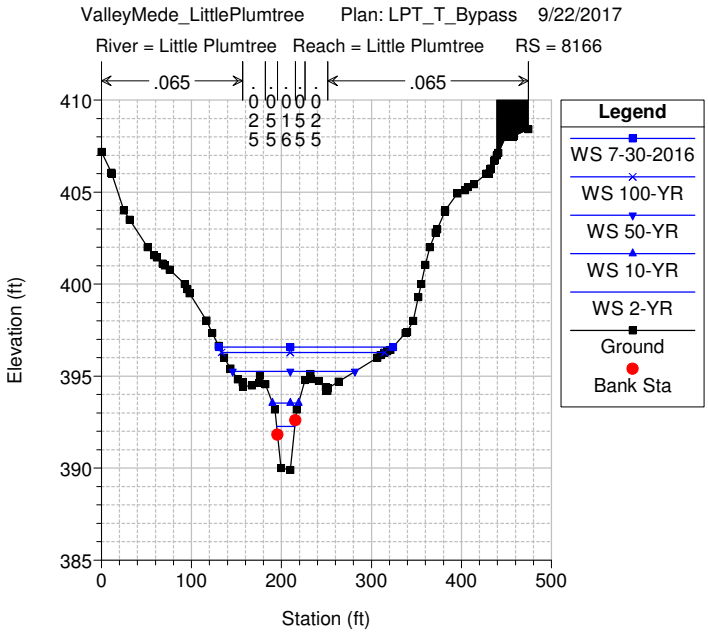
River = Little Plumtree Reach = Little Plumtree RS = 8329
.025
.065
.055
.016
.055
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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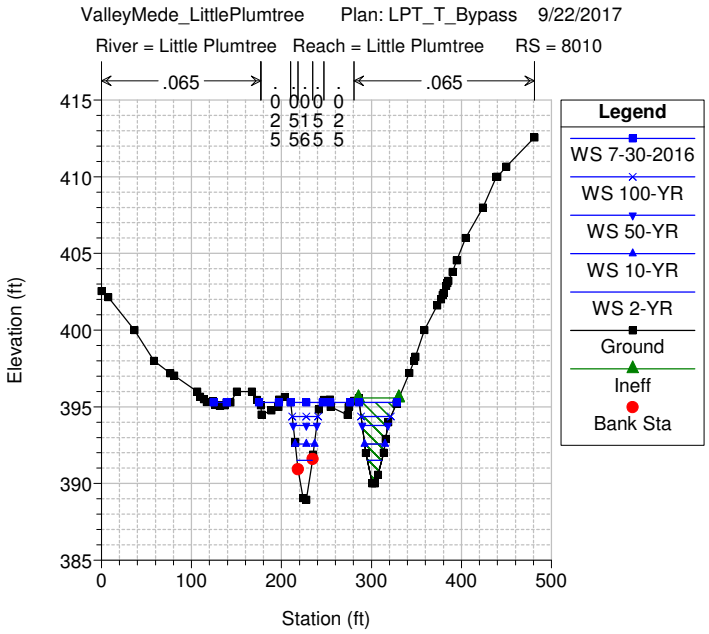
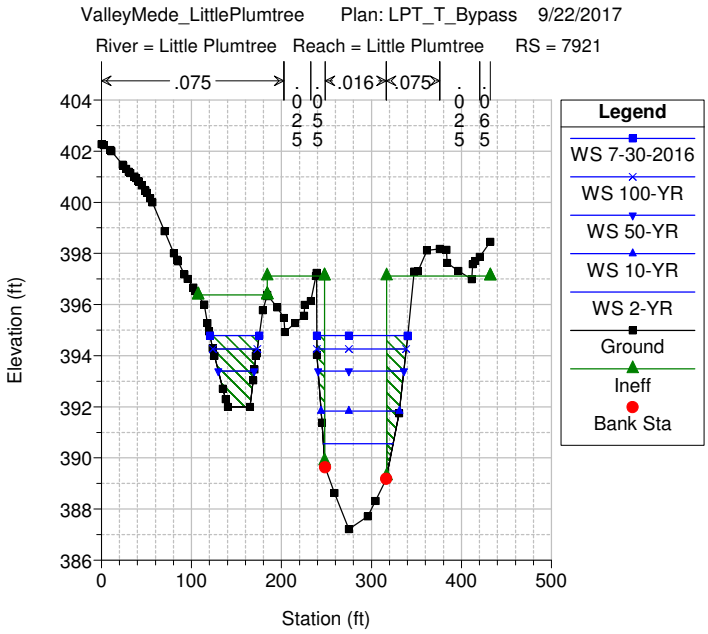
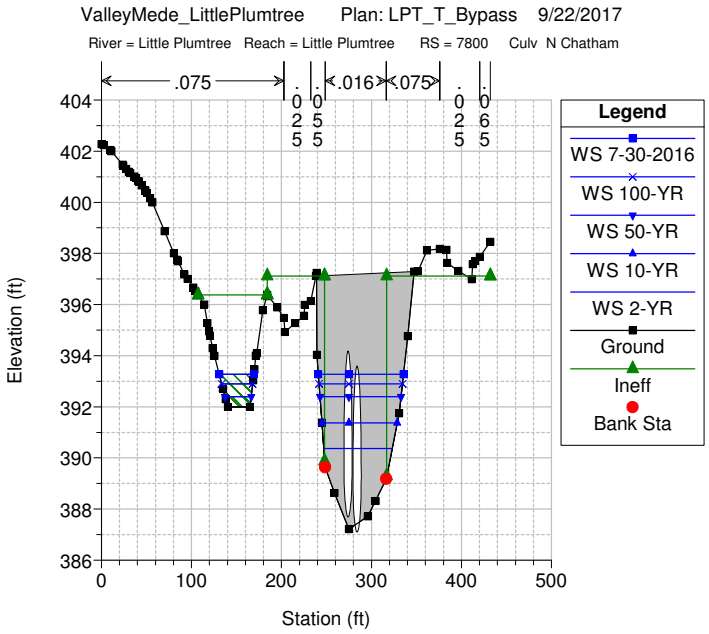
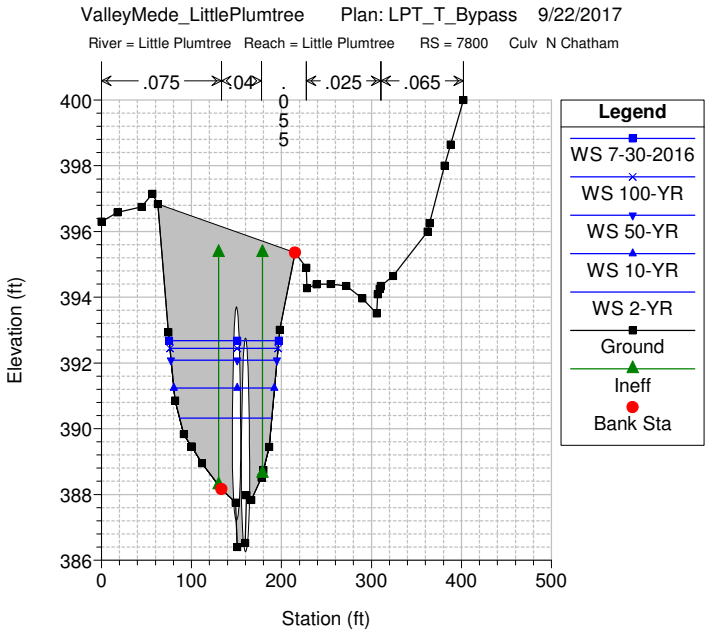
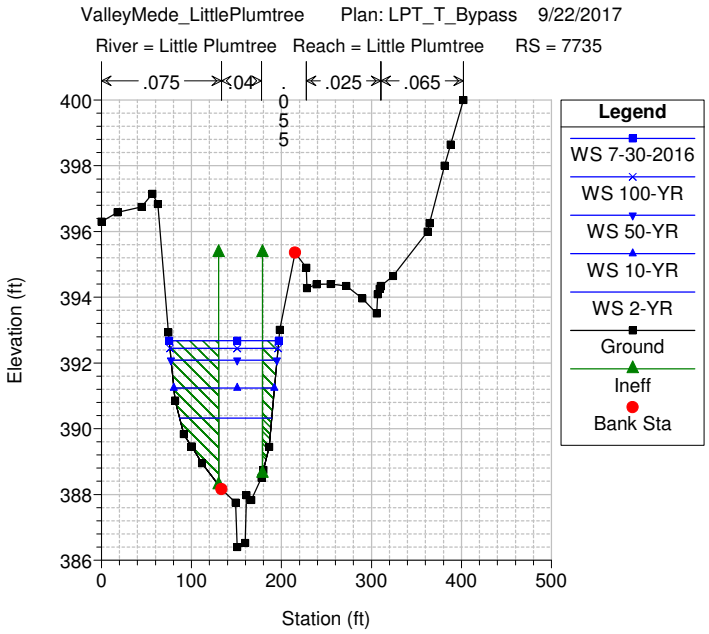
River = Little Plumtree Reach = Little Plumtree RS = 8166
.065
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

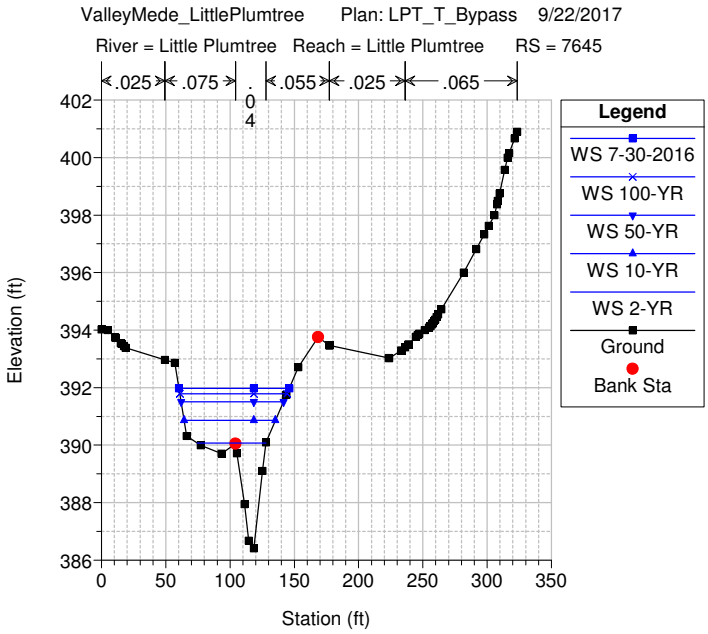

ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8010
.065
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7921
.075
.016
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7800 Culv N Chatham
.075
.016
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7800 Culv N Chatham
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7735
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7645
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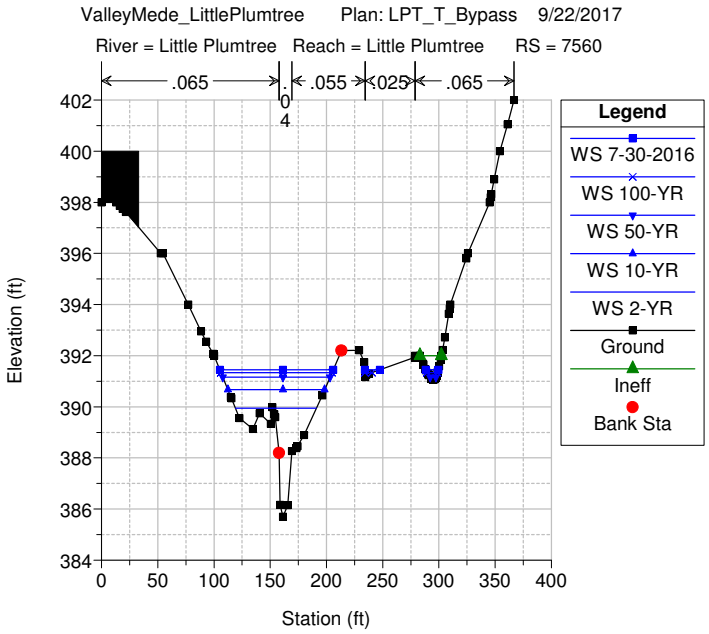
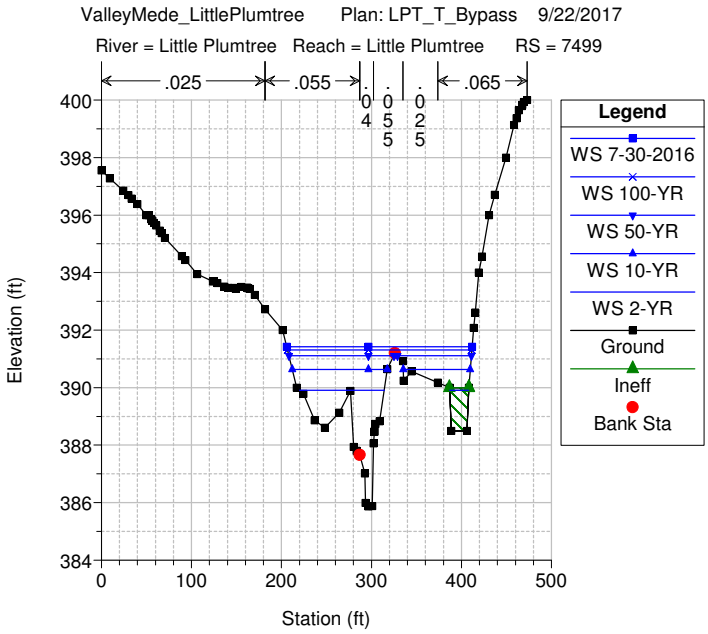
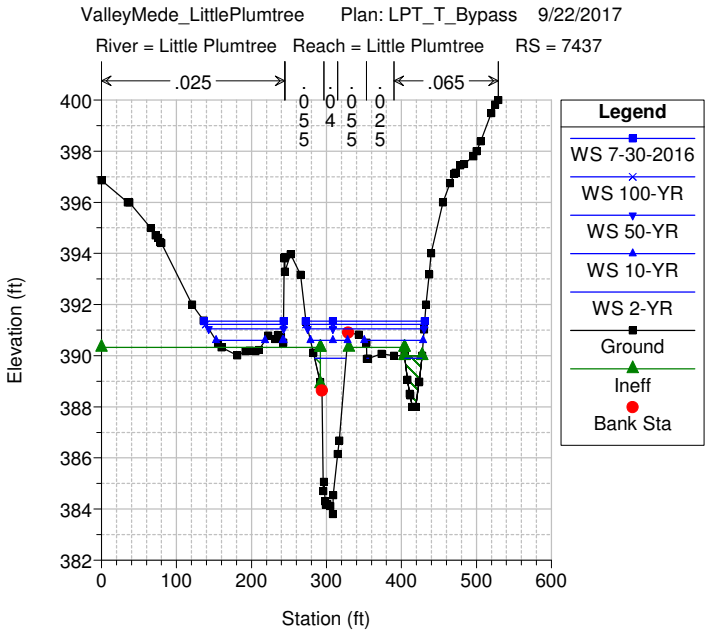
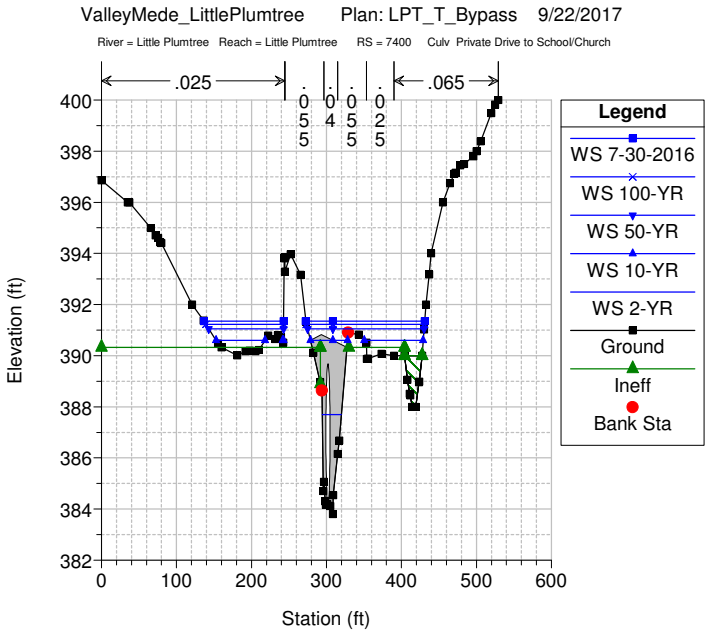
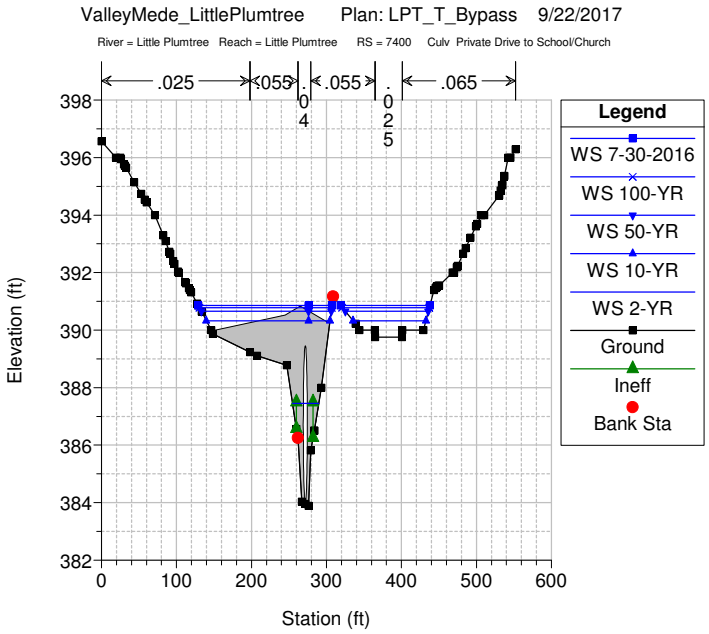
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

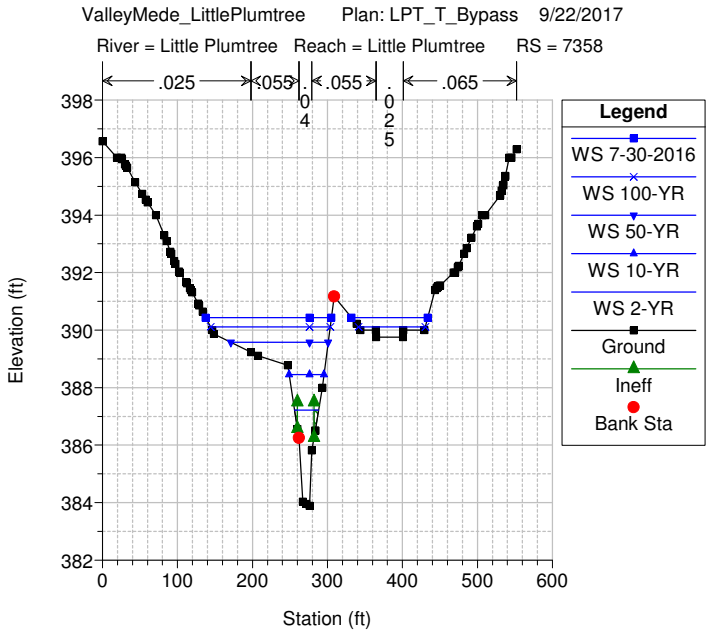

ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7560
.065 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7499
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7437
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7400 Culv Private Drive to School/Church
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7400 Culv Private Drive to School/Church
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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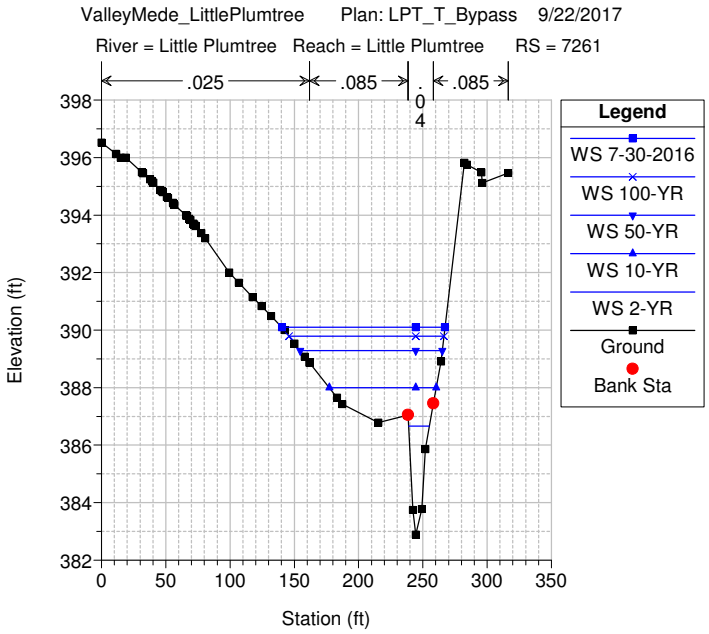
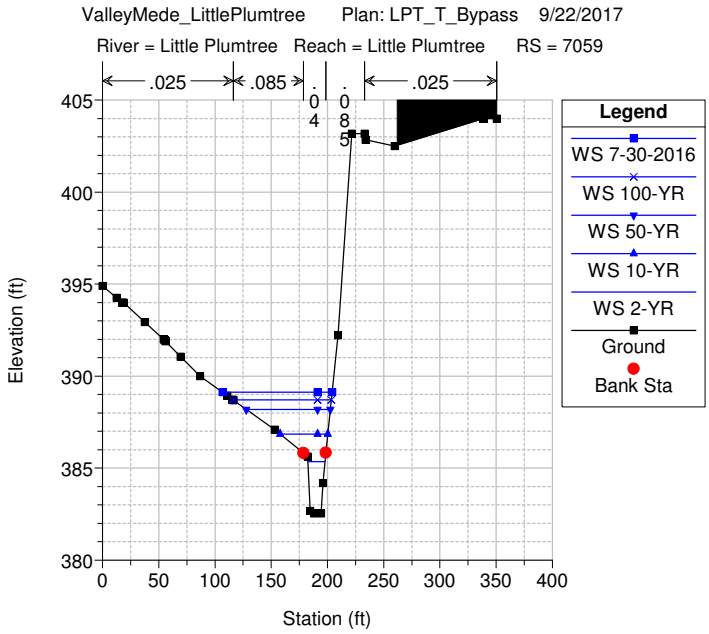
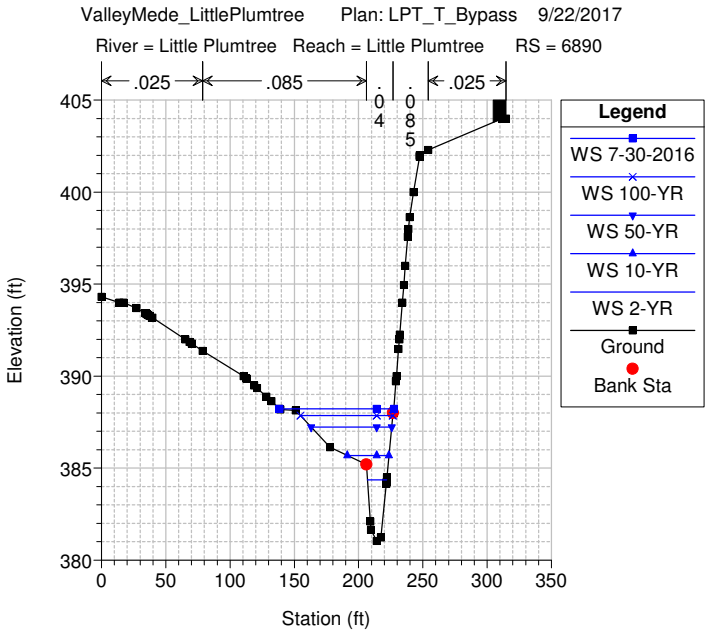
River = Little Plumtree Reach = Little Plumtree RS = 7358
.025
.055
.055
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7261
.025
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7059
.025
.085
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 6890
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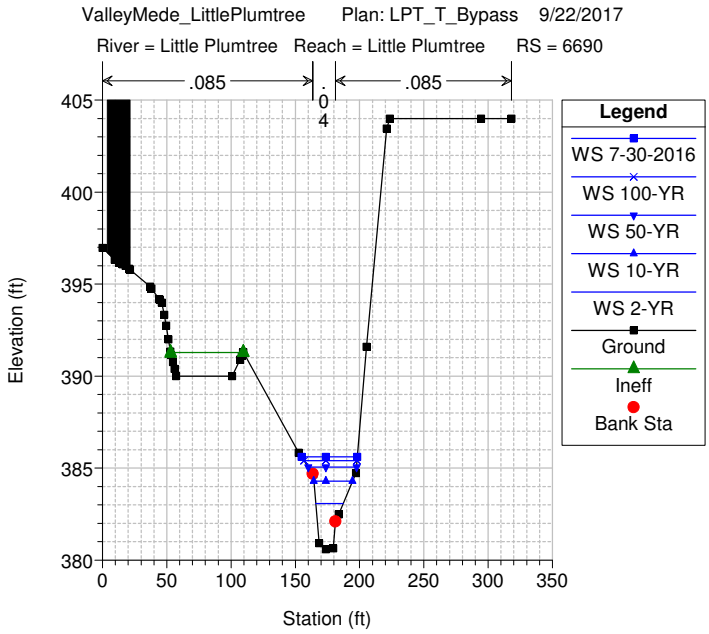
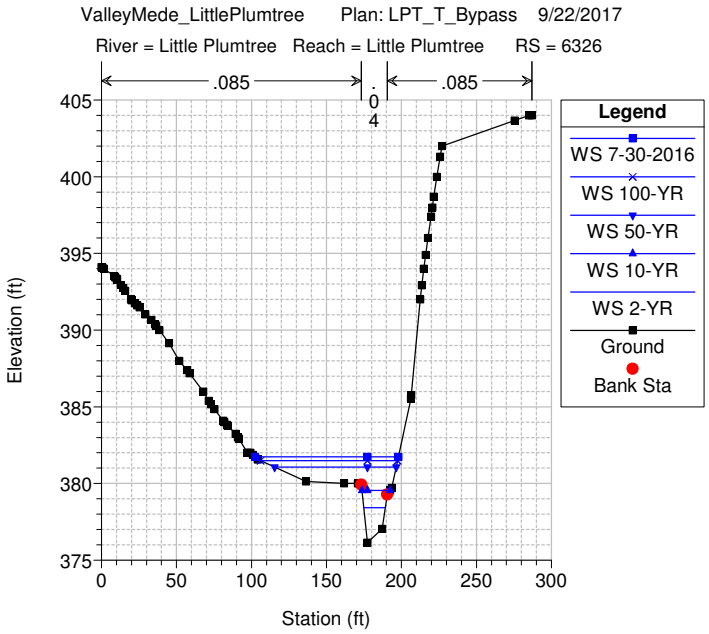
.085
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6690
.085
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6326
.085
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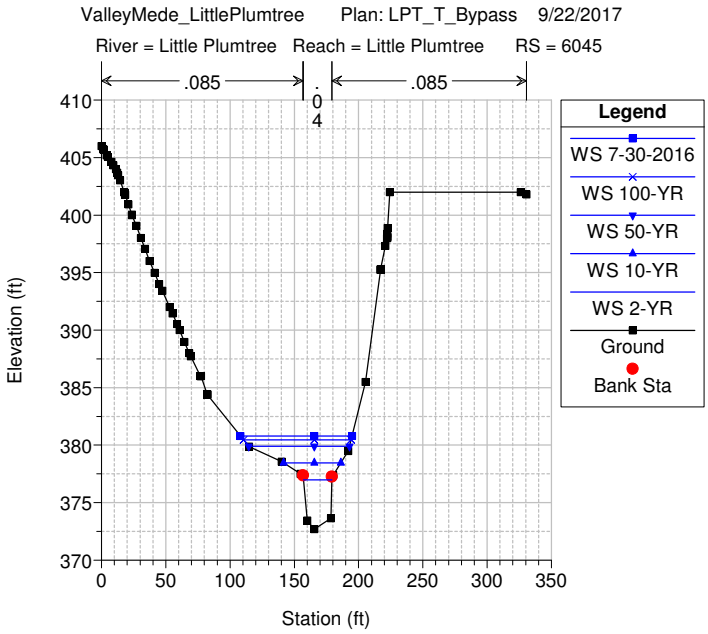
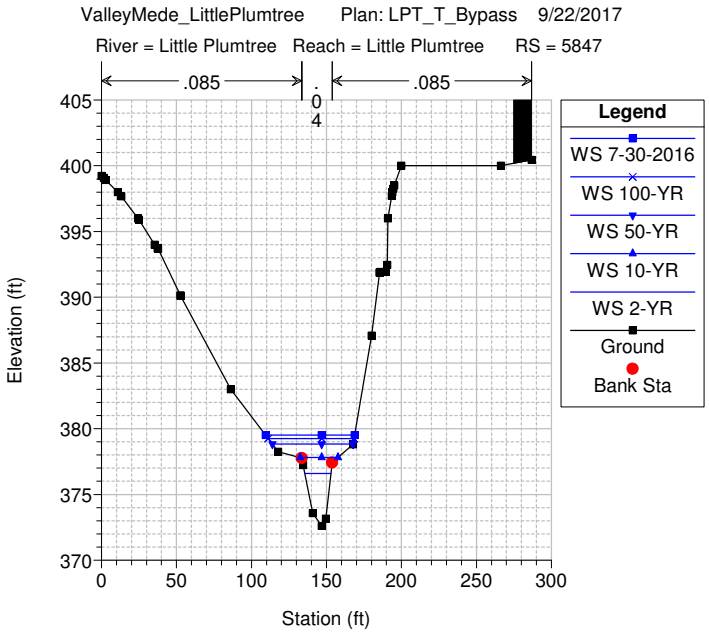
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6045
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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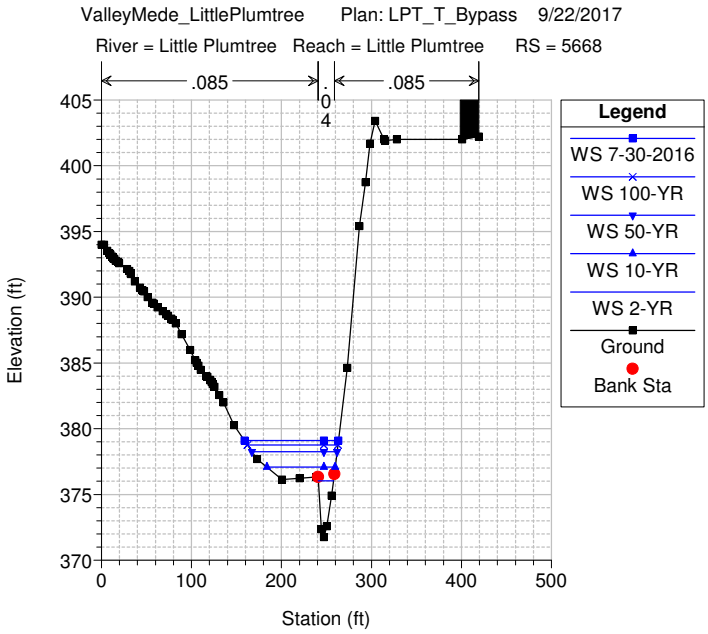
River = Little Plumtree Reach = Little Plumtree RS = 5847
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5668
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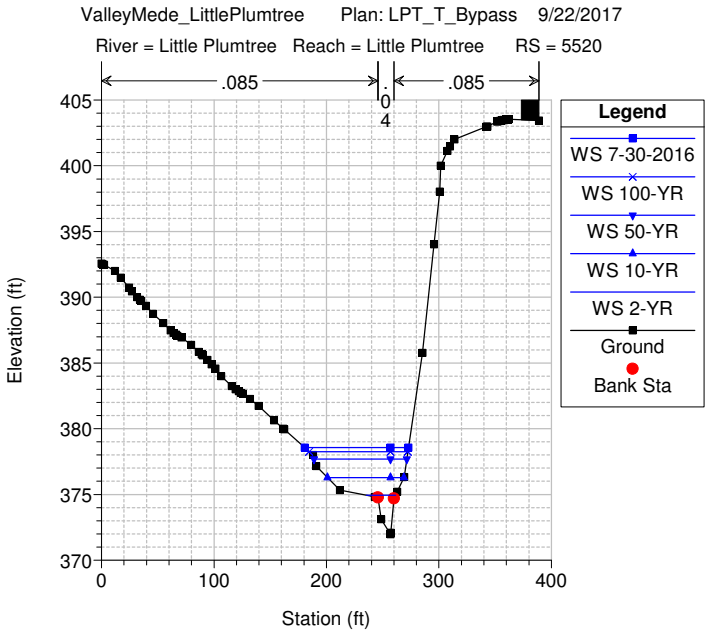
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 5520
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.04
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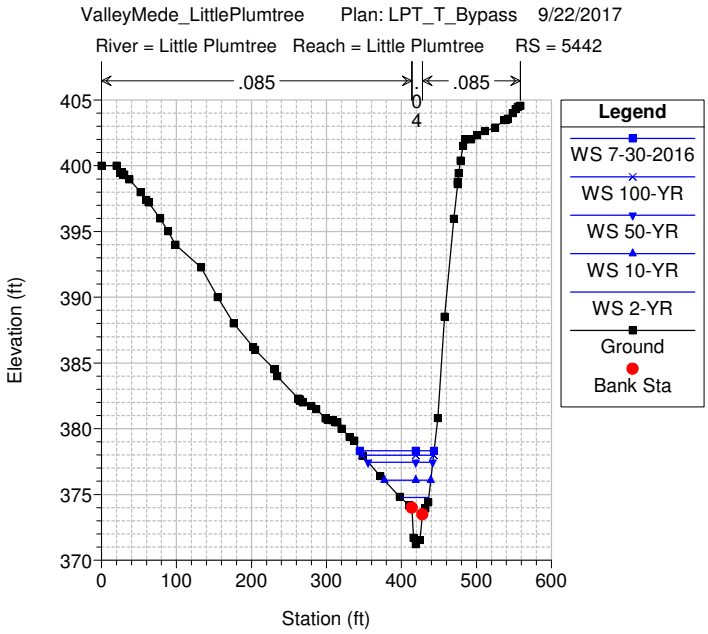
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_T_Bypass 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5442
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
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PROJECT DATA
Project Title: ValleyMede_LittlePlumtree
Project File : ValleyMedeLittlePlumtree.prj
Run Date and Time: 9/22/2017 12:40:49 PM

Project in English units

PLAN DATA

Plan Title: LPT_T_Bypass
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.p04

Geometry Title: Little Plumtree_T_Bypass
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g04

Flow Title : Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Plan Summary Information:
Number of: Cross Sections = 29 Multiple Openings = 0
Culverts = 3 Inline Structures = 0
Bridges = 0 Lateral Structures = 2

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Flow Data (cfs)

River	Reach	RS	2-YR	10-YR	50-YR	100-YR	7-30-2016
Little Plumtree	Little Plumtree	9415	189	397	698	862	945
Little Plumtree	Little Plumtree	7645	190	403	741	927	1058

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Little Plumtree	Little Plumtree	2-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	10-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	50-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	100-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	7-30-2016	Critical	Normal S = 0.00278

GEOMETRY DATA

Geometry Title: Little Plumtree_T_Bypass
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g04

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9415

INPUT
Description:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.12	26.24	402.8	37.49	401.11	45.42	400.62	48.26	399.66
57.81	396.45	62.4	396.28	68.31	398.25	73.47	399.97	90.46	400.81
104.93	402.16	119.34	403.65						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	45.42	.04	73.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.42	73.47	133.08	132.78	133.29	.1 .3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9282

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	35.14	406	35.66	405.94	37.16	405.8	38.48	405.69
39.65	405.61	40.74	405.54	41.04	405.53	43.06	405.42	44.88	405.36
45.26	405.34	49.17	405.25	52.19	405.14	55.17	405.08	56.39	405.02
57.09	404.98	57.75	404.98	60.06	404.81	61.67	404.8	62.71	404.79
69.47	404.07	69.52	404.06	69.61	404.06	70.1	404	73.98	403.56
74.29	403.54	74.75	403.51	76.65	403.33	77.5	403.29	81.52	402.95
87.95	402.58	88.09	402.57	88.21	402.57	118.53	401.16	134.44	399.95
137.69	399.03	137.7	399.03	138.85	398.71	142.58	397.27	143.65	395.11
150.75	395.34	151.63	396.77	158.22	398.18	161.45	398.87	170.55	399.65
181.15	401.18	190.16	401.93	209.71	402.66	209.76	402.66	210.1	402.67
210.35	402.68	210.6	402.68	213.79	402.78	216.31	402.85	218.75	402.92
255.28	404	261.74	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	138.85	.04	161.45	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.85	161.45	61.4	57.86	54.02	.1 .3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	84.3	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9224

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.82	402.69
143.12	402.75	163.4	402.09	174.73	401.46	181.84	399.73	181.86	399.72
187.51	395.32	196.08	395.12	197.79	396.62	203.28	397.38	203.29	397.39
203.77	397.45	211.36	399.8	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	211.36	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
181.84	211.36	128.56	130.35	131.84	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	168.9	401	F
220	321.72	401	F

CULVERT

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9100

INPUT
Description: Ramblewood and N Chatham
Distance from Upstream XS = 38
Deck/Roadway Width = 59
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
170	401	220	401

Upstream Bridge Cross Section Data
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.82	402.69
143.12	402.75	163.4	402.09	174.73	401.46	181.84	399.73	181.86	399.72
187.51	395.32	196.08	395.12	197.79	396.62	203.28	397.38	203.29	397.39
203.77	397.45	211.36	399.8	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	211.36	.065

Bank Sta: Left	Right	Coeff Contr.	Expan.
181.84	211.36	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	168.9	401	F
220	321.72	401	F

Downstream Deck/Roadway Coordinates
num= 2

```
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     100     401             210     401

Downstream Bridge Cross Section Data
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     404   51.12     404   73.72  402.14   74.58  402.06   74.68  402.06
   74.73  402.05    74.8  402.05   74.85  402.04   84.11  401.29   94.67   400.9
   95.13  400.79   103.9  401.19  116.56  401.37  121.51  401.23  133.12  400.48
  139.21  397.91  139.64   397.7  145.48  394.82  155.07   394.9  161.53   398.9
  161.54   398.9  162.31  399.38  169.42  400.29  184.45  400.51  198.05  400.61
  215.34  401.69  221.16     402  228.05  402.64  229.72  402.74  231.21  402.87
  232.43  402.97  234.41  403.11  235.31  403.17  237.42  403.31  244.27  403.66
  244.61  403.68   244.9   403.7  250.59     404  250.91  404.01  250.94  404.02
  256.32  404.26  256.52  404.26  257.04  404.28  261.82   404.5  273.83  405.17
  276.99  405.33  279.05  405.48  281.29  405.64  283.55  405.76   286.4     406
  288.12  406.13  288.52  406.16  293.59  406.53

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   94.67    .025  121.51    .055  139.64    .016  161.53    .055
  169.42    .025  198.05    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        139.64  161.53            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     138     398       F
     162  293.59     398       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     6.1    41.7     410

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                   8      89     .013     .013        0                  .4                1
Upstream   Elevation =  395.73
           Centerline Station =  193
Downstream Elevation =  395.48
           Centerline Station =  150.5

CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        189.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          8.21
  Q Barrel (cfs)            189.00    Culv Vel DS (ft/s)          8.47
  E.G. US. (ft)             399.50    Culv Inv El Up (ft)       395.73
  W.S. US. (ft)             399.39    Culv Inv El Dn (ft)       395.48
  E.G. DS (ft)              397.65    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              396.86    Culv Exit Loss (ft)         1.18
  Delta EG (ft)               1.85    Culv Entr Loss (ft)         0.42
  Delta WS (ft)               2.53    Q Weir (cfs)
  E.G. IC (ft)              399.32    Weir Sta Lft (ft)
  E.G. OC (ft)              399.50    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        398.03    Weir Max Depth (ft)
  Culv WS Outlet (ft)       397.71    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.30    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.23    Min El Weir Flow (ft)     401.01


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        336.34    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          9.80
```

Q Barrel (cfs)	336.34	Culv Vel DS (ft/s)	10.27
E.G. US. (ft)	401.62	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	401.49	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	399.22	Culv Frctn Ls (ft)	0.26
W.S. DS (ft)	398.52	Culv Exit Loss (ft)	1.17
Delta EG (ft)	2.39	Culv Entr Loss (ft)	0.96
Delta WS (ft)	2.97	Q Weir (cfs)	60.66
E.G. IC (ft)	401.62	Weir Sta Lft (ft)	172.05
E.G. OC (ft)	401.47	Weir Sta Rgt (ft)	232.50
Culvert Control	Inlet	Weir Submerg	0.00
Culv WS Inlet (ft)	399.16	Weir Max Depth (ft)	0.68
Culv WS Outlet (ft)	398.76	Weir Avg Depth (ft)	0.52
Culv Nml Depth (ft)	3.45	Weir Flow Area (sq ft)	31.22
Culv Crt Depth (ft)	3.28	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	360.49	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	9.01
Q Barrel (cfs)	360.49	Culv Vel DS (ft/s)	9.01
E.G. US. (ft)	402.53	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.28	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	401.14	Culv Frctn Ls (ft)	0.34
W.S. DS (ft)	400.42	Culv Exit Loss (ft)	0.54
Delta EG (ft)	1.39	Culv Entr Loss (ft)	0.50
Delta WS (ft)	1.86	Q Weir (cfs)	337.51
E.G. IC (ft)	402.47	Weir Sta Lft (ft)	107.81
E.G. OC (ft)	402.53	Weir Sta Rgt (ft)	275.81
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	1.60
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	0.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	122.50
Culv Crt Depth (ft)	3.43	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	294.92	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	7.37
Q Barrel (cfs)	294.92	Culv Vel DS (ft/s)	7.37
E.G. US. (ft)	402.92	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.62	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	402.08	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	401.51	Culv Exit Loss (ft)	0.28
Delta EG (ft)	0.85	Culv Entr Loss (ft)	0.34
Delta WS (ft)	1.11	Q Weir (cfs)	567.08
E.G. IC (ft)	402.73	Weir Sta Lft (ft)	89.87
E.G. OC (ft)	402.92	Weir Sta Rgt (ft)	285.98
Culvert Control	Outlet	Weir Submerg	0.16
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	1.99
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	0.97
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	190.69
Culv Crt Depth (ft)	3.00	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	255.39	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	6.38
Q Barrel (cfs)	255.39	Culv Vel DS (ft/s)	6.38
E.G. US. (ft)	403.07	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.73	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	402.47	Culv Frctn Ls (ft)	0.17
W.S. DS (ft)	402.01	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.59	Culv Entr Loss (ft)	0.25
Delta WS (ft)	0.72	Q Weir (cfs)	689.61
E.G. IC (ft)	402.86	Weir Sta Lft (ft)	81.74
E.G. OC (ft)	403.07	Weir Sta Rgt (ft)	290.31
Culvert Control	Outlet	Weir Submerg	0.32
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	2.15
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	1.07
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	223.70
Culv Crt Depth (ft)	2.73	Min El Weir Flow (ft)	401.01

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9094

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404	51.12	404	73.72	402.14	74.58	402.06	74.68	402.06
74.73	402.05	74.8	402.05	74.85	402.04	84.11	401.29	94.67	400.9
95.13	400.79	103.9	401.19	116.56	401.37	121.51	401.23	133.12	400.48
139.21	397.91	139.64	397.7	145.48	394.82	155.07	394.9	161.53	398.9
161.54	398.9	162.31	399.38	169.42	400.29	184.45	400.51	198.05	400.61
215.34	401.69	221.16	402	228.05	402.64	229.72	402.74	231.21	402.87
232.43	402.97	234.41	403.11	235.31	403.17	237.42	403.31	244.27	403.66
244.61	403.68	244.9	403.7	250.59	404	250.91	404.01	250.94	404.02
256.32	404.26	256.52	404.26	257.04	404.28	261.82	404.5	273.83	405.17
276.99	405.33	279.05	405.48	281.29	405.64	283.55	405.76	286.4	406
288.12	406.13	288.52	406.16	293.59	406.53				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	94.67	.025	121.51	.055	139.64	.016	161.53	.055
169.42	.025	198.05	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
139.64	161.53	57.37	60.69	64.17	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	138	398	F
162	293.59	398	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
6.1	41.7	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9033

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404	54.52	404	73.75	402.26	75.58	402.09	75.64	402.08
75.71	402.08	75.76	402.07	91.39	400.68	91.77	400.49	102.07	400.62
111.47	400.85	112.04	401.3	118.01	401.21	126.27	399.38	131.85	396.43
131.86	396.42	132.13	396.28	135.54	394.33	143.52	394.25	146.97	396.1
151.92	398.65	152.18	398.79	157.76	399.84	162.63	400.24	168.26	400.49
168.8	400.26	177.99	400.05	187.01	399.75	187.54	400.09	195.78	400.92
195.83	400.93	196.85	401.14	210.93	404	212.97	404.31	215.23	404.58
220.35	405.21	226.57	406	263.3	406	266.2	406.17		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	91.39	.025	118.01	.055	132.13	.016	146.97	.055
162.63	.025	187.54	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
132.13	146.97	96.95	94.72	92.33	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
222.5	266.2	410	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
12.8	42.2	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8938

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406.83	25.54	406	68.91	406	69.17	405.97	69.26	405.96
74.09	405.46	76.78	405.18	79.77	404.86	87.76	404	88.56	403.9

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   90.95   403.6   99.23  402.55  100.92  402.33  101.42  402.26  107.11   401.8
  107.69  401.77  107.71  401.77   107.8  401.76  107.85  401.76  120.05  400.14
  126.04  399.87  126.55  399.66  135.93  399.95  144.47  400.28  145.09  400.64
  151.45  400.71  160.73  398.11  162.66  397.11  162.67  397.11  165.14  395.84
  168.52     394  176.28  393.85  179.62  395.83  182.69  396.99  187.03  398.62
  195.68  399.85  201.07  400.07  201.66   399.8   209.6  399.64   220.7  399.42
   221.2  399.78  228.33  399.83  228.38  399.84  229.28  399.98  241.94     402
  244.19  402.33   245.2  402.41  256.53  403.57  260.47     404  263.82  404.49
   264.1   404.5  265.84  404.75  266.21  404.74  266.51  404.74  269.44  405.12
   281.2     406  307.11     406

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  120.05    .025  151.45    .055  165.14    .016  179.62    .055
  195.68    .025   221.2    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        165.14  179.62           163.23  161.92  160.75             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
   273.6  306.99     410       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    14.5    53.7     410

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8776

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  404.02     .32     404   48.65     404   62.12   402.5   66.46     402
   80.78  400.01   80.88     400   80.94  399.99   83.05  399.69   85.75   399.3
   85.97  399.27   86.02  399.26   94.56  398.79      95  398.66   104.7  398.95
  112.97  399.21  113.61  399.61  119.65  399.47  128.08  397.38  132.67  395.23
  133.23  394.97  136.73  393.04  144.47  392.95  148.08  394.88  152.66  396.57
  152.67  396.58  156.39  397.95  164.19  398.93  169.62  399.23  170.14  399.01
  178.25  398.86  189.11  398.71  206.52  402.51  206.57  402.53  206.77   402.6
  206.99  402.68  207.26  402.78  208.93  403.39  216.05     406  217.54  406.42
  223.17     408  228.58  408.88  230.19  409.09  233.25  409.56  237.39     410
  260.55     410

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   94.56    .025  119.65    .055  133.23    .016  148.08    .055
  164.19    .025  189.11    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        133.23  148.08           150.65  147.84  144.92             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     5.3    36.7     410   242.6  260.55     415

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8628

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     400   43.24     400   67.19  398.75   67.49  398.74   67.73  398.73
   68.24   398.7   68.32  398.69   68.41  398.69   68.68  398.67   68.77  398.67
   85.99  397.88   92.07  397.58   92.45   397.4  102.08  397.51  110.87  397.66
  111.48     398  117.04  397.75  126.38   395.5  129.16  394.42  130.11  394.05
  133.66  391.99  141.81  392.03  145.69   394.2  149.16  395.59  151.61  396.57
  162.06  397.95  167.53  398.25  167.98  397.98  177.17  397.66  186.26  397.42
  186.67  397.61  193.56  398.98  193.62     399  193.64     399  196.35  399.64
  206.39     402  212.11  403.16  216.57     404  219.52  404.54  220.37  404.68
  222.85  405.11   224.3  405.34  225.44  405.53  227.17  405.78  227.52  405.83
  228.81     406  230.99  406.22  232.36  406.33  232.68  406.36  235.09  406.54
  237.05  406.66  237.73  406.69  238.84  406.74  239.66  406.76  241.98  406.81
  242.96  406.84  244.55  406.85  245.61  406.87  247.83  406.87  249.36  406.86
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  249.93  406.85  251.39  406.82  252.48   406.8   254.7  406.71  255.71  406.68
   257.9  406.57  260.13  406.42  260.76  406.39  261.31  406.36  262.94  406.24

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   92.07    .025  117.04    .055  130.11    .016  145.69    .055
  162.06    .025  186.67    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.11  145.69           174.55  169.35  164.24             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     2.3    34.3     408   248.8  262.94     408

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8459

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     400    9.36     400   19.64  399.33   21.18  399.35   21.52  399.32
   24.66  399.35   25.01  399.32   25.43  399.29    27.8  399.31   29.23  399.19
    31.5  399.19   32.66  399.09   33.88     399   37.04  398.98   37.68  398.93
   38.41  398.88    40.3  398.84   41.85  398.75   42.89  398.71   46.29  398.53
   46.67  398.51   47.01  398.49   52.88  398.19   53.02  398.18   53.15  398.17
   55.56  398.02   55.82     398   62.38  397.62   63.06  397.58   63.09  397.58
   63.13  397.57   63.45  397.55    63.5  397.55   63.56  397.54   70.83   396.9
   74.37  396.43   74.76  396.35   84.77  396.45   93.28  396.59   93.77   396.9
   99.65  396.57  109.58   394.6  111.17  393.84  116.68  391.22  127.02  391.25
  131.21  393.31   133.8  394.59  144.34  396.93  149.92  397.28  150.64  396.93
  159.51  396.62  169.28  396.29  183.57  398.17  183.62  398.18  183.63  398.18
  185.91  398.46  197.93     400  208.17     400  236.83  400.54

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   74.37    .025   99.65    .055  111.17    .016  131.21    .055
  144.34    .025  169.28    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        111.17  131.21           130.02  130.06   129.9             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
       0    31.8     405          F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   225.5  236.83     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8329

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  404.45      .1  404.44   10.11     404   11.46  403.88   12.95  403.74
   23.76  402.76   32.08     402   49.55  400.47   55.09     400   63.11  399.38
   68.27  398.99    69.9  398.87   74.31  398.54   76.69  398.38    77.2  398.34
   77.57  398.32    78.2  398.29   81.68     398    89.2  397.56   91.32  397.42
   102.6  396.76  105.56  396.59  106.64  396.53  110.81  396.35  111.74  396.34
  112.73  396.21  114.11  396.05  114.19  396.05  114.63     396  120.71     396
  123.02  395.96  125.61  395.91  125.66  395.91  145.26  395.65  156.65  395.61
  164.77  395.63  165.48  396.09  171.49  395.76   181.7  393.87  184.07  392.66
  184.08  392.65  188.11   390.6  199.42  390.59  204.09  392.91   204.1  392.92
   205.9  393.81  215.33  395.81  220.73  396.05  221.25   395.7  231.82  395.42
  240.94  395.26  241.45  395.36  245.66  395.51  245.71  395.51  250.67     396
  286.88     396  288.42  396.08  290.22  396.18  290.58  396.19  292.31  396.28
  292.84  396.29  311.28  397.09   313.1  397.11  313.59  397.13  315.42  397.14
  315.88  397.16  354.04     398  363.84     398  390.19  399.04  413.91     400
  415.45     400  418.67  400.26  421.83  400.42  424.26  400.59  428.97  400.87

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
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      0    .025  171.49    .055  184.08    .016  204.09    .055  215.33    .025
  241.45    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        184.08  204.09              163  162.96  163.01             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8166

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  407.18   10.95  406.06   11.43     406   24.94     404   31.24   403.5
   51.13     402   58.41  401.57   61.68  401.44   67.96  401.12   70.57  401.01
    75.8  400.78   92.43     400   95.26  399.73   97.88   399.5  116.77  398.02
  123.11  397.34  130.08  396.64  136.18     396  143.43  395.41  151.49  394.83
   156.8  394.67  157.23  394.43   167.2  394.49  175.42  394.64  175.99  395.07
  182.18  394.56  192.61  393.19   195.6  391.81  195.62  391.81  199.52  390.01
  209.72   389.9  215.63   392.6  216.91  393.19  226.27  394.79  232.22  395.11
  232.69  394.84  241.53  394.73  249.43  394.38  250.11  394.19  251.06  394.19
  251.58  394.34  263.46   394.7  306.44     396  310.24  396.14   314.3  396.27
  317.64  396.36  320.99  396.42  337.89  397.34   339.6  397.39  346.22     398
  352.09  399.29  355.26     400  359.79  401.05  364.78  402.01  371.43  402.81
  372.98  402.97  381.44  403.94  381.92     404  395.38  404.92  403.91   405.1
  407.31  405.27  413.83  405.43  427.96     406  430.31     406  432.23  406.23
  432.81  406.28  436.23   406.7  436.99  406.75  439.03     407  441.12  407.13
  448.98     408  457.02     408  458.29  408.06  474.42  408.42

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   156.8    .025  182.18    .055   195.6    .016  215.63    .055
  226.27    .025  251.58    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         195.6  215.63           156.55  156.02  156.27             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   439.1  474.42     410

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8010

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  402.55     7.4  402.14   36.62     400   58.24     398   76.34  397.19
    80.9  397.04  106.18     396  109.51  395.67  113.88  395.49  116.92   395.3
  123.63  395.35  126.43  395.11  130.93   395.1  131.95  395.05  137.04   395.1
  139.18  395.28  143.21  395.28  150.26     396  167.06     396  172.85  395.46
  177.16  395.09  177.83  394.49  188.81  394.76  196.75  394.99   197.4  395.47
  203.61  395.65  210.06  395.31  215.11  392.67  215.13  392.66  218.44  390.93
  224.05  389.05  227.47  388.95   234.6   391.6   235.2  391.88  241.59  394.82
  247.16  395.46  254.01  395.47   254.7  394.99  273.39  394.47  274.44  394.98
  276.64   395.3  280.47  395.38  285.76  395.58  293.73  391.98  300.77     390
  303.67     390  307.27  390.56  313.51     392  315.93   392.9   318.7     394
  327.82  395.21  342.23  397.21  347.44     398  348.71  398.27  358.84     400
   372.9  401.61  377.47     402  379.02  402.29  380.27  402.43  382.86  402.88
  384.55  403.06  385.41  403.22  389.98   403.8  394.72  404.54  404.52     406
  423.74     408  438.67     410  439.79     410  449.95  410.67  481.28  412.56

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  177.16    .025  210.06    .055  218.44    .016   234.6    .055
  247.16    .025  280.47    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        218.44   234.6            48.73   88.82  110.46             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  285.69   330.5  395.58       F
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CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7921

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.27	2.35	402.24	9.79	402.05	10.85	402	23.33	401.47
24.1	401.44	27.36	401.31	30.17	401.2	32.12	401.15	36.66	401.01
38.26	400.95	41.05	400.83	41.66	400.81	44.82	400.66	48.42	400.48
48.82	400.46	50.4	400.37	53.99	400.16	56.46	400	70.05	398.87
80.48	398	83.88	397.75	84.92	397.69	92.06	397.18	95.78	397
101.94	396.67	104.07	396.53	114.28	396	117.76	395.27	119.5	394.95
120.43	394.79	123.54	394.3	125.57	394	134.73	392.71	138.15	392.29
140.39	392	165.14	392	168.49	393.04	169.81	393.46	171.33	394
172.39	394.09	179.24	395.77	183.72	396.33	184.12	396.38	195.25	395.89
202.88	395.48	203.82	394.92	215.26	395.27	224.99	395.56	225.75	395.99
232.65	396.14	238.38	397.12	239	397.24	239.31	394.03	244.85	391.38
248.52	389.63	258.97	388.63	274.93	387.21	296.02	387.72	304.27	388.31
304.29	388.31	316.38	389.18	330.87	391.74	340.26	394.76	347.34	397.29
351.54	397.3	361.79	398.12	375.83	398.18	383.29	398.14	384.03	397.63
396.44	397.32	411.59	396.99	412.44	397.58	415.27	397.7	420.29	397.87
432.07	398.45								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	202.88	.025	232.65	.055	248.52	.016	316.38	.075
375.83	.025	420.29	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
248.52	316.38	168.2	186.1	189.78	.3	.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
107.24	184.19	396.379	F
184.19	248	397.12	F
317	432.07	397.12	F

CULVERT

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7800

INPUT
Description: N Chatham
Distance from Upstream XS = 26.8
Deck/Roadway Width = 53.5
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
238.39	397.12	347.34	397.29

Upstream Bridge Cross Section Data
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.27	2.35	402.24	9.79	402.05	10.85	402	23.33	401.47
24.1	401.44	27.36	401.31	30.17	401.2	32.12	401.15	36.66	401.01
38.26	400.95	41.05	400.83	41.66	400.81	44.82	400.66	48.42	400.48
48.82	400.46	50.4	400.37	53.99	400.16	56.46	400	70.05	398.87
80.48	398	83.88	397.75	84.92	397.69	92.06	397.18	95.78	397
101.94	396.67	104.07	396.53	114.28	396	117.76	395.27	119.5	394.95
120.43	394.79	123.54	394.3	125.57	394	134.73	392.71	138.15	392.29
140.39	392	165.14	392	168.49	393.04	169.81	393.46	171.33	394
172.39	394.09	179.24	395.77	183.72	396.33	184.12	396.38	195.25	395.89
202.88	395.48	203.82	394.92	215.26	395.27	224.99	395.56	225.75	395.99
232.65	396.14	238.38	397.12	239	397.24	239.31	394.03	244.85	391.38
248.52	389.63	258.97	388.63	274.93	387.21	296.02	387.72	304.27	388.31
304.29	388.31	316.38	389.18	330.87	391.74	340.26	394.76	347.34	397.29
351.54	397.3	361.79	398.12	375.83	398.18	383.29	398.14	384.03	397.63
396.44	397.32	411.59	396.99	412.44	397.58	415.27	397.7	420.29	397.87
432.07	398.45								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	202.88	.025	232.65	.055	248.52	.016	316.38	.075

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  375.83    .025  420.29    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        248.52  316.38            .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
  107.24  184.19 396.379       F
  184.19     248  397.12       F
     317  432.07  397.12       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   62.45  396.84          215.18  395.36

Downstream Bridge Cross Section Data
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   396.3   17.79  396.58   44.54  396.75   56.45  397.15   62.45  396.84
   74.23  392.93   81.72  390.86   91.42  389.84   100.1  389.46  100.11  389.46
  111.61  388.95  133.43  388.16  148.98  387.75  150.92   386.4  159.56  386.53
  161.02  387.98  166.33  387.83  177.83  388.51  179.97  388.75  186.19  389.45
  198.02  393.01  215.18  395.36  227.49   394.9   228.3  394.28  238.98  394.39
  254.49   394.4  272.22  394.34  289.78  393.96     306  393.51  306.75  394.09
  309.11  394.26  310.38  394.33  310.44  394.34  310.51  394.34  324.13  394.65
  362.24     396  364.63  396.25  381.06     398  387.94  398.65  402.16     400

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  133.43     .04  177.83    .055  227.49    .025  310.38    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        133.43  215.18            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     130  395.36       F
     179  402.16  395.36       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch     6.5    9.23
FHWA Chart # 36- 31 inch corner radius; Corrugated metal
FHWA Scale # 2 - No bevels
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                12     110     .024     .024        0                  .9               1
Upstream   Elevation =  387.69
           Centerline Station =  274
Downstream Elevation =  387.21
           Centerline Station =  150

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch     6.5    9.23
FHWA Chart # 36- 31 inch corner radius; Corrugated metal
FHWA Scale # 2 - No bevels
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                12     110     .024     .024        0                  .9               1
Upstream   Elevation =  387.1
           Centerline Station =  284
Downstream Elevation =  386.26
           Centerline Station =  160

CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         83.87    Culv Full Len (ft)
  # Barrels                     1    Culv Vel US (ft/s)          2.66
  Q Barrel (cfs)             83.87    Culv Vel DS (ft/s)          2.24
  E.G. US. (ft)             390.57    Culv Inv El Up (ft)       387.69
  W.S. US. (ft)             390.55    Culv Inv El Dn (ft)       387.21
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E.G. DS (ft)	390.36	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	390.33	Culv Exit Loss (ft)	0.04
Delta EG (ft)	0.21	Culv Entr Loss (ft)	0.10
Delta WS (ft)	0.23	Q Weir (cfs)	
E.G. IC (ft)	389.58	Weir Sta Lft (ft)	
E.G. OC (ft)	390.58	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.37	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.33	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.68	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.36	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	184.21	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.18
Q Barrel (cfs)	184.21	Culv Vel DS (ft/s)	3.84
E.G. US. (ft)	391.87	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	391.83	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	391.32	Culv Frctn Ls (ft)	0.26
W.S. DS (ft)	391.23	Culv Exit Loss (ft)	0.14
Delta EG (ft)	0.55	Culv Entr Loss (ft)	0.24
Delta WS (ft)	0.60	Q Weir (cfs)	
E.G. IC (ft)	390.74	Weir Sta Lft (ft)	
E.G. OC (ft)	391.88	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.37	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.23	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.69	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.06	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	331.13	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.04
Q Barrel (cfs)	331.13	Culv Vel DS (ft/s)	5.87
E.G. US. (ft)	393.46	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	393.40	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	392.25	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	392.08	Culv Exit Loss (ft)	0.36
Delta EG (ft)	1.21	Culv Entr Loss (ft)	0.51
Delta WS (ft)	1.32	Q Weir (cfs)	
E.G. IC (ft)	392.22	Weir Sta Lft (ft)	
E.G. OC (ft)	393.47	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	392.39	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.08	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.09	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.00	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	412.52	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.94
Q Barrel (cfs)	412.52	Culv Vel DS (ft/s)	6.91
E.G. US. (ft)	394.32	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	394.26	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	392.67	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	392.44	Culv Exit Loss (ft)	0.52
Delta EG (ft)	1.66	Culv Entr Loss (ft)	0.67
Delta WS (ft)	1.82	Q Weir (cfs)	
E.G. IC (ft)	392.98	Weir Sta Lft (ft)	
E.G. OC (ft)	394.31	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	392.89	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.44	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	5.06	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.26	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	459.54	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.38
Q Barrel (cfs)	459.54	Culv Vel DS (ft/s)	7.45
E.G. US. (ft)	394.85	Culv Inv El Up (ft)	387.69

W.S. US. (ft)	394.78	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	392.93	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	392.68	Culv Exit Loss (ft)	0.62
Delta EG (ft)	1.92	Culv Entr Loss (ft)	0.76
Delta WS (ft)	2.10	Q Weir (cfs)	
E.G. IC (ft)	393.44	Weir Sta Lft (ft)	
E.G. OC (ft)	394.84	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	393.23	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.68	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	6.50	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.51	Min El Weir Flow (ft)	396.38

Note: The normal depth exceeds the height of the culvert. The program assumes that the normal depth is equal to the
height of the culvert.

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	105.13	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	2.68
Q Barrel (cfs)	105.13	Culv Vel DS (ft/s)	2.18
E.G. US. (ft)	390.57	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	390.55	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	390.36	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	390.33	Culv Exit Loss (ft)	0.04
Delta EG (ft)	0.21	Culv Entr Loss (ft)	0.10
Delta WS (ft)	0.23	Q Weir (cfs)	
E.G. IC (ft)	389.25	Weir Sta Lft (ft)	
E.G. OC (ft)	390.56	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.35	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.33	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.63	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.53	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	212.79	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.26
Q Barrel (cfs)	212.79	Culv Vel DS (ft/s)	3.71
E.G. US. (ft)	391.87	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	391.83	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	391.32	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	391.23	Culv Exit Loss (ft)	0.13
Delta EG (ft)	0.55	Culv Entr Loss (ft)	0.25
Delta WS (ft)	0.60	Q Weir (cfs)	
E.G. IC (ft)	390.45	Weir Sta Lft (ft)	
E.G. OC (ft)	391.86	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.32	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.23	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.47	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.25	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	366.87	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.14
Q Barrel (cfs)	366.87	Culv Vel DS (ft/s)	5.68
E.G. US. (ft)	393.46	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	393.40	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	392.25	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	392.08	Culv Exit Loss (ft)	0.33
Delta EG (ft)	1.21	Culv Entr Loss (ft)	0.53
Delta WS (ft)	1.32	Q Weir (cfs)	
E.G. IC (ft)	391.95	Weir Sta Lft (ft)	
E.G. OC (ft)	393.45	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	392.34	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.08	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.55	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.19	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	449.48	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.98
Q Barrel (cfs)	449.48	Culv Vel DS (ft/s)	6.79
E.G. US. (ft)	394.32	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	394.26	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	392.67	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	392.44	Culv Exit Loss (ft)	0.49
Delta EG (ft)	1.66	Culv Entr Loss (ft)	0.68
Delta WS (ft)	1.82	Q Weir (cfs)	
E.G. IC (ft)	392.74	Weir Sta Lft (ft)	
E.G. OC (ft)	394.33	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	392.90	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.44	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.19	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.46	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	485.46	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.33
Q Barrel (cfs)	485.46	Culv Vel DS (ft/s)	7.22
E.G. US. (ft)	394.85	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	394.78	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	392.93	Culv Frctn Ls (ft)	0.41
W.S. DS (ft)	392.68	Culv Exit Loss (ft)	0.57
Delta EG (ft)	1.92	Culv Entr Loss (ft)	0.75
Delta WS (ft)	2.10	Q Weir (cfs)	
E.G. IC (ft)	393.09	Weir Sta Lft (ft)	
E.G. OC (ft)	394.86	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	393.27	Weir Max Depth (ft)	
Culv WS Outlet (ft)	392.68	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.48	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.65	Min El Weir Flow (ft)	396.38

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7735

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.3	17.79	396.58	44.54	396.75	56.45	397.15	62.45	396.84
74.23	392.93	81.72	390.86	91.42	389.84	100.1	389.46	100.11	389.46
111.61	388.95	133.43	388.16	148.98	387.75	150.92	386.4	159.56	386.53
161.02	387.98	166.33	387.83	177.83	388.51	179.97	388.75	186.19	389.45
198.02	393.01	215.18	395.36	227.49	394.9	228.3	394.28	238.98	394.39
254.49	394.4	272.22	394.34	289.78	393.96	306	393.51	306.75	394.09
309.11	394.26	310.38	394.33	310.44	394.34	310.51	394.34	324.13	394.65
362.24	396	364.63	396.25	381.06	398	387.94	398.65	402.16	400

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	133.43	.04	177.83	.055	227.49	.025	310.38	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
133.43	215.18	142.82	90.04	69.09	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	130	395.36	F
179	402.16	395.36	F

LATERAL STRUCTURE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7717

INPUT
Description: N Chatham Overflow
Lateral structure position = Next ot right bank station
Distance from Upstream XS =

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Deck/Roadway Width        =       2
Weir Coefficient          =       2
Weir Flow Reference       = Water Surface
 Weir Embankment Coordinates    num =        5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     -50  395.36   39.54  393.75  124.15  392.21  186.01   391.2     247   390.9

Weir crest shape                          = Broad Crested


Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       5
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Inlet control
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                       2000     .013     .013        0                  .5                1
Upstream   Elevation =  388
           Centerline Station =  0
Downstream Elevation =  360
           Centerline Station =  50

LATERAL STRUCTURE OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  E.G. US. (ft)                390.36    Weir Sta US (ft)
  W.S. US. (ft)                390.32    Weir Sta DS (ft)
  E.G. DS (ft)                 389.92    Min El Weir Flow (ft)         390.90
  W.S. DS (ft)                 389.90    Wr Top Wdth (ft)
  Q US (cfs)                   189.00    Weir Max Depth (ft)
  Q Leaving Total (cfs)         33.46    Weir Avg Depth (ft)
  Q DS (cfs)                   156.54    Weir Flow Area (sq ft)
  Perc Q Leaving                17.70    Weir Coef (ft^1/2)             0.000
  Q Weir (cfs)                   0.00    Weir Submerg
  Q Gates (cfs)
  Q Culv (cfs)                  33.46    Q Culv Group (cfs)             33.46
  Q Lat RC (cfs)                         # Barrels                          1
  Q Outlet TS (cfs)              0.00    Culv Length (ft)             2000.00
  Q Breach (cfs)                         Culv Depth Blocked (ft)
  Breach Avg Velocity (ft/s)             Culv Inv El Up (ft)           388.00
  Breach Flow Area (sq ft)               Culv Inv El Dn (ft)           360.00
  Breach WD (ft)
  Breach Top El (ft)
  Breach Bottom El (ft)
  Breach SSL (ft)
  Breach SSR (ft)


LATERAL STRUCTURE OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  E.G. US. (ft)                391.32    Weir Sta US (ft)
  W.S. US. (ft)                391.23    Weir Sta DS (ft)
  E.G. DS (ft)                 390.64    Min El Weir Flow (ft)         390.90
  W.S. DS (ft)                 390.60    Wr Top Wdth (ft)
  Q US (cfs)                   397.00    Weir Max Depth (ft)
  Q Leaving Total (cfs)         58.73    Weir Avg Depth (ft)
  Q DS (cfs)                   345.31    Weir Flow Area (sq ft)
  Perc Q Leaving                14.53    Weir Coef (ft^1/2)             0.000
  Q Weir (cfs)                   0.00    Weir Submerg
  Q Gates (cfs)
  Q Culv (cfs)                  58.73    Q Culv Group (cfs)             58.73
  Q Lat RC (cfs)                         # Barrels                          1
  Q Outlet TS (cfs)              0.00    Culv Length (ft)             2000.00
  Q Breach (cfs)                         Culv Depth Blocked (ft)
  Breach Avg Velocity (ft/s)             Culv Inv El Up (ft)           388.00
  Breach Flow Area (sq ft)               Culv Inv El Dn (ft)           360.00
  Breach WD (ft)
  Breach Top El (ft)
  Breach Bottom El (ft)
  Breach SSL (ft)
  Breach SSR (ft)


LATERAL STRUCTURE OUTPUT  Profile #50-YR  Culv Group:  Culvert #1

  E.G. US. (ft)                392.25    Weir Sta US (ft)              186.01
  W.S. US. (ft)                392.08    Weir Sta DS (ft)              247.00
  E.G. DS (ft)                 391.13    Min El Weir Flow (ft)         390.90
```

W.S. DS (ft)	391.05	Wr Top Wdth (ft)	38.55
Q US (cfs)	698.00	Weir Max Depth (ft)	0.15
Q Leaving Total (cfs)	85.86	Weir Avg Depth (ft)	0.07
Q DS (cfs)	656.54	Weir Flow Area (sq ft)	2.82
Perc Q Leaving	12.10	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	1.72	Weir Submerg	0.00
Q Gates (cfs)			
Q Culv (cfs)	84.14	Q Culv Group (cfs)	84.14
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2000.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	388.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	360.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Culv Group: Culvert #1

E.G. US. (ft)	392.66	Weir Sta US (ft)	124.15
W.S. US. (ft)	392.44	Weir Sta DS (ft)	247.00
E.G. DS (ft)	391.32	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	391.23	Wr Top Wdth (ft)	67.81
Q US (cfs)	862.00	Weir Max Depth (ft)	0.33
Q Leaving Total (cfs)	108.21	Weir Avg Depth (ft)	0.20
Q DS (cfs)	817.75	Weir Flow Area (sq ft)	13.79
Perc Q Leaving	12.67	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	13.20	Weir Submerg	0.00
Q Gates (cfs)			
Q Culv (cfs)	95.01	Q Culv Group (cfs)	95.01
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2000.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	388.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	360.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

E.G. US. (ft)	392.92	Weir Sta US (ft)	124.15
W.S. US. (ft)	392.68	Weir Sta DS (ft)	247.00
E.G. DS (ft)	391.45	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	391.35	Wr Top Wdth (ft)	75.17
Q US (cfs)	945.00	Weir Max Depth (ft)	0.45
Q Leaving Total (cfs)	127.55	Weir Avg Depth (ft)	0.29
Q DS (cfs)	930.04	Weir Flow Area (sq ft)	22.15
Perc Q Leaving	13.54	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	25.39	Weir Submerg	0.00
Q Gates (cfs)			
Q Culv (cfs)	102.16	Q Culv Group (cfs)	102.16
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2000.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	388.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	360.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7645

INPUT
Description:
Station Elevation Data   num=   61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.02	4.94	394	10.64	393.74	10.96	393.73	15.06	393.54
15.59	393.52	17.34	393.44	18.71	393.39	49.35	392.967	57.1	392.86
66.29	390.32	77.21	389.99	93.33	389.71	104.18	390.05	105.31	389.72
111.39	387.95	114.49	386.68	118.37	386.41	125.33	389.1	127.91	390.1
143.93	391.75	153.06	392.71	168.44	393.75	177.22	393.47	177.5	393.47
223.31	393.03	223.82	393.02	233.1	393.29	233.46	393.29	236.26	393.4
238.69	393.5	238.95	393.5	244.54	393.77	244.67	393.77	245.96	393.83
247.21	393.88	251.47	394	254.69	394.09	255.85	394.13	255.98	394.14
257.17	394.2	257.4	394.22	257.65	394.24	258.72	394.31	259.55	394.37
260.71	394.46	261.77	394.54	264.41	394.72	281.83	396	291.62	396.82
297.74	397.33	301.31	397.63	305.66	398	307.68	398.37	308.27	398.49
309.55	398.75	313.77	399.57	315.97	400	317.17	400.15	321.34	400.67
323.25	400.9								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	49.35	.075	104.18	.04	127.91	.055	177.22	.025
236.26	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.18	168.44	85.44	84.61	84.17	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7560

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398	13.16	398	16.3	397.86	18.69	397.75	21.57	397.62
52.62	396	54.72	396	77.17	394	88.58	392.95	92.96	392.55
99.27	392.07	99.47	392.05	100.16	392	114.95	390.39	115.47	390.33
122.74	389.56	134.6	389.13	140.5	389.75	150.4	389.33	151.86	389.98
153.73	389.71	154.61	389.59	157.9	388.19	158.89	386.17	161.21	385.7
165.61	386.15	169.3	388.27	173.13	388.38	174.07	388.45	174.09	388.45
180.17	388.9	196.18	390.45	213.33	392.2	229.1	392.21	233.65	391.75
234.4	391.16	235.56	391.26	237.87	391.3	278.66	391.93	278.71	391.92
279.16	391.98	279.36	392	282.97	392	285.84	391.69	286.14	391.65
288.03	391.47	288.42	391.42	290.38	391.27	290.86	391.23	293.03	391.1
293.77	391.08	295.03	391.06	295.75	391.07	296.26	391.1	297	391.13
297.79	391.21	298.72	391.34	299.12	391.38	300.22	391.58	301.48	391.83
302.25	392	303.24	392.23	305.23	392.71	308.78	393.64	309.52	393.84
310.08	394	324.25	395.81	325.8	396	345.06	398	345.97	398.2
346.5	398.32	349.1	398.9	354.1	400	361.13	401.05	366.82	402

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	157.9	.04	169.3	.055	234.4	.025	278.71	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
157.9	213.33	62.59	61.86	60.62	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
282.96	302.26	392	T

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	32.9	400

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7499

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.55	9.17	397.27	24.09	396.85	29.99	396.7	33.44	396.57
39.96	396.38	49.86	396	52.49	396	55.42	395.85	56.63	395.81
58.3	395.73	60.74	395.64	64.59	395.46	66.9	395.37	70.43	395.2
89.36	394.57	93.12	394.44	106.41	393.95	123.58	393.69	124.46	393.7
128.86	393.64	136.64	393.51	140.68	393.47	147.39	393.47	148.97	393.45
155.58	393.5	161.68	393.48	162.44	393.46	164.58	393.44	170.22	393.22
181.89	392.72	201.39	392	217.03	390	224.47	389.79	236.8	388.86

```
  248.34  388.61  264.24  389.13  276.64  389.89  280.11  387.94  283.32  387.81
     287  387.66  292.53  387.02   293.3  385.99  296.46  385.87   300.8  385.88
  302.11  388.06  303.42  388.47  303.43  388.47  304.28  388.74  309.18  388.83
   317.6  390.64  326.22   391.2  334.94  390.92  335.64  390.24  344.52  390.57
   373.6 390.177  386.74     390  388.74   388.5  406.08   388.5  408.08     390
  413.69  392.08  415.28  392.61  419.37     394  422.85  394.56  430.78     396
  436.98  396.71  449.57     398  458.27  399.13   461.4  399.37  463.76  399.64
  467.25  399.79  467.61  399.83  469.29  399.93  472.83     400

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  181.89    .055     287     .04  302.11    .055  334.94    .025
   373.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           287  326.22            62.52   61.98   61.21             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  386.59  408.08     390       T

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7437

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  396.86    34.9     396    37.3     396   65.79  394.99   72.05   394.7
   75.42  394.61   78.52  394.43   79.74  394.41  120.94     392  136.04  391.37
  155.34  390.47  159.88  390.33  181.12  390.01  191.93  390.17  197.52   390.2
  205.41  390.17  210.12  390.23  222.25  390.79   231.8  390.65  235.24   390.8
   239.5  390.72   242.6  390.51   243.7  393.81  244.38  393.85  244.52  393.29
   252.3  393.97  265.38  393.16  272.52  391.32  282.48  390.12  291.46  388.97
  291.48  388.96  293.97  388.64  295.61  384.71  296.77  385.07   298.3   384.3
  298.98  384.16  301.25  384.19  305.22  384.12  308.47   383.8  309.04  384.54
  315.03  386.16  316.94  386.68   328.9   390.9  343.15  390.83  353.17  390.51
  353.89  389.87  355.55  389.89  373.23  390.07  390.11     390  403.96     390
  407.91  389.06  411.03  388.51  411.66  388.45  414.31     388  418.89     388
   423.5  388.96  423.78  388.99  427.54     390  430.04  391.02  432.84     392
  437.06  393.18  439.65     394   455.4     396  464.83  396.74  470.72  397.12
  472.23  397.16   478.3  397.45  483.36   397.5  496.04   397.8   500.1     398
  505.53  398.38  519.88  399.49  524.94  399.82     529     400

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  244.52    .055  296.77     .04  315.03    .055  353.17    .025
  390.11    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        293.97   328.9             78.48   78.48   79.28             .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0     292  390.32       F
     330  403.94  390.32       F
  403.94  427.58     390       T

CULVERT


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7400

INPUT
Description: Private Drive to School/Church
Distance from Upstream XS =      19
Deck/Roadway Width        =    26.5
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       3
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     273 390.523           293.3  390.83           330.1 390.275

Upstream Bridge Cross Section Data
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  396.86    34.9     396    37.3     396   65.79  394.99   72.05   394.7
```

```
   75.42  394.61   78.52  394.43   79.74  394.41  120.94     392  136.04  391.37
  155.34  390.47  159.88  390.33  181.12  390.01  191.93  390.17  197.52   390.2
  205.41  390.17  210.12  390.23  222.25  390.79   231.8  390.65  235.24   390.8
   239.5  390.72   242.6  390.51   243.7  393.81  244.38  393.85  244.52  393.29
   252.3  393.97  265.38  393.16  272.52  391.32  282.48  390.12  291.46  388.97
  291.48  388.96  293.97  388.64  295.61  384.71  296.77  385.07   298.3   384.3
  298.98  384.16  301.25  384.19  305.22  384.12  308.47   383.8  309.04  384.54
  315.03  386.16  316.94  386.68   328.9   390.9  343.15  390.83  353.17  390.51
  353.89  389.87  355.55  389.89  373.23  390.07  390.11     390  403.96     390
  407.91  389.06  411.03  388.51  411.66  388.45  414.31     388  418.89     388
   423.5  388.96  423.78  388.99  427.54     390  430.04  391.02  432.84     392
  437.06  393.18  439.65     394   455.4     396  464.83  396.74  470.72  397.12
  472.23  397.16   478.3  397.45  483.36   397.5  496.04   397.8   500.1     398
  505.53  398.38  519.88  399.49  524.94  399.82     529     400

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  244.52    .055  296.77     .04  315.03    .055  353.17    .025
  390.11    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        293.97   328.9            .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0     292  390.32       F
     330  403.94  390.32       F
  403.94  427.58     390       T

Downstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  148.65  389.87           151.8     390           244.9 390.523
   264.8  390.83           301.1 390.275             322   390.1

Downstream Bridge Cross Section Data
Station Elevation Data    num=      81
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  396.57   19.18     396   25.02     396   26.23  395.94   29.88  395.76
   31.08  395.72   32.73  395.65   43.33  395.14   53.01  394.74   57.42  394.54
      60  394.44   71.11     394   82.39  393.29   85.33  393.09   90.62  392.73
    91.6  392.66   95.73   392.4   97.19   392.3  101.89  392.04  102.02  392.03
  102.64     392  111.71  391.66  112.52  391.62  116.39  391.46  117.91  391.39
  119.63  391.31  127.79  390.92  128.88  390.86  133.39  390.64  146.33     390
  148.65  389.87   197.8 389.235  207.48  389.11  247.02  388.78  260.06  386.56
  261.83  386.25     267  384.04  271.78  383.96  276.29  383.89   279.1  385.82
  283.58  386.51   283.6  386.51  293.28     388  308.92  391.17  338.91  390.22
  343.99     390  364.27     390  364.77  389.75  400.63  389.75  401.13     390
  429.27     390  443.29  391.39  445.37  391.46  446.23  391.48  446.91  391.51
   447.8  391.52   448.1  391.53     449  391.53   449.3  391.55   450.2  391.55
  468.04     392  470.36     392  473.67  392.18  474.82  392.24  482.25  392.66
  485.63  392.85  492.04  393.22   499.3  393.61  500.79  393.69  506.62     394
  510.56     394  529.82  394.67  530.59  394.68  532.27  394.85  533.97  395.03
  534.59  395.05  536.96  395.34  537.45  395.36  542.27     396  545.21     396
  552.15  396.29

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025   197.8    .055  261.83     .04   279.1    .055  364.77    .025
  401.13    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        261.83  308.92            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     260   387.5       F
     282  552.15   387.5       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1      Circular     5.5
```

FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	5.5	55.2	.013	.013	0	.5	1

Upstream Elevation = 384.18
Centerline Station = 302
Downstream Elevation = 383.96
Centerline Station = 271.8

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #1

Q Culv Group (cfs)	156.54	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.77
Q Barrel (cfs)	156.54	Culv Vel DS (ft/s)	9.83
E.G. US. (ft)	389.92	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	389.90	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	387.36	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	387.22	Culv Exit Loss (ft)	1.60
Delta EG (ft)	2.56	Culv Entr Loss (ft)	0.74
Delta WS (ft)	2.68	Q Weir (cfs)	
E.G. IC (ft)	389.59	Weir Sta Lft (ft)	
E.G. OC (ft)	389.92	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	387.69	Weir Max Depth (ft)	
Culv WS Outlet (ft)	387.45	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.51	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.49	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	191.64	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.39
Q Barrel (cfs)	191.64	Culv Vel DS (ft/s)	9.23
E.G. US. (ft)	390.64	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	390.60	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	388.64	Culv Frctn Ls (ft)	0.26
W.S. DS (ft)	388.45	Culv Exit Loss (ft)	1.13
Delta EG (ft)	2.00	Culv Entr Loss (ft)	0.69
Delta WS (ft)	2.15	Q Weir (cfs)	153.67
E.G. IC (ft)	390.62	Weir Sta Lft (ft)	151.56
E.G. OC (ft)	390.64	Weir Sta Rgt (ft)	429.12
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	388.59	Weir Max Depth (ft)	0.78
Culv WS Outlet (ft)	388.45	Weir Avg Depth (ft)	0.46
Culv Nml Depth (ft)	4.09	Weir Flow Area (sq ft)	80.37
Culv Crt Depth (ft)	3.88	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	183.17	Culv Full Len (ft)	55.20
# Barrels	1	Culv Vel US (ft/s)	7.71
Q Barrel (cfs)	183.17	Culv Vel DS (ft/s)	7.71
E.G. US. (ft)	391.13	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	391.05	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	389.84	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	389.58	Culv Exit Loss (ft)	0.66
Delta EG (ft)	1.29	Culv Entr Loss (ft)	0.46
Delta WS (ft)	1.47	Q Weir (cfs)	473.38
E.G. IC (ft)	391.09	Weir Sta Lft (ft)	141.04
E.G. OC (ft)	391.13	Weir Sta Rgt (ft)	430.37
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	389.68	Weir Max Depth (ft)	1.27
Culv WS Outlet (ft)	389.46	Weir Avg Depth (ft)	0.76
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	195.34
Culv Crt Depth (ft)	3.79	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	162.35	Culv Full Len (ft)	55.20
# Barrels	1	Culv Vel US (ft/s)	6.83
Q Barrel (cfs)	162.35	Culv Vel DS (ft/s)	6.83
E.G. US. (ft)	391.33	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	391.23	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	390.30	Culv Frctn Ls (ft)	0.13
W.S. DS (ft)	390.11	Culv Exit Loss (ft)	0.54

Delta EG (ft)	1.03	Culv Entr Loss (ft)	0.36
Delta WS (ft)	1.12	Q Weir (cfs)	655.40
E.G. IC (ft)	391.28	Weir Sta Lft (ft)	136.75
E.G. OC (ft)	391.33	Weir Sta Rgt (ft)	430.95
Culvert Control	Outlet	Weir Submerg	0.04
Culv WS Inlet (ft)	389.68	Weir Max Depth (ft)	1.47
Culv WS Outlet (ft)	389.46	Weir Avg Depth (ft)	0.94
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	247.70
Culv Crt Depth (ft)	3.56	Min El Weir Flow (ft)	390.01

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	148.64	Culv Full Len (ft)	55.20
# Barrels	1	Culv Vel US (ft/s)	6.26
Q Barrel (cfs)	148.64	Culv Vel DS (ft/s)	6.26
E.G. US. (ft)	391.45	Culv Inv El Up (ft)	384.18
W.S. US. (ft)	391.35	Culv Inv El Dn (ft)	383.96
E.G. DS (ft)	390.58	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	390.43	Culv Exit Loss (ft)	0.46
Delta EG (ft)	0.88	Culv Entr Loss (ft)	0.30
Delta WS (ft)	0.91	Q Weir (cfs)	781.40
E.G. IC (ft)	391.39	Weir Sta Lft (ft)	133.85
E.G. OC (ft)	391.45	Weir Sta Rgt (ft)	431.30
Culvert Control	Outlet	Weir Submerg	0.18
Culv WS Inlet (ft)	389.68	Weir Max Depth (ft)	1.59
Culv WS Outlet (ft)	389.46	Weir Avg Depth (ft)	1.05
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	280.84
Culv Crt Depth (ft)	3.40	Min El Weir Flow (ft)	390.01

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7358

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.57	19.18	396	25.02	396	26.23	395.94	29.88	395.76
31.08	395.72	32.73	395.65	43.33	395.14	53.01	394.74	57.42	394.54
60	394.44	71.11	394	82.39	393.29	85.33	393.09	90.62	392.73
91.6	392.66	95.73	392.4	97.19	392.3	101.89	392.04	102.02	392.03
102.64	392	111.71	391.66	112.52	391.62	116.39	391.46	117.91	391.39
119.63	391.31	127.79	390.92	128.88	390.86	133.39	390.64	146.33	390
148.65	389.87	197.8	389.235	207.48	389.11	247.02	388.78	260.06	386.56
261.83	386.25	267	384.04	271.78	383.96	276.29	383.89	279.1	385.82
283.58	386.51	283.6	386.51	293.28	388	308.92	391.17	338.91	390.22
343.99	390	364.27	390	364.77	389.75	400.63	389.75	401.13	390
429.27	390	443.29	391.39	445.37	391.46	446.23	391.48	446.91	391.51
447.8	391.52	448.1	391.53	449	391.53	449.3	391.55	450.2	391.55
468.04	392	470.36	392	473.67	392.18	474.82	392.24	482.25	392.66
485.63	392.85	492.04	393.22	499.3	393.61	500.79	393.69	506.62	394
510.56	394	529.82	394.67	530.59	394.68	532.27	394.85	533.97	395.03
534.59	395.05	536.96	395.34	537.45	395.36	542.27	396	545.21	396
552.15	396.29								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	197.8	.055	261.83	.04	279.1	.055	364.77	.025
401.13	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
261.83	308.92	88.04	96.77	105.03	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	260	387.5	F
282	552.15	387.5	F

LATERAL STRUCTURE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7340

INPUT
Description:

```
Lateral structure position     = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width        =       2
Weir Coefficient          =     3.1
Weir Flow Reference       = Water Surface
 Weir Embankment Coordinates    num =        2
     Sta    Elev     Sta    Elev
       0  391.17      35     390

Weir crest shape                            = Broad Crested


LATERAL STRUCTURE OUTPUT  Profile #2-YR  Lateral Structure

  E.G. US. (ft)                387.36    Weir Sta US (ft)
  W.S. US. (ft)                387.21    Weir Sta DS (ft)
  E.G. DS (ft)                 387.22    Min El Weir Flow (ft)         390.00
  W.S. DS (ft)                 387.01    Wr Top Wdth (ft)
  Q US (cfs)                   156.54    Weir Max Depth (ft)
  Q Leaving Total (cfs)          0.00    Weir Avg Depth (ft)
  Q DS (cfs)                   156.54    Weir Flow Area (sq ft)
  Perc Q Leaving                 0.00    Weir Coef (ft^1/2)             0.000
  Q Weir (cfs)                   0.00    Weir Submerg
  Q Gates (cfs)                          Q Gate Group (cfs)
  Q Culv (cfs)                           Gate Open Ht (ft)
  Q Lat RC (cfs)                         Gate #Open
  Q Outlet TS (cfs)              0.00    Gate Area (sq ft)
  Q Breach (cfs)                         Gate Submerg
  Breach Avg Velocity (ft/s)             Gate Invert (ft)
  Breach Flow Area (sq ft)               Gate Weir Coef
  Breach WD (ft)
  Breach Top El (ft)
  Breach Bottom El (ft)
  Breach SSL (ft)
  Breach SSR (ft)


LATERAL STRUCTURE OUTPUT  Profile #10-YR  Lateral Structure

  E.G. US. (ft)                388.64    Weir Sta US (ft)
  W.S. US. (ft)                388.45    Weir Sta DS (ft)
  E.G. DS (ft)                 388.52    Min El Weir Flow (ft)         390.00
  W.S. DS (ft)                 388.28    Wr Top Wdth (ft)
  Q US (cfs)                   345.31    Weir Max Depth (ft)
  Q Leaving Total (cfs)          0.00    Weir Avg Depth (ft)
  Q DS (cfs)                   345.31    Weir Flow Area (sq ft)
  Perc Q Leaving                 0.00    Weir Coef (ft^1/2)             0.000
  Q Weir (cfs)                   0.00    Weir Submerg
  Q Gates (cfs)                          Q Gate Group (cfs)
  Q Culv (cfs)                           Gate Open Ht (ft)
  Q Lat RC (cfs)                         Gate #Open
  Q Outlet TS (cfs)              0.00    Gate Area (sq ft)
  Q Breach (cfs)                         Gate Submerg
  Breach Avg Velocity (ft/s)             Gate Invert (ft)
  Breach Flow Area (sq ft)               Gate Weir Coef
  Breach WD (ft)
  Breach Top El (ft)
  Breach Bottom El (ft)
  Breach SSL (ft)
  Breach SSR (ft)


LATERAL STRUCTURE OUTPUT  Profile #50-YR  Lateral Structure

  E.G. US. (ft)                389.84    Weir Sta US (ft)
  W.S. US. (ft)                389.58    Weir Sta DS (ft)
  E.G. DS (ft)                 389.74    Min El Weir Flow (ft)         390.00
  W.S. DS (ft)                 389.47    Wr Top Wdth (ft)
  Q US (cfs)                   656.54    Weir Max Depth (ft)
  Q Leaving Total (cfs)          0.00    Weir Avg Depth (ft)
  Q DS (cfs)                   656.54    Weir Flow Area (sq ft)
  Perc Q Leaving                 0.00    Weir Coef (ft^1/2)             2.000
  Q Weir (cfs)                   0.00    Weir Submerg
  Q Gates (cfs)                          Q Gate Group (cfs)
  Q Culv (cfs)                           Gate Open Ht (ft)
  Q Lat RC (cfs)                         Gate #Open
  Q Outlet TS (cfs)              0.00    Gate Area (sq ft)
  Q Breach (cfs)                         Gate Submerg
  Breach Avg Velocity (ft/s)             Gate Invert (ft)
```

Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Lateral Structure

E.G. US. (ft)	390.30	Weir Sta US (ft)	
W.S. US. (ft)	390.11	Weir Sta DS (ft)	
E.G. DS (ft)	390.21	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	389.99	Wr Top Wdth (ft)	
Q US (cfs)	817.75	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	817.75	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	2.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Lateral Structure

E.G. US. (ft)	390.58	Weir Sta US (ft)	0.00
W.S. US. (ft)	390.43	Weir Sta DS (ft)	35.00
E.G. DS (ft)	390.50	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	390.31	Wr Top Wdth (ft)	10.30
Q US (cfs)	930.04	Weir Max Depth (ft)	0.31
Q Leaving Total (cfs)	2.19	Weir Avg Depth (ft)	0.15
Q DS (cfs)	927.84	Weir Flow Area (sq ft)	1.59
Perc Q Leaving	0.24	Weir Coef (ft^1/2)	3.100
Q Weir (cfs)	2.19	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7261

INPUT
Description:
Station Elevation Data   num=   56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.52	11.16	396.13	11.49	396.12	14.84	396	19.03	396
31.29	395.48	32.33	395.45	37.78	395.24	39.36	395.17	40.43	395.13
45.64	394.87	46.72	394.83	47.74	394.79	50.86	394.63	51.69	394.6
55.43	394.43	56.02	394.4	56.87	394.35	65.64	394	66.27	393.97
66.34	393.97	68.25	393.87	69.12	393.83	71.37	393.71	72.13	393.67
73.08	393.62	77.56	393.37	80.58	393.19	99.36	392	106.9	391.65
117.58	391.15	124.47	390.84	131.93	390.49	142.34	390	150.21	389.53
158.04	389.08	161.74	388.88	161.88	388.87	183.31	387.65	187.17	387.43
187.23	387.43	215.39	386.78	238.03	387.04	238.44	387.05	242.11	383.75
244.57	382.89	249.17	383.78	251.81	385.86	258.14	387.45	258.15	387.45
264	388.91	282.39	395.82	284.39	395.75	295.46	395.49	296.12	395.12

```
  316.31  395.46

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  161.88    .085  238.44     .04  258.14    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        238.44  258.14           198.31  202.16  205.99            .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7059

INPUT
Description:
Station Elevation Data    num=      31
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   394.9   12.54  394.26   17.77     394   18.74     394   37.67  392.94
   54.23     392   55.28  391.94   56.04  391.89   69.43  391.06   86.78     390
  111.05  388.93  115.58  388.73  116.27  388.69  116.33  388.69   153.2  387.09
  178.63  385.82  182.48  385.63  184.66  382.67  188.14  382.53  194.24  382.53
  195.94  384.19  198.69  385.84  198.71  385.85   209.3  392.23  221.62  403.18
  233.11  403.18  233.79  402.85  259.74   402.5  338.53  403.99  339.19     404
  350.39     404

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  116.27    .085  178.63     .04  198.71    .085  233.11    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        178.63  198.71           168.76  169.64  170.29            .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   261.9  350.39     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 6890

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   394.3   13.98     394   17.28     394   26.86   393.7   27.04   393.7
   34.09  393.42   34.57   393.4   35.15  393.38   35.72  393.35   36.46  393.31
   37.31  393.27   39.62  393.17   65.29     392   68.45  391.85   70.12  391.77
   78.63  391.37  110.47     390  112.55  389.88  113.04  389.85  118.83  389.49
     121  389.35  128.16  388.89   132.1  388.64  138.52  388.23  139.26  388.18
  151.02  388.14  177.71  386.13  206.04  385.19  209.04   382.1  209.48  381.65
  214.16  381.04  217.26  381.23  221.62  384.16  221.67   384.2  221.74  384.25
  221.98  384.45  222.05   384.5  226.69     388   227.2     388  227.34  388.12
  229.12  389.72  229.13  389.74  229.43     390  231.07  391.47  231.68     392
  231.99  392.26  234.01     394  235.13  394.96  236.34     396  238.21  397.58
  238.76     398  239.84  398.64  242.65     400   247.4  401.93  247.54     402
  254.08  402.28  311.77     404  314.64     404

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025   78.63    .085  206.04     .04  226.69    .085  254.08    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        206.04  226.69           197.24  199.49  199.59            .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   304.6  314.64     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 6690

INPUT
Description:
Station Elevation Data    num=      45
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Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.97	9.56	396.32	13.05	396.18	13.29	396.17	15.54	396.08
15.66	396.08	17.8	396	20.68	395.84	21.02	395.81	21.49	395.78
37.06	394.87	38.21	394.76	44.14	394.19	44.63	394.15	46.04	394
48	393.33	49.54	392.75	51.16	392	52.72	391.33	53.29	391.15
54.75	390.76	56.06	390.39	57.3	390	100.92	390	106.99	390.9
108.3	391.09	109.27	391.28	109.32	391.29	109.37	391.29	109.38	391.3
109.43	391.3	152.71	385.84	163.54	384.7	163.98	384.66	168.46	380.92
173.86	380.59	179.48	380.65	181.3	382.1	183.67	382.49	197.16	384.73
205.42	391.59	221.07	403.46	223.51	404	294.59	404	318.16	404

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	163.54	.04	181.3	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
163.54	181.3	377.18	363.89	351.23	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
53.01	109.48	391.28	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3.8	21.3	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6326

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.12	.17	394.1	.39	394.08	.55	394.07	1.48	394
8.54	393.52	9.16	393.45	9.97	393.36	10.47	393.3	12.77	392.95
14.58	392.76	15.81	392.56	19.55	392	20.06	391.95	22.11	391.75
23.82	391.6	25.31	391.48	29.23	391.03	33.2	390.67	35.54	390.38
36.49	390.29	38.71	390	44.96	389.14	51.95	388	56.99	387.4
58.61	387.19	67.92	386	71.44	385.39	73.02	385.16	75.4	384.84
81.11	384.1	81.6	384.03	81.9	384	83.65	383.83	84.03	383.77
89.45	383.24	90.85	383.01	91.64	382.92	97.37	382	99.04	382
99.15	381.99	99.18	381.99	100.82	381.86	104.18	381.58	104.24	381.58
136.32	380.14	161.77	380	170.99	380.01	171.86	380.01	173.35	379.93
177.41	376.15	187.21	377.05	190.57	379.27	192.39	379.55	193.53	379.72
206.36	385.54	206.41	385.59	206.58	385.77	212.57	392	213.68	392.92
214.91	394	216.25	394.9	217.66	396	219.81	397.41	220.59	398
221.57	398.69	223.68	400	225.8	401.31	227.13	402	275.55	403.66
285.17	404	287.06	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	173.35	.04	190.57	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
173.35	190.57	271.56	280.95	283.31	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6045

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	1.4	405.71	1.73	405.66	3.95	405.2	5.01	405.05
7.63	404.63	9.29	404.32	11.26	404	12.26	403.68	13.01	403.46
14.32	403.03	17.73	402	18.08	401.89	18.47	401.76	20.95	400.93
23.69	400.03	23.76	400	27.2	399.06	30.51	398	33.77	397.07
37.4	396	41.28	394.98	44.92	394	47.3	393.41	52.97	392
55.18	391.44	58.72	390.52	60.71	390	64.51	388.98	68.17	388
69.43	387.72	76.91	386	77.37	386	82.19	384.45	82.33	384.4
82.38	384.39	114.77	379.87	140.12	378.58	154.89	377.51	156.71	377.38
160.04	373.45	165.47	372.69	178.5	373.65	179.33	377.25	180.24	377.41
191.95	379.48	205.32	385.5	217.03	395.24	217.08	395.26	217.18	395.28
220.9	397.31	222.17	397.99	222.19	398.01	222.2	398.03	222.23	398.1
222.25	398.16	222.35	398.36	222.61	398.88	224.29	402	326.13	402

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  330.47  401.79

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  156.71     .04  179.33    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        156.71  179.33           209.04  198.49  192.65             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 5847

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  399.24    1.45  399.08     2.8  398.92   10.83     398   13.21  397.68
   24.43     396   25.01  395.89   35.42     394   37.27  393.74   37.79  393.69
    52.7  390.12   52.72  390.12   52.77  390.11   86.22     383  117.82  378.26
  133.59  377.77  134.53  377.22  140.83  373.57   146.8  372.61  149.54  373.16
  153.94  377.43  154.53  377.49  167.73  378.81  180.08  387.08  185.44  391.87
  185.49  391.87  185.84  391.92  189.44  391.94   190.5  392.47  190.93     396
   193.6  397.72  193.98     398  194.59  398.26  195.26  398.49  199.97     400
  266.19     400   286.7  400.45

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  133.59     .04  153.94    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        133.59  153.94           184.54  178.51  172.27             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   274.9   286.7     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 5668

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     394    2.83     394    6.39  393.53    8.52  393.37    9.42  393.29
   10.04  393.25   11.67  393.09    12.4  393.05   13.26  392.96   14.13  392.92
   15.52  392.77    18.5   392.7    19.6  392.59   28.55  392.15   30.78     392
   32.39   391.8   32.82  391.76    37.1  391.21   42.85  390.73      45  390.55
   46.39   390.5   46.97  390.47   47.22  390.45   51.29     390   56.62   389.6
   57.93  389.52   62.13  389.24   67.84  388.94   71.82   388.7    73.9  388.59
   77.36  388.37   78.88  388.27   82.49     388   88.83  387.18   98.59  385.99
  104.13  385.21  105.71  385.01  107.69   384.8   110.1  384.48  116.68     384
  117.78  383.94  120.53  383.72  121.02  383.67  122.28  383.55  123.44  383.42
  125.71  383.18  130.86  382.57  135.53     382  147.05  380.28  172.82  377.69
  200.62  376.14  220.02  376.22  238.56  376.33  240.62  376.34  244.41  372.35
  247.08  371.75  250.38  372.58  255.86  374.91  258.75  376.54  258.77  376.55
  273.07  384.62   286.6  395.41  293.35  398.75  298.49  401.68  303.94  403.42
  314.05     402  314.97  401.91  328.12     402  400.84     402   419.1  402.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  240.62     .04  258.75    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        240.62  258.75           144.79  148.68  152.52             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   398.6   419.1     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 5520
```

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.57	1.77	392.5	2.21	392.46	11.92	392	17.09	391.5
24.53	390.74	26.95	390.45	31.64	390	34.16	389.82	35.17	389.71
39.42	389.35	45.83	388.73	54.99	388.04	61.37	387.47	63.9	387.27
66.26	387.15	67.44	387.06	71.13	386.95	79.52	386.38	86.54	385.85
89.06	385.64	90.11	385.57	94.2	385.24	97.92	384.9	101.16	384.58
106.52	384	115.88	383.23	119.25	382.99	122.02	382.84	123.86	382.73
125.85	382.65	131.94	382.26	139.57	381.73	153.36	380.63	161.65	380
162.55	379.95	187.97	378	190.84	377.16	211.86	375.32	242.87	374.82
245.72	374.78	248.59	373.11	256.95	371.96	257.18	372.1	260.09	374.7
262.9	375.22	269	376.34	285.23	385.77	295.6	394.02	300.61	398.04
301.69	400	307.46	401.12	309.84	401.46	313.85	402	342.38	402.99
343.02	402.99	351.56	403.37	352.31	403.37	354.24	403.43	354.97	403.43
356.01	403.47	356.73	403.46	357.34	403.48	358.02	403.47	359.97	403.54
361.28	403.52	361.75	403.54	388.95	403.44				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	245.72	.04	260.09	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.72	260.09	75.07	77.35	79.63	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
373.3	388.95	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5442

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400	20.17	400	24.58	399.47	27.23	399.5	29.22	399.34
30.21	399.33	37.26	398.97	52.02	398	59.75	397.4	62.81	397.22
78.24	396	88.72	395.02	98.46	394	132.72	392.26	154.81	390
176.04	388	202.11	386.21	204.71	386	230.38	384.54	231.24	384.52
234.24	384	262.33	382.28	263.68	382.25	263.99	382.19	264.46	382.22
264.94	382.15	268.52	382	279.94	381.74	286.41	381.5	298.54	380.78
301.9	380.67	308.4	380.64	312.15	380.5	314.49	380.5	320.11	380
330.71	379.38	337.1	379.1	348.09	377.94	371.78	376.41	397.93	374.82
410.38	374.17	410.4	374.17	413.82	374	416.13	371.71	419.17	371.22
424.47	371.54	428.14	373.48	431.85	373.94	435.55	374.4	448.44	380.81
457.31	388.52	469.69	395.98	474.76	398.6	475.05	398.8	476.32	399.44
478.66	400.4	482.42	401.51	484.65	402	492.73	402	500.99	402.33
511.23	402.63	525.09	402.91	537.02	403.46	539.65	403.5	541.98	403.6
548.32	404	552.12	404.33	555.02	404.48	558.6	404.56		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	413.82	.04	428.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
413.82	428.14	0	0	0	.3	.5

SUMMARY OF MANNING'S N VALUES

River:Little Plumtree

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7
Little Plumtree	9415	.075	.04	.075				
Little Plumtree	9282	.065	.04	.065				
Little Plumtree	9224	.065	.04	.065				
Little Plumtree	9100	Culvert						
Little Plumtree	9094	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	9033	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8938	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8776	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8628	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8459	.065	.025	.055	.016	.055	.025	.065

Little Plumtree	8329	.025	.055	.016	.055	.025	.065	
Little Plumtree	8166	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8010	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	7921	.075	.025	.055	.016	.075	.025	.065
Little Plumtree	7800	Culvert						
Little Plumtree	7735	.075	.04	.055	.025	.065		
Little Plumtree	7717	Lat Struct						
Little Plumtree	7645	.025	.075	.04	.055	.025	.065	
Little Plumtree	7560	.065	.04	.055	.025	.065		
Little Plumtree	7499	.025	.055	.04	.055	.025	.065	
Little Plumtree	7437	.025	.055	.04	.055	.025	.065	
Little Plumtree	7400	Culvert						
Little Plumtree	7358	.025	.055	.04	.055	.025	.065	
Little Plumtree	7340	Lat Struct						
Little Plumtree	7261	.025	.085	.04	.085			
Little Plumtree	7059	.025	.085	.04	.085	.025		
Little Plumtree	6890	.025	.085	.04	.085	.025		
Little Plumtree	6690	.085	.04	.085				
Little Plumtree	6326	.085	.04	.085				
Little Plumtree	6045	.085	.04	.085				
Little Plumtree	5847	.085	.04	.085				
Little Plumtree	5668	.085	.04	.085				
Little Plumtree	5520	.085	.04	.085				
Little Plumtree	5442	.085	.04	.085				

SUMMARY OF REACH LENGTHS

River: Little Plumtree

Reach	River Sta.	Left	Channel	Right
Little Plumtree	9415	133.08	132.78	133.29
Little Plumtree	9282	61.4	57.86	54.02
Little Plumtree	9224	128.56	130.35	131.84
Little Plumtree	9100	Culvert		
Little Plumtree	9094	57.37	60.69	64.17
Little Plumtree	9033	96.95	94.72	92.33
Little Plumtree	8938	163.23	161.92	160.75
Little Plumtree	8776	150.65	147.84	144.92
Little Plumtree	8628	174.55	169.35	164.24
Little Plumtree	8459	130.02	130.06	129.9
Little Plumtree	8329	163	162.96	163.01
Little Plumtree	8166	156.55	156.02	156.27
Little Plumtree	8010	48.73	88.82	110.46
Little Plumtree	7921	168.2	186.1	189.78
Little Plumtree	7800	Culvert		
Little Plumtree	7735	142.82	90.04	69.09
Little Plumtree	7717	Lat Struct		
Little Plumtree	7645	85.44	84.61	84.17
Little Plumtree	7560	62.59	61.86	60.62
Little Plumtree	7499	62.52	61.98	61.21
Little Plumtree	7437	78.48	78.48	79.28
Little Plumtree	7400	Culvert		
Little Plumtree	7358	88.04	96.77	105.03
Little Plumtree	7340	Lat Struct		
Little Plumtree	7261	198.31	202.16	205.99
Little Plumtree	7059	168.76	169.64	170.29
Little Plumtree	6890	197.24	199.49	199.59
Little Plumtree	6690	377.18	363.89	351.23
Little Plumtree	6326	271.56	280.95	283.31
Little Plumtree	6045	209.04	198.49	192.65
Little Plumtree	5847	184.54	178.51	172.27
Little Plumtree	5668	144.79	148.68	152.52
Little Plumtree	5520	75.07	77.35	79.63
Little Plumtree	5442	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Little Plumtree

Reach	River Sta.	Contr.	Expan.
Little Plumtree	9415	.1	.3

Little Plumtree	9282		.1	.3
Little Plumtree	9224		.3	.5
Little Plumtree	9100	Culvert		
Little Plumtree	9094		.3	.5
Little Plumtree	9033		.1	.3
Little Plumtree	8938		.1	.3
Little Plumtree	8776		.1	.3
Little Plumtree	8628		.1	.3
Little Plumtree	8459		.1	.3
Little Plumtree	8329		.1	.3
Little Plumtree	8166		.1	.3
Little Plumtree	8010		.1	.3
Little Plumtree	7921		.3	.5
Little Plumtree	7800	Culvert		
Little Plumtree	7735		.3	.5
Little Plumtree	7717	Lat Struct		
Little Plumtree	7645		.1	.3
Little Plumtree	7560		.1	.3
Little Plumtree	7499		.1	.3
Little Plumtree	7437		.3	.5
Little Plumtree	7400	Culvert		
Little Plumtree	7358		.3	.5
Little Plumtree	7340	Lat Struct		
Little Plumtree	7261		.1	.3
Little Plumtree	7059		.1	.3
Little Plumtree	6890		.1	.3
Little Plumtree	6690		.1	.3
Little Plumtree	6326		.1	.3
Little Plumtree	6045		.1	.3
Little Plumtree	5847		.1	.3
Little Plumtree	5668		.1	.3
Little Plumtree	5520		.1	.3
Little Plumtree	5442		.3	.5

HEC-RAS Plan: T River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	9415	2-YR	189.00	396.28	399.84	398.71	400.04	0.003895	3.64	51.98	25.34	0.45
Little Plumtree	9415	10-YR	397.00	396.28	401.69	399.74	401.88	0.001752	3.59	137.08	66.30	0.33
Little Plumtree	9415	50-YR	698.00	396.28	402.60	400.79	402.91	0.002253	4.72	204.54	81.66	0.39
Little Plumtree	9415	100-YR	862.00	396.28	402.98	401.26	403.35	0.002497	5.24	236.87	90.25	0.41
Little Plumtree	9415	7-30-2016	945.00	396.28	403.12	401.44	403.53	0.002682	5.54	249.81	94.39	0.43
Little Plumtree	9282	2-YR	189.00	395.11	399.46		399.62	0.002464	3.22	61.27	32.20	0.35
Little Plumtree	9282	10-YR	397.00	395.11	401.53		401.68	0.001167	3.28	165.08	74.89	0.27
Little Plumtree	9282	50-YR	698.00	395.11	402.37		402.63	0.001777	4.52	240.86	109.41	0.34
Little Plumtree	9282	100-YR	862.00	395.11	402.72		403.03	0.002024	5.03	282.62	126.54	0.37
Little Plumtree	9282	7-30-2016	945.00	395.11	402.85		403.19	0.002197	5.32	298.36	131.84	0.38
Little Plumtree	9224	2-YR	189.00	395.12	399.39	397.47	399.50	0.001519	2.60	72.56	27.75	0.28
Little Plumtree	9224	10-YR	397.00	395.12	401.49	398.46	401.62	0.000892	2.88	152.81	55.87	0.24
Little Plumtree	9224	50-YR	698.00	395.12	402.28	399.49	402.53	0.001495	4.16	217.86	111.90	0.32
Little Plumtree	9224	100-YR	862.00	395.12	402.62	399.93	402.92	0.001723	4.65	265.59	160.39	0.34
Little Plumtree	9224	7-30-2016	945.00	395.12	402.73	400.14	403.07	0.001887	4.93	284.11	179.10	0.36
Little Plumtree	9100		Culvert									
Little Plumtree	9094	2-YR	189.00	394.82	396.86	396.86	397.65	0.003475	7.11	26.57	16.91	1.00
Little Plumtree	9094	10-YR	397.00	394.82	398.52	397.92	399.22	0.001505	6.74	59.57	23.14	0.71
Little Plumtree	9094	50-YR	698.00	394.82	400.42	399.00	401.14	0.000793	6.85	114.78	45.19	0.56
Little Plumtree	9094	100-YR	862.00	394.82	401.51	399.51	402.08	0.000507	6.31	210.98	131.09	0.47
Little Plumtree	9094	7-30-2016	945.00	394.82	402.01	399.74	402.47	0.000400	5.93	279.95	146.03	0.42
Little Plumtree	9033	2-YR	189.00	394.25	396.28	396.45	397.33	0.004753	8.22	23.03	15.19	1.16
Little Plumtree	9033	10-YR	397.00	394.25	397.56	397.56	398.91	0.002770	9.37	45.59	20.08	0.98
Little Plumtree	9033	50-YR	698.00	394.25	398.81	398.81	400.71	0.002436	11.21	73.69	24.92	0.98
Little Plumtree	9033	100-YR	862.00	394.25	399.43	399.43	401.55	0.002273	11.90	90.55	29.53	0.97
Little Plumtree	9033	7-30-2016	945.00	394.25	399.93	399.75	401.96	0.001915	11.69	107.12	40.76	0.90
Little Plumtree	8938	2-YR	189.00	393.85	396.04	396.12	396.99	0.003935	7.83	24.23	15.40	1.07
Little Plumtree	8938	10-YR	397.00	393.85	397.12	397.25	398.62	0.003187	9.85	43.70	20.41	1.05
Little Plumtree	8938	50-YR	698.00	393.85	398.26	398.55	400.43	0.002984	12.00	69.95	25.89	1.07
Little Plumtree	8938	100-YR	862.00	393.85	398.81	399.17	401.28	0.002883	12.87	85.04	30.10	1.08
Little Plumtree	8938	7-30-2016	945.00	393.85	400.26	400.26	401.61	0.001162	9.87	165.03	102.76	0.72
Little Plumtree	8776	2-YR	189.00	392.95	394.86	395.16	396.14	0.006497	9.09	20.80	14.60	1.34
Little Plumtree	8776	10-YR	397.00	392.95	395.72	396.28	397.86	0.005914	11.78	35.09	18.71	1.38
Little Plumtree	8776	50-YR	698.00	392.95	396.75	397.56	399.73	0.005055	14.00	56.97	23.69	1.36
Little Plumtree	8776	100-YR	862.00	392.95	397.23	398.12	400.60	0.004799	14.94	68.93	26.03	1.36
Little Plumtree	8776	7-30-2016	945.00	392.95	397.42	398.43	401.04	0.004856	15.53	73.98	27.03	1.38
Little Plumtree	8628	2-YR	189.00	391.99	393.81	394.17	395.15	0.006857	9.26	20.40	14.48	1.38
Little Plumtree	8628	10-YR	397.00	391.99	394.61	395.26	396.90	0.007013	12.15	33.23	18.04	1.48
Little Plumtree	8628	50-YR	698.00	391.99	395.52	396.49	398.86	0.006394	14.75	51.70	22.67	1.50
Little Plumtree	8628	100-YR	862.00	391.99	395.96	397.13	399.76	0.006101	15.78	62.28	25.59	1.50
Little Plumtree	8628	7-30-2016	945.00	391.99	396.15	398.16	400.20	0.006074	16.33	67.31	26.86	1.51
Little Plumtree	8459	2-YR	189.00	391.22	392.87	393.14	393.98	0.006118	8.45	22.37	17.09	1.30
Little Plumtree	8459	10-YR	397.00	391.22	393.52	394.10	395.58	0.007621	11.51	34.53	19.81	1.52
Little Plumtree	8459	50-YR	698.00	391.22	394.14	395.21	397.59	0.008902	14.90	47.59	22.37	1.72
Little Plumtree	8459	100-YR	862.00	391.22	394.46	395.74	398.51	0.008815	16.15	54.97	23.68	1.75
Little Plumtree	8459	7-30-2016	945.00	391.22	394.62	395.99	398.95	0.008774	16.72	58.64	24.43	1.76
Little Plumtree	8329	2-YR	189.00	390.59	392.24	392.43	393.21	0.005183	7.90	23.92	17.84	1.20
Little Plumtree	8329	10-YR	397.00	390.59	393.01	393.37	394.64	0.005341	10.21	39.00	20.91	1.29
Little Plumtree	8329	50-YR	698.00	390.59	393.69	394.47	396.43	0.006098	13.31	53.95	23.59	1.45
Little Plumtree	8329	100-YR	862.00	390.59	395.90	394.99	396.93	0.001069	8.39	149.04	116.33	0.67
Little Plumtree	8329	7-30-2016	945.00	390.59	396.28	395.22	397.16	0.000883	8.02	209.86	180.09	0.62
Little Plumtree	8166	2-YR	189.00	389.90	392.27	391.86	392.72	0.001611	5.38	35.32	20.31	0.70
Little Plumtree	8166	10-YR	397.00	389.90	393.53	392.82	394.19	0.001225	6.55	64.80	28.85	0.67
Little Plumtree	8166	50-YR	698.00	389.90	395.25	393.93	395.86	0.000676	6.59	180.23	136.07	0.53
Little Plumtree	8166	100-YR	862.00	389.90	396.28	395.00	396.63	0.000366	5.53	344.07	181.16	0.41
Little Plumtree	8166	7-30-2016	945.00	389.90	396.58		396.91	0.000332	5.45	401.41	193.41	0.39
Little Plumtree	8010	2-YR	189.00	388.95	391.52	391.52	392.33	0.003365	7.24	26.39	33.12	1.00
Little Plumtree	8010	10-YR	397.00	388.95	392.57	392.57	393.85	0.002797	9.14	46.60	44.00	0.99
Little Plumtree	8010	50-YR	698.00	388.95	393.79	393.79	395.56	0.002364	10.81	75.84	54.85	0.97
Little Plumtree	8010	100-YR	862.00	388.95	394.37	394.37	396.36	0.002233	11.52	91.68	61.76	0.96
Little Plumtree	8010	7-30-2016	945.00	388.95	395.28	395.28	396.71	0.001317	10.01	144.57	136.26	0.76

HEC-RAS Plan: T River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	7921	2-YR	189.00	387.21	390.55	388.55	390.57	0.000047	1.15	166.00	77.56	0.13
Little Plumtree	7921	10-YR	397.00	387.21	391.83	389.09	391.87	0.000050	1.58	254.20	87.24	0.14
Little Plumtree	7921	50-YR	698.00	387.21	393.40	389.61	393.46	0.000048	1.94	362.65	135.22	0.15
Little Plumtree	7921	100-YR	862.00	387.21	394.26	389.83	394.32	0.000044	2.07	421.67	148.65	0.15
Little Plumtree	7921	7-30-2016	945.00	387.21	394.78	389.94	394.85	0.000040	2.09	457.91	155.82	0.14
Little Plumtree	7800		Culvert									
Little Plumtree	7735	2-YR	189.00	386.40	390.33	388.48	390.36	0.000475	1.52	127.88	102.29	0.17
Little Plumtree	7735	10-YR	397.00	386.40	391.23	389.00	391.32	0.000782	2.38	172.46	111.76	0.22
Little Plumtree	7735	50-YR	698.00	386.40	392.08	389.59	392.25	0.001183	3.37	213.99	117.64	0.28
Little Plumtree	7735	100-YR	862.00	386.40	392.44	389.87	392.67	0.001388	3.84	231.60	120.13	0.31
Little Plumtree	7735	7-30-2016	945.00	386.40	392.68	390.01	392.93	0.001415	4.01	243.39	121.80	0.32
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	156.54	386.41	390.08		390.24	0.003253	3.25	53.32	53.50	0.41
Little Plumtree	7645	10-YR	345.31	386.41	390.86		391.13	0.004141	4.42	103.96	70.95	0.52
Little Plumtree	7645	50-YR	658.51	386.41	391.51		391.96	0.006110	5.88	152.78	79.60	0.66
Little Plumtree	7645	100-YR	831.79	386.41	391.79		392.32	0.006927	6.46	175.70	83.34	0.71
Little Plumtree	7645	7-30-2016	955.57	386.41	391.97		392.56	0.007440	6.82	190.94	85.71	0.74
Little Plumtree	7560	2-YR	156.54	385.70	389.94		390.03	0.001610	2.39	79.93	71.51	0.31
Little Plumtree	7560	10-YR	345.31	385.70	390.68		390.81	0.002624	3.23	137.85	86.09	0.39
Little Plumtree	7560	50-YR	658.51	385.70	391.16		391.43	0.005112	4.67	181.30	100.36	0.53
Little Plumtree	7560	100-YR	831.79	385.70	391.34		391.70	0.006537	5.36	199.44	114.19	0.60
Little Plumtree	7560	7-30-2016	955.57	385.70	391.45		391.87	0.007570	5.81	211.50	125.61	0.64
Little Plumtree	7499	2-YR	156.54	385.87	389.91		389.95	0.000744	1.85	122.65	115.02	0.22
Little Plumtree	7499	10-YR	345.31	385.87	390.63		390.69	0.001045	2.39	226.72	180.06	0.26
Little Plumtree	7499	50-YR	658.51	385.87	391.11		391.21	0.001702	3.12	316.97	198.82	0.34
Little Plumtree	7499	100-YR	831.56	385.87	391.31		391.42	0.002000	3.43	356.11	204.80	0.37
Little Plumtree	7499	7-30-2016	954.34	385.87	391.43		391.55	0.002198	3.64	380.42	206.05	0.38
Little Plumtree	7437	2-YR	156.54	383.80	389.90	385.81	389.92	0.000266	1.20	132.00	66.84	0.11
Little Plumtree	7437	10-YR	345.31	383.80	390.60	386.75	390.64	0.000577	1.88	236.84	194.66	0.16
Little Plumtree	7437	50-YR	656.54	383.80	391.05	387.86	391.12	0.001012	2.60	340.58	255.08	0.21
Little Plumtree	7437	100-YR	817.75	383.80	391.23	388.34	391.32	0.001139	2.83	388.62	261.21	0.22
Little Plumtree	7437	7-30-2016	930.04	383.80	391.35	388.62	391.44	0.001217	2.97	418.94	264.89	0.23
Little Plumtree	7400		Culvert									
Little Plumtree	7358	2-YR	156.54	383.89	387.22	385.78	387.36	0.002030	3.04	52.46	31.99	0.34
Little Plumtree	7358	10-YR	345.31	383.89	388.45	386.80	388.64	0.002229	3.58	105.24	46.52	0.38
Little Plumtree	7358	50-YR	656.54	383.89	389.58	387.96	389.84	0.002614	4.34	196.26	129.77	0.42
Little Plumtree	7358	100-YR	817.75	383.89	390.11	388.36	390.30	0.001975	3.95	293.92	248.49	0.36
Little Plumtree	7358	7-30-2016	930.04	383.89	390.43	388.61	390.58	0.001559	3.60	377.36	269.12	0.32
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	156.54	382.89	386.66		386.98	0.006501	4.56	34.34	16.12	0.55
Little Plumtree	7261	10-YR	345.31	382.89	388.00		388.31	0.004563	4.85	113.10	83.17	0.49
Little Plumtree	7261	50-YR	656.54	382.89	389.28		389.56	0.003143	5.10	237.62	110.48	0.43
Little Plumtree	7261	100-YR	817.75	382.89	389.79		390.06	0.002779	5.17	296.41	120.52	0.42
Little Plumtree	7261	7-30-2016	927.84	382.89	390.09		390.36	0.002617	5.22	333.83	126.82	0.41
Little Plumtree	7059	2-YR	156.54	382.53	385.36		385.69	0.006333	4.60	34.06	15.21	0.54
Little Plumtree	7059	10-YR	345.31	382.53	386.86		387.29	0.005434	5.37	74.05	42.49	0.54
Little Plumtree	7059	50-YR	656.54	382.53	388.19		388.75	0.004833	6.43	151.85	74.73	0.54
Little Plumtree	7059	100-YR	817.75	382.53	388.72		389.31	0.004633	6.78	194.55	87.63	0.54
Little Plumtree	7059	7-30-2016	927.84	382.53	389.12		389.68	0.004095	6.72	231.83	97.36	0.51
Little Plumtree	6890	2-YR	156.54	381.04	384.36		384.67	0.005654	4.48	34.92	15.02	0.52
Little Plumtree	6890	10-YR	345.31	381.04	385.69		386.25	0.006819	6.04	60.50	32.54	0.59
Little Plumtree	6890	50-YR	656.54	381.04	387.23		387.85	0.005772	6.75	137.87	62.53	0.57
Little Plumtree	6890	100-YR	817.75	381.04	387.85		388.47	0.005305	6.89	179.97	71.69	0.55
Little Plumtree	6890	7-30-2016	927.84	381.04	388.23		388.88	0.005224	7.14	208.87	88.96	0.56
Little Plumtree	6690	2-YR	156.54	380.59	383.08	382.43	383.43	0.006836	4.76	35.24	21.37	0.58
Little Plumtree	6690	10-YR	345.31	380.59	384.29	383.55	384.86	0.007139	6.22	66.45	30.12	0.62
Little Plumtree	6690	50-YR	656.54	380.59	385.06	384.85	386.20	0.011939	9.03	91.89	37.40	0.83
Little Plumtree	6690	100-YR	817.75	380.59	385.40	385.31	386.81	0.013237	10.09	105.31	41.06	0.89
Little Plumtree	6690	7-30-2016	927.84	380.59	385.62	385.62	387.19	0.013926	10.73	114.56	43.40	0.92

HEC-RAS Plan: T River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	6326	2-YR	156.54	376.15	378.42	378.42	379.21	0.023123	7.10	22.06	14.32	1.01
Little Plumtree	6326	10-YR	345.31	376.15	379.55	379.55	380.72	0.020114	8.67	40.07	18.64	0.99
Little Plumtree	6326	50-YR	656.54	376.15	381.07	381.07	382.08	0.010563	8.63	120.27	80.98	0.78
Little Plumtree	6326	100-YR	817.75	376.15	381.50	381.50	382.53	0.010037	9.02	156.64	91.32	0.77
Little Plumtree	6326	7-30-2016	927.84	376.15	381.73	381.73	382.79	0.009909	9.29	178.99	95.63	0.77
Little Plumtree	6045	2-YR	156.54	372.69	376.99	374.44	377.05	0.000709	2.02	77.56	22.22	0.19
Little Plumtree	6045	10-YR	345.31	372.69	378.46	375.32	378.61	0.001059	3.07	123.20	44.47	0.24
Little Plumtree	6045	50-YR	656.54	372.69	379.89	376.47	380.15	0.001426	4.23	211.25	78.24	0.30
Little Plumtree	6045	100-YR	817.75	372.69	380.45	376.97	380.75	0.001527	4.63	256.78	83.53	0.31
Little Plumtree	6045	7-30-2016	927.84	372.69	380.80	377.28	381.12	0.001583	4.87	286.32	86.78	0.32
Little Plumtree	5847	2-YR	156.54	372.61	376.60		376.78	0.002917	3.47	45.10	17.48	0.38
Little Plumtree	5847	10-YR	345.31	372.61	377.80		378.20	0.004456	5.06	68.84	25.18	0.49
Little Plumtree	5847	50-YR	656.54	372.61	378.84		379.58	0.006079	7.08	113.03	53.79	0.60
Little Plumtree	5847	100-YR	817.75	372.61	379.26	378.39	380.14	0.006529	7.80	136.41	57.22	0.63
Little Plumtree	5847	7-30-2016	927.84	372.61	379.52	378.81	380.48	0.006753	8.22	151.85	59.38	0.64
Little Plumtree	5668	2-YR	156.54	371.75	376.04		376.24	0.003197	3.59	43.57	16.95	0.40
Little Plumtree	5668	10-YR	345.31	371.75	377.08		377.42	0.004121	4.93	104.35	75.96	0.47
Little Plumtree	5668	50-YR	656.54	371.75	378.25		378.63	0.003764	5.73	205.15	94.50	0.47
Little Plumtree	5668	100-YR	817.75	371.75	378.77		379.15	0.003503	5.94	255.91	100.60	0.46
Little Plumtree	5668	7-30-2016	927.84	371.75	379.09		379.48	0.003374	6.07	289.13	104.40	0.46
Little Plumtree	5520	2-YR	156.54	371.96	374.94	374.49	375.42	0.010497	5.56	29.10	25.93	0.70
Little Plumtree	5520	10-YR	345.31	371.96	376.29		376.70	0.005583	5.75	101.89	67.97	0.56
Little Plumtree	5520	50-YR	656.54	371.96	377.70		378.06	0.003814	6.02	209.50	82.33	0.49
Little Plumtree	5520	100-YR	817.75	371.96	378.25		378.63	0.003593	6.29	255.78	87.51	0.48
Little Plumtree	5520	7-30-2016	927.84	371.96	378.56		378.96	0.003596	6.54	284.09	92.16	0.49
Little Plumtree	5442	2-YR	156.54	371.22	374.76	373.43	374.96	0.002782	3.68	52.40	37.17	0.38
Little Plumtree	5442	10-YR	345.31	371.22	376.08	374.71	376.37	0.002783	4.75	117.96	61.76	0.41
Little Plumtree	5442	50-YR	656.54	371.22	377.45	375.93	377.81	0.002785	5.74	219.20	86.01	0.43
Little Plumtree	5442	100-YR	817.75	371.22	377.99	376.39	378.38	0.002782	6.11	268.56	95.20	0.44
Little Plumtree	5442	7-30-2016	927.84	371.22	378.32	376.68	378.72	0.002781	6.32	299.93	98.91	0.44

HEC-RAS Plan: T River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	9415	2-YR	400.04	399.84	0.21	0.41	0.01		189.00		25.34	0.48
Little Plumtree	9415	10-YR	401.88	401.69	0.19	0.19	0.01	4.78	370.53	21.70	66.30	0.38
Little Plumtree	9415	50-YR	402.91	402.60	0.30	0.26	0.01	22.23	607.56	68.21	81.66	0.62
Little Plumtree	9415	100-YR	403.35	402.98	0.37	0.30	0.02	32.92	730.16	98.92	90.25	0.74
Little Plumtree	9415	7-30-2016	403.53	403.12	0.40	0.32	0.02	38.08	792.70	114.21	94.39	0.82
Little Plumtree	9282	2-YR	399.62	399.46	0.16	0.11	0.02	0.59	187.38	1.03	32.20	0.35
Little Plumtree	9282	10-YR	401.68	401.53	0.15	0.06	0.01	20.04	344.72	32.24	74.89	0.30
Little Plumtree	9282	50-YR	402.63	402.37	0.26	0.09	0.00	64.72	560.53	72.75	109.41	0.54
Little Plumtree	9282	100-YR	403.03	402.72	0.31	0.11	0.00	98.01	663.95	100.04	126.54	0.66
Little Plumtree	9282	7-30-2016	403.19	402.85	0.34	0.12	0.00	115.64	715.99	113.37	131.84	0.73
Little Plumtree	9224	2-YR	399.50	399.39	0.11				189.00		27.75	0.23
Little Plumtree	9224	10-YR	401.62	401.49	0.13			3.78	386.92	6.30	55.87	0.23
Little Plumtree	9224	50-YR	402.53	402.28	0.25			13.28	654.80	29.91	111.90	0.46
Little Plumtree	9224	100-YR	402.92	402.62	0.30			25.61	778.74	57.64	160.39	0.56
Little Plumtree	9224	7-30-2016	403.07	402.73	0.34			32.63	841.59	70.78	179.10	0.63
Little Plumtree	9100		Culvert									
Little Plumtree	9094	2-YR	397.65	396.86	0.79	0.25	0.08		189.00		16.91	0.32
Little Plumtree	9094	10-YR	399.22	398.52	0.71	0.12	0.19	0.40	396.60		23.14	0.24
Little Plumtree	9094	50-YR	401.14	400.42	0.72	0.08	0.35	7.55	687.36	3.09	45.19	0.21
Little Plumtree	9094	100-YR	402.08	401.51	0.56	0.06	0.47	23.27	784.23	54.50	131.09	0.17
Little Plumtree	9094	7-30-2016	402.47	402.01	0.47	0.05	0.47	52.87	801.05	91.07	146.03	0.14
Little Plumtree	9033	2-YR	397.33	396.28	1.05	0.37	0.06		188.99	0.01	15.19	0.43
Little Plumtree	9033	10-YR	398.91	397.56	1.35	0.28	0.01	1.50	393.31	2.20	20.08	0.46
Little Plumtree	9033	50-YR	400.71	398.81	1.90	0.25	0.03	8.66	678.66	10.68	24.92	0.58
Little Plumtree	9033	100-YR	401.55	399.43	2.12	0.24	0.04	14.86	830.25	16.88	29.53	0.63
Little Plumtree	9033	7-30-2016	401.96	399.93	2.03	0.14	0.20	19.35	902.22	23.43	40.76	0.58
Little Plumtree	8938	2-YR	396.99	396.04	0.95	0.81	0.03	0.01	188.97	0.02	15.40	0.38
Little Plumtree	8938	10-YR	398.62	397.12	1.49	0.69	0.07	1.68	392.91	2.41	20.41	0.51
Little Plumtree	8938	50-YR	400.43	398.26	2.17	0.62	0.08	8.65	676.75	12.60	25.89	0.68
Little Plumtree	8938	100-YR	401.28	398.81	2.47	0.59	0.09	14.55	827.23	20.22	30.10	0.75
Little Plumtree	8938	7-30-2016	401.61	400.26	1.35	0.34	0.23	37.18	842.17	65.65	102.76	0.40
Little Plumtree	8776	2-YR	396.14	394.86	1.28	0.99	0.00		189.00		14.60	0.54
Little Plumtree	8776	10-YR	397.86	395.72	2.15	0.95	0.01	0.60	395.34	1.05	18.71	0.78
Little Plumtree	8776	50-YR	399.73	396.75	2.99	0.84	0.04	5.62	684.06	8.32	23.69	0.97
Little Plumtree	8776	100-YR	400.60	397.23	3.37	0.80	0.04	10.37	836.72	14.90	26.03	1.06
Little Plumtree	8776	7-30-2016	401.04	397.42	3.63	0.80	0.04	12.85	913.70	18.45	27.03	1.13
Little Plumtree	8628	2-YR	395.15	393.81	1.33	1.10	0.07		189.00		14.48	0.57
Little Plumtree	8628	10-YR	396.90	394.61	2.29	1.24	0.07	0.37	396.47	0.16	18.04	0.86
Little Plumtree	8628	50-YR	398.86	395.52	3.34	1.27	0.01	4.62	690.01	3.37	22.67	1.12
Little Plumtree	8628	100-YR	399.76	395.96	3.80	1.23	0.02	8.88	846.03	7.08	25.59	1.22
Little Plumtree	8628	7-30-2016	400.20	396.15	4.05	1.23	0.03	11.62	924.06	9.32	26.86	1.28
Little Plumtree	8459	2-YR	393.98	392.87	1.11	0.73	0.04		189.00		17.09	0.48
Little Plumtree	8459	10-YR	395.58	393.52	2.06	0.82	0.13		396.98	0.02	19.81	0.81
Little Plumtree	8459	50-YR	397.59	394.14	3.44	0.95	0.21	0.07	697.00	0.93	22.37	1.23
Little Plumtree	8459	100-YR	398.51	394.46	4.04	0.20	0.22	0.45	859.35	2.21	23.68	1.39
Little Plumtree	8459	7-30-2016	398.95	394.62	4.33	0.17	0.29	0.78	941.19	3.02	24.43	1.46
Little Plumtree	8329	2-YR	393.21	392.24	0.97	0.37	0.08		189.00		17.84	0.42
Little Plumtree	8329	10-YR	394.64	393.01	1.62	0.26	0.09	0.07	396.92	0.00	20.91	0.62
Little Plumtree	8329	50-YR	396.43	393.69	2.74	0.16	0.16	1.31	696.07	0.62	23.59	0.95
Little Plumtree	8329	100-YR	396.93	395.90	1.03	0.09	0.20	23.95	811.24	26.81	116.33	0.31
Little Plumtree	8329	7-30-2016	397.16	396.28	0.88	0.08	0.17	56.27	835.30	53.43	180.09	0.27
Little Plumtree	8166	2-YR	392.72	392.27	0.45	0.35	0.04	0.09	188.91		20.31	0.17
Little Plumtree	8166	10-YR	394.19	393.53	0.66	0.28	0.06	2.35	394.13	0.52	28.85	0.22
Little Plumtree	8166	50-YR	395.86	395.25	0.60	0.18	0.12	42.71	623.61	31.68	136.07	0.19
Little Plumtree	8166	100-YR	396.63	396.28	0.35	0.12	0.16	113.83	636.90	111.27	181.16	0.13
Little Plumtree	8166	7-30-2016	396.91	396.58	0.33	0.09	0.11	140.45	661.40	143.15	193.41	0.12
Little Plumtree	8010	2-YR	392.33	391.52	0.81	0.01	0.24	0.21	188.79		33.12	0.33
Little Plumtree	8010	10-YR	393.85	392.57	1.29	0.01	0.37	2.96	393.20	0.83	44.00	0.44
Little Plumtree	8010	50-YR	395.56	393.79	1.77	0.01	0.51	12.07	679.12	6.81	54.85	0.55
Little Plumtree	8010	100-YR	396.36	394.37	1.99	0.01	0.58	19.10	830.58	12.32	61.76	0.59
Little Plumtree	8010	7-30-2016	396.71	395.28	1.43	0.00	0.00	43.11	868.81	33.08	136.26	0.42
Little Plumtree	7921	2-YR	390.57	390.55	0.02			0.06	188.81	0.13	77.56	0.01
Little Plumtree	7921	10-YR	391.87	391.83	0.04			0.31	396.26	0.42	87.24	0.01

HEC-RAS Plan: T River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	7921	50-YR	393.46	393.40	0.06			0.78	696.31	0.91	135.22	0.02
Little Plumtree	7921	100-YR	394.32	394.26	0.07			1.07	859.74	1.19	148.65	0.02
Little Plumtree	7921	7-30-2016	394.85	394.78	0.07			1.23	942.43	1.34	155.82	0.02
Little Plumtree	7800		Culvert									
Little Plumtree	7735	2-YR	390.36	390.33	0.04	0.08	0.04	5.11	183.89		102.29	0.08
Little Plumtree	7735	10-YR	391.32	391.23	0.09	0.14	0.06	11.93	385.07		111.76	0.17
Little Plumtree	7735	50-YR	392.25	392.08	0.17	0.21	0.08	22.19	675.81		117.64	0.32
Little Plumtree	7735	100-YR	392.67	392.44	0.22	0.25	0.09	27.88	834.12		120.13	0.40
Little Plumtree	7735	7-30-2016	392.93	392.68	0.24	0.27	0.10	30.88	914.12		121.80	0.43
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	390.24	390.08	0.16	0.19	0.02	2.27	154.28		53.50	0.39
Little Plumtree	7645	10-YR	391.13	390.86	0.27	0.28	0.04	41.15	304.16		70.95	0.55
Little Plumtree	7645	50-YR	391.96	391.51	0.45	0.47	0.05	122.93	535.58		79.60	0.90
Little Plumtree	7645	100-YR	392.32	391.79	0.53	0.57	0.05	173.16	658.63		83.34	1.06
Little Plumtree	7645	7-30-2016	392.56	391.97	0.59	0.64	0.05	210.22	745.35		85.71	1.18
Little Plumtree	7560	2-YR	390.03	389.94	0.08	0.07	0.01	11.01	145.54		71.51	0.17
Little Plumtree	7560	10-YR	390.81	390.68	0.14	0.10	0.02	61.86	283.45		86.09	0.34
Little Plumtree	7560	50-YR	391.43	391.16	0.28	0.17	0.06	152.22	506.29		100.36	0.73
Little Plumtree	7560	100-YR	391.70	391.34	0.36	0.21	0.07	205.77	625.77	0.25	114.19	0.97
Little Plumtree	7560	7-30-2016	391.87	391.45	0.42	0.23	0.09	244.61	709.32	1.65	125.61	1.15
Little Plumtree	7499	2-YR	389.95	389.91	0.04	0.03	0.01	41.42	115.12		115.02	0.10
Little Plumtree	7499	10-YR	390.69	390.63	0.06	0.05	0.00	128.30	198.81	18.20	180.06	0.17
Little Plumtree	7499	50-YR	391.21	391.11	0.09	0.08	0.00	254.29	311.28	92.94	198.82	0.26
Little Plumtree	7499	100-YR	391.42	391.31	0.11	0.09	0.01	320.25	368.02	143.29	204.80	0.32
Little Plumtree	7499	7-30-2016	391.55	391.43	0.13	0.10	0.01	365.92	407.42	181.01	206.05	0.37
Little Plumtree	7437	2-YR	389.92	389.90	0.02			1.06	155.49		66.84	0.06
Little Plumtree	7437	10-YR	390.64	390.60	0.05			27.42	287.42	30.48	194.66	0.14
Little Plumtree	7437	50-YR	391.12	391.05	0.08			111.98	438.74	105.83	255.08	0.27
Little Plumtree	7437	100-YR	391.32	391.23	0.09			171.55	495.80	150.39	261.21	0.32
Little Plumtree	7437	7-30-2016	391.44	391.35	0.10			215.65	532.08	182.31	264.89	0.35
Little Plumtree	7400		Culvert									
Little Plumtree	7358	2-YR	387.36	387.22	0.14	0.32	0.05	1.54	155.00		31.99	0.30
Little Plumtree	7358	10-YR	388.64	388.45	0.19	0.30	0.04	18.91	326.40		46.52	0.36
Little Plumtree	7358	50-YR	389.84	389.58	0.26	0.27	0.01	82.16	574.38		129.77	0.53
Little Plumtree	7358	100-YR	390.30	390.11	0.19	0.22	0.02	191.79	607.26	18.70	248.49	0.44
Little Plumtree	7358	7-30-2016	390.58	390.43	0.14	0.19	0.03	269.82	602.83	57.39	269.12	0.36
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	386.98	386.66	0.32	1.30	0.00		156.54		16.12	0.76
Little Plumtree	7261	10-YR	388.31	388.00	0.31	1.00	0.01	56.97	288.04	0.30	83.17	0.77
Little Plumtree	7261	50-YR	389.56	389.28	0.28	0.78	0.03	218.55	431.75	6.25	110.48	0.75
Little Plumtree	7261	100-YR	390.06	389.79	0.26	0.71	0.03	317.44	489.23	11.08	120.52	0.74
Little Plumtree	7261	7-30-2016	390.36	390.09	0.26	0.65	0.03	387.58	525.66	14.60	126.82	0.74
Little Plumtree	7059	2-YR	385.69	385.36	0.33	1.01	0.00		156.54		15.21	0.77
Little Plumtree	7059	10-YR	387.29	386.86	0.44	1.03	0.01	8.92	335.78	0.62	42.49	0.93
Little Plumtree	7059	50-YR	388.75	388.19	0.57	0.89	0.01	77.07	573.94	5.53	74.73	1.19
Little Plumtree	7059	100-YR	389.31	388.72	0.60	0.84	0.00	131.43	677.02	9.29	87.63	1.27
Little Plumtree	7059	7-30-2016	389.68	389.12	0.56	0.78	0.01	190.59	724.84	12.41	97.36	1.21
Little Plumtree	6890	2-YR	384.67	384.36	0.31	1.24	0.00		156.54		15.02	0.72
Little Plumtree	6890	10-YR	386.25	385.69	0.56	1.39	0.00	2.11	343.19		32.54	1.18
Little Plumtree	6890	50-YR	387.85	387.23	0.63	1.60	0.05	79.47	577.07		62.53	1.33
Little Plumtree	6890	100-YR	388.47	387.85	0.62	1.59	0.08	142.51	675.23		71.69	1.35
Little Plumtree	6890	7-30-2016	388.88	388.23	0.65	1.60	0.09	172.10	755.68	0.06	88.96	1.42
Little Plumtree	6690	2-YR	383.43	383.08	0.35	4.17	0.04		153.93	2.61	21.37	0.82
Little Plumtree	6690	10-YR	384.86	384.29	0.56	4.08	0.06		322.63	22.68	30.12	1.24
Little Plumtree	6690	50-YR	386.20	385.06	1.15	4.08	0.04	0.36	588.66	67.52	37.40	2.47
Little Plumtree	6690	100-YR	386.81	385.40	1.41	4.18	0.11	2.30	719.08	96.36	41.06	3.00
Little Plumtree	6690	7-30-2016	387.19	385.62	1.57	4.25	0.16	4.88	805.86	117.09	43.40	3.33
Little Plumtree	6326	2-YR	379.21	378.42	0.78	0.58	0.22		156.54		14.32	2.03
Little Plumtree	6326	10-YR	380.72	379.55	1.17	0.79	0.31		345.14	0.17	18.64	2.65
Little Plumtree	6326	50-YR	382.08	381.07	1.01	0.85	0.23	75.21	568.80	12.53	80.98	2.24
Little Plumtree	6326	100-YR	382.53	381.50	1.03	0.88	0.22	138.24	660.04	19.46	91.32	2.36

HEC-RAS Plan: T River: Little Plumtree Reach: Little Plumtree (Continued)

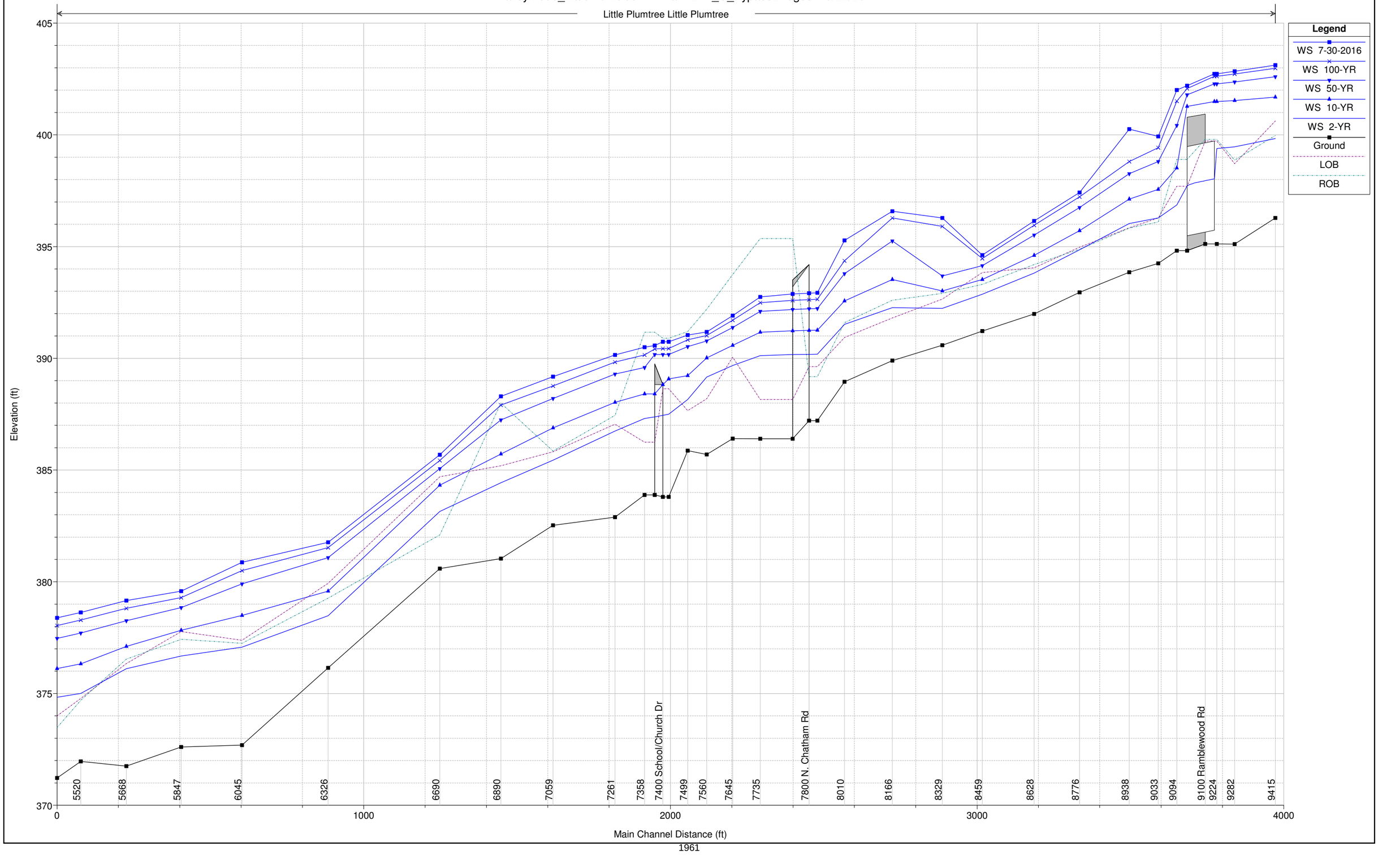
Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	6326	7-30-2016	382.79	381.73	1.05	0.90	0.22	185.33	718.25	24.26	95.63	2.46
Little Plumtree	6045	2-YR	377.05	376.99	0.06	0.25	0.01		156.54		22.22	0.13
Little Plumtree	6045	10-YR	378.61	378.46	0.14	0.38	0.03	3.07	340.56	1.68	44.47	0.27
Little Plumtree	6045	50-YR	380.15	379.89	0.26	0.51	0.05	35.27	605.15	16.13	78.24	0.47
Little Plumtree	6045	100-YR	380.75	380.45	0.30	0.55	0.06	68.27	721.70	27.77	83.53	0.54
Little Plumtree	6045	7-30-2016	381.12	380.80	0.32	0.57	0.06	93.95	797.35	36.54	86.78	0.59
Little Plumtree	5847	2-YR	376.78	376.60	0.19	0.54	0.00		156.54		17.48	0.41
Little Plumtree	5847	10-YR	378.20	377.80	0.40	0.77	0.02	0.00	345.04	0.26	25.18	0.81
Little Plumtree	5847	50-YR	379.58	378.84	0.75	0.85	0.11	15.30	630.55	10.69	53.79	1.45
Little Plumtree	5847	100-YR	380.14	379.26	0.88	0.84	0.15	32.72	761.52	23.51	57.22	1.71
Little Plumtree	5847	7-30-2016	380.48	379.52	0.96	0.83	0.17	47.07	847.03	33.74	59.38	1.86
Little Plumtree	5668	2-YR	376.24	376.04	0.20	0.79	0.03		156.54		16.95	0.45
Little Plumtree	5668	10-YR	377.42	377.08	0.34	0.71	0.01	38.31	306.89	0.11	75.96	0.77
Little Plumtree	5668	50-YR	378.63	378.25	0.38	0.56	0.00	176.58	477.68	2.28	94.50	0.94
Little Plumtree	5668	100-YR	379.15	378.77	0.38	0.52	0.00	262.29	550.99	4.47	100.60	0.97
Little Plumtree	5668	7-30-2016	379.48	379.09	0.39	0.51	0.00	322.56	598.99	6.29	104.40	0.99
Little Plumtree	5520	2-YR	375.42	374.94	0.48	0.38	0.08	0.28	156.19	0.07	25.93	1.16
Little Plumtree	5520	10-YR	376.70	376.29	0.41	0.29	0.04	64.32	273.38	7.60	67.97	1.04
Little Plumtree	5520	50-YR	378.06	377.70	0.37	0.25	0.00	215.53	407.73	33.28	82.33	1.01
Little Plumtree	5520	100-YR	378.63	378.25	0.38	0.24	0.00	294.66	475.53	47.55	87.51	1.06
Little Plumtree	5520	7-30-2016	378.96	378.56	0.40	0.24	0.00	346.02	524.20	57.62	92.16	1.13
Little Plumtree	5442	2-YR	374.96	374.76	0.20			2.74	149.09	4.71	37.17	0.45
Little Plumtree	5442	10-YR	376.37	376.08	0.29			38.61	282.45	24.25	61.76	0.65
Little Plumtree	5442	50-YR	377.81	377.45	0.36			142.86	454.06	59.62	86.01	0.87
Little Plumtree	5442	100-YR	378.38	377.99	0.39			208.87	530.64	78.23	95.20	0.96
Little Plumtree	5442	7-30-2016	378.72	378.32	0.40			258.74	578.48	90.61	98.91	1.01

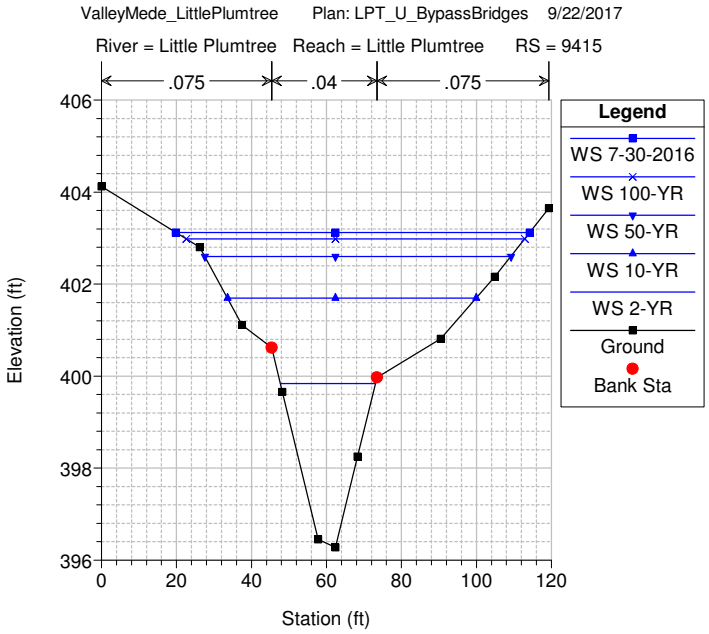
Appendix H-15

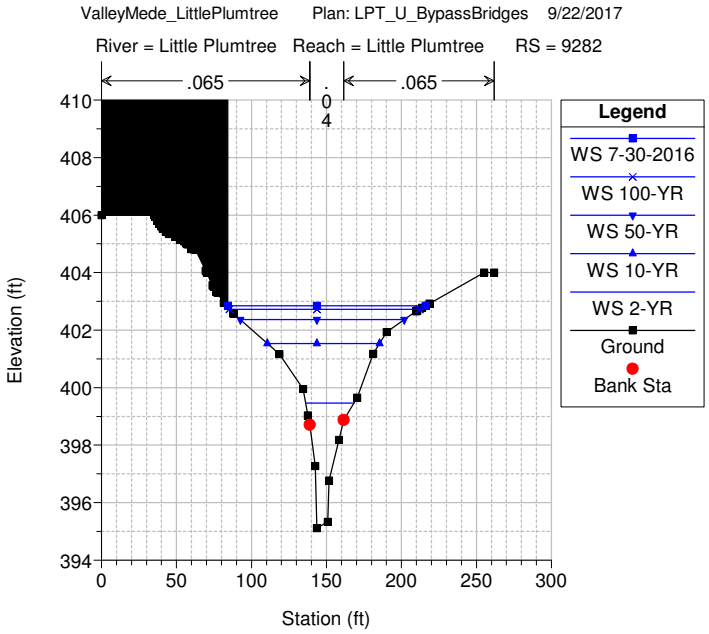
Little Plumtree Branch: Option U Hydraulic Modeling

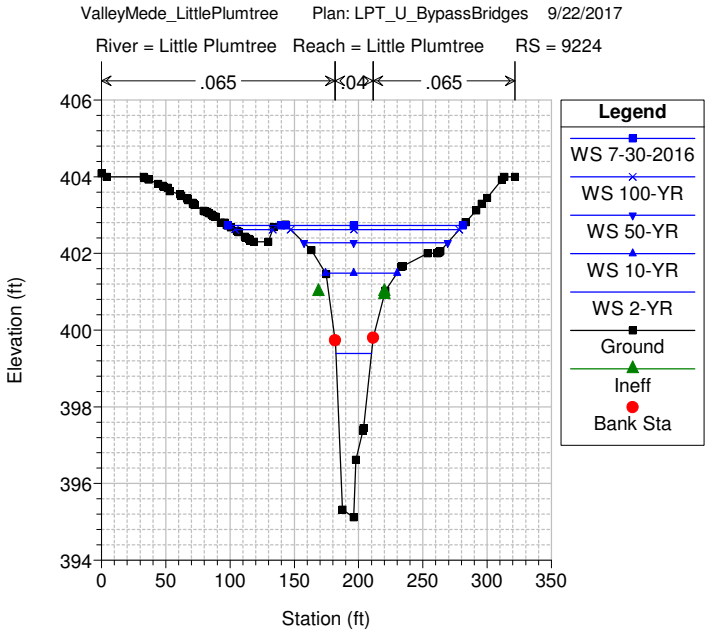
ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017

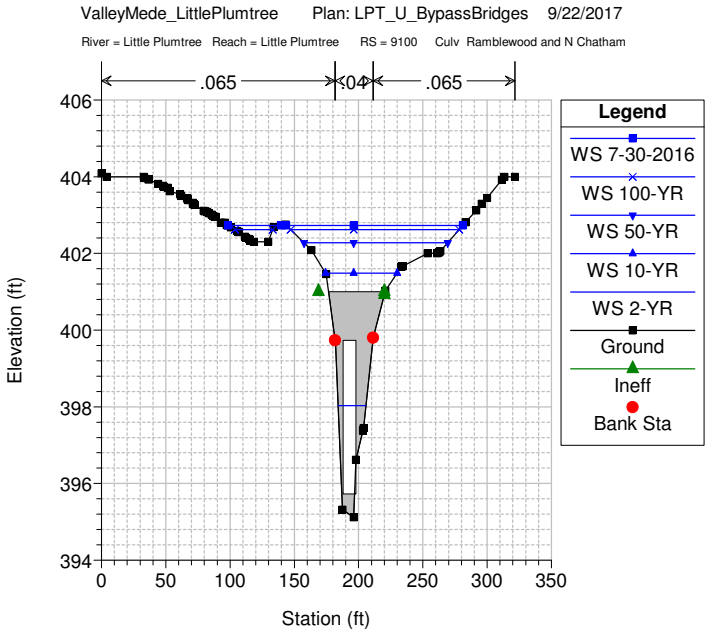
Little Plumtree Little Plumtree

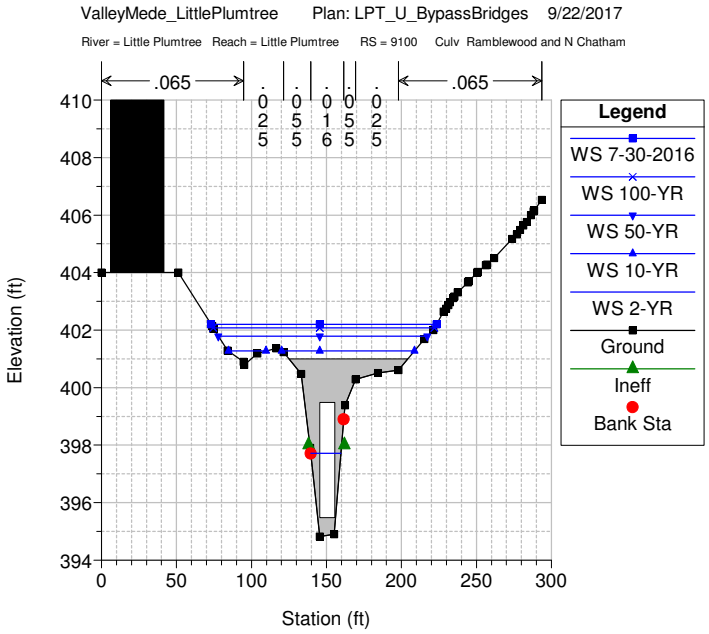


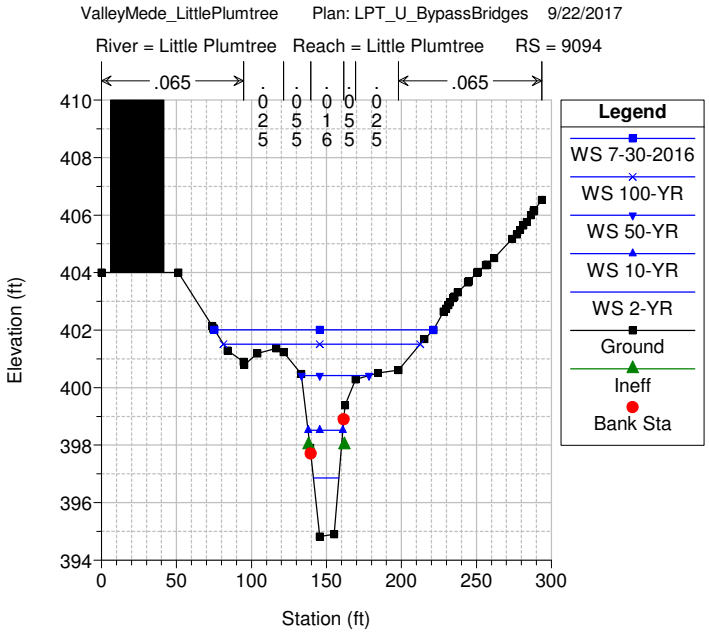

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9415
.075
.04
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

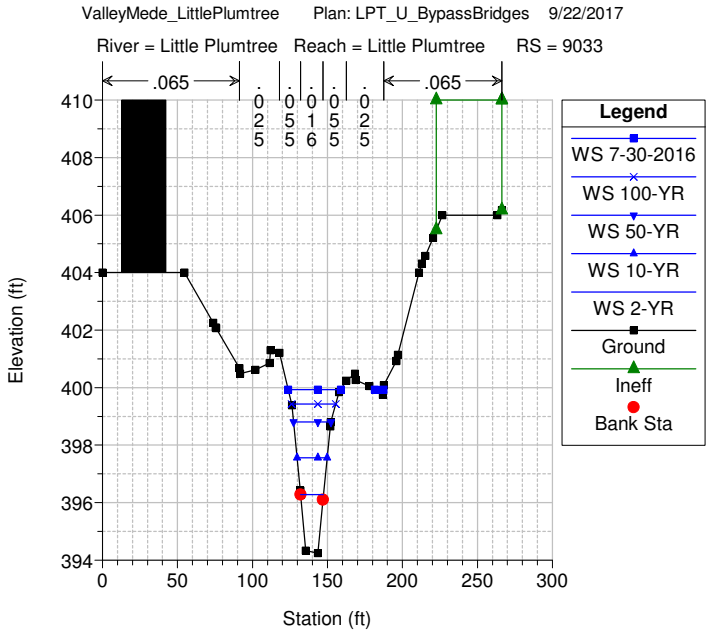

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9282
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

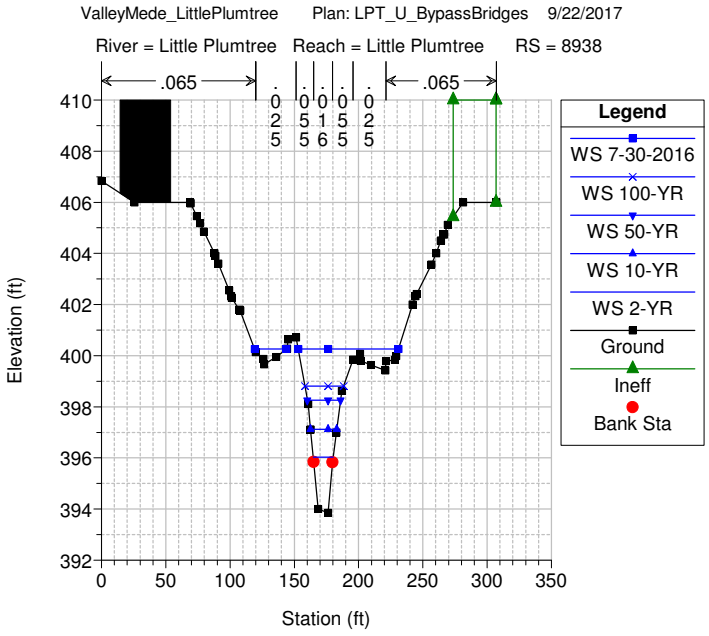

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9224
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

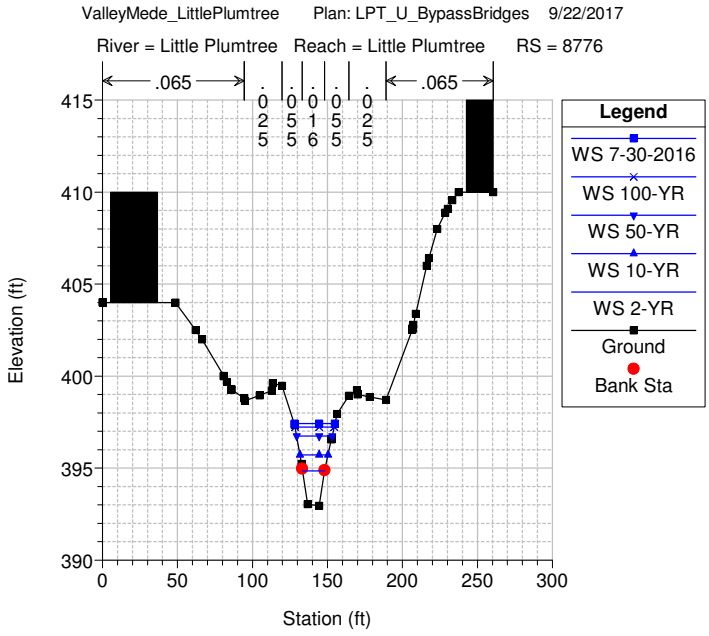

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9100 Culv Ramblewood and N Chatham
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

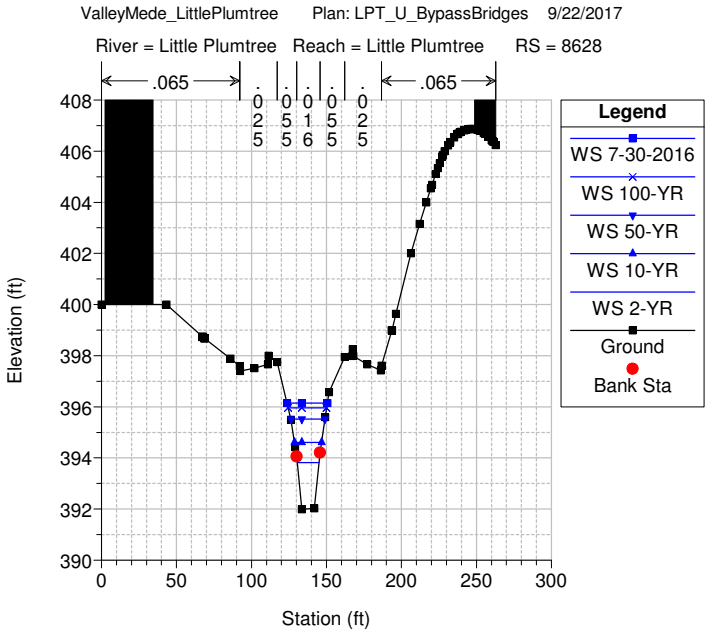

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9100 Culv Ramblewood and N Chatham
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

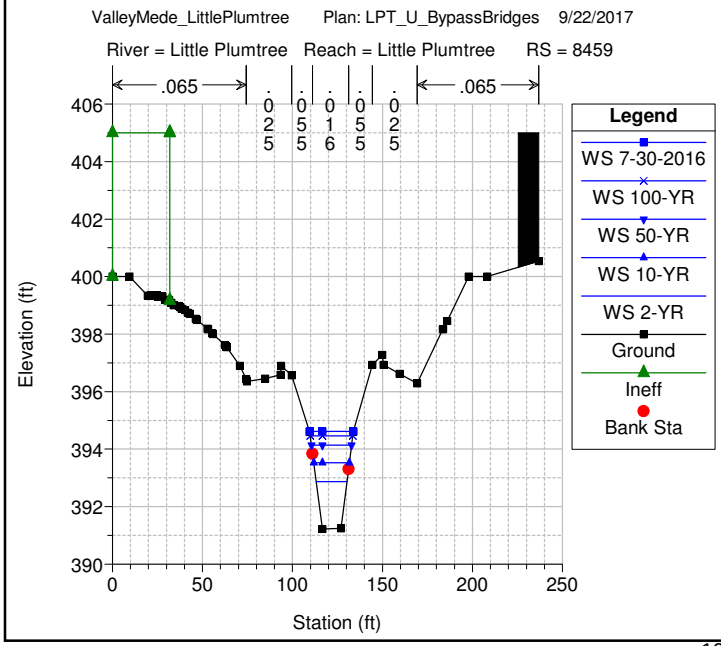

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9094
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

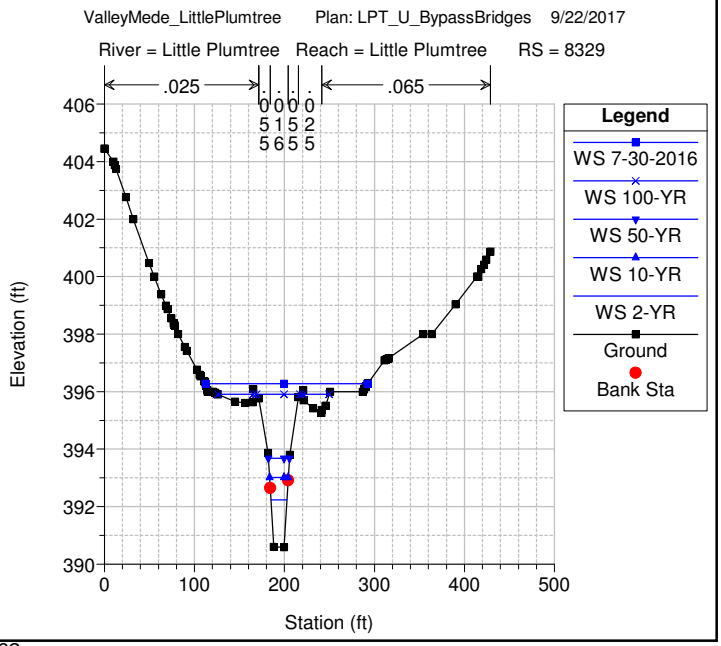

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 9033
.065 .025 .055 .016 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

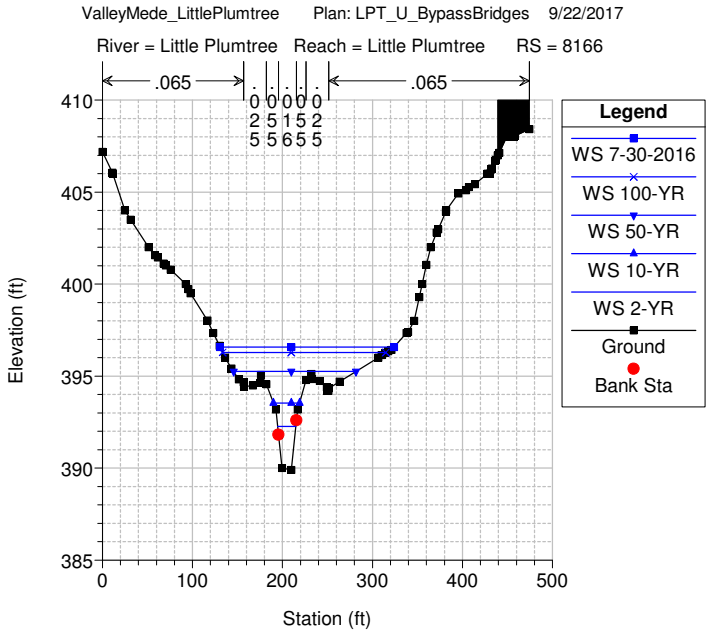

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8938
.065 .025 .055 .016 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

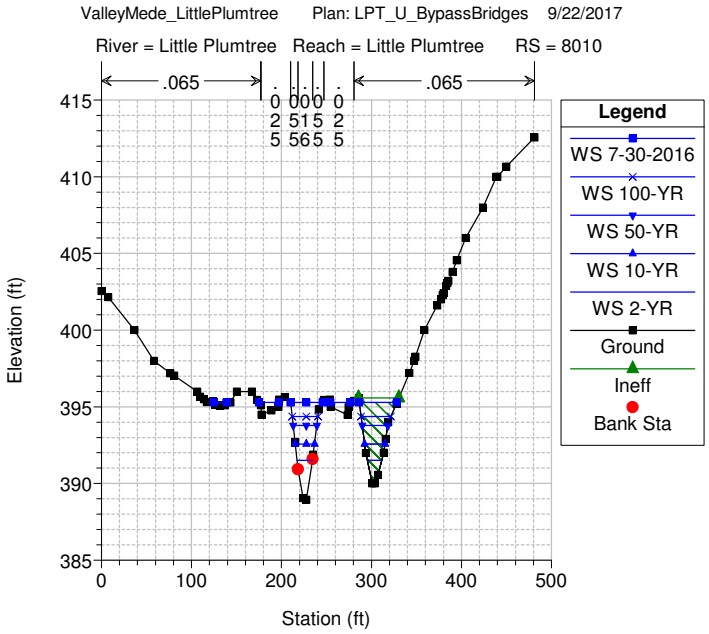

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8776
.065 .025 .055 .016 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

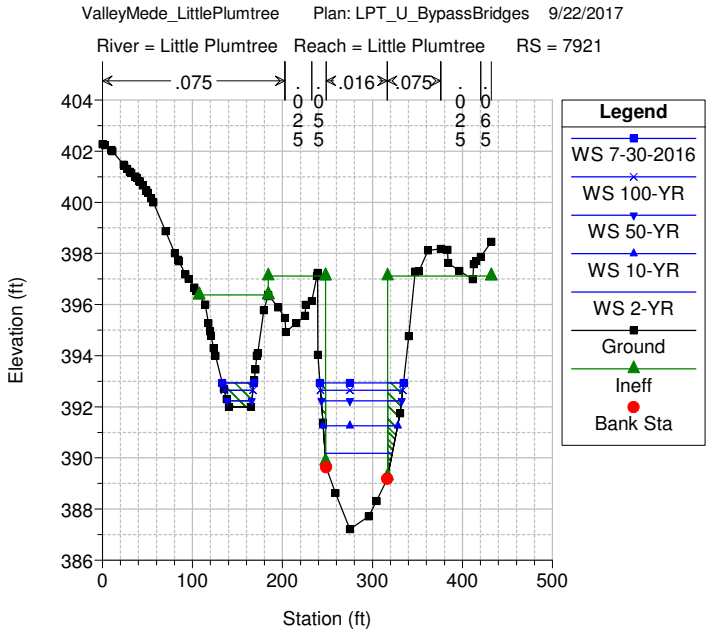

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8628
.065 .025 .055 .016 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

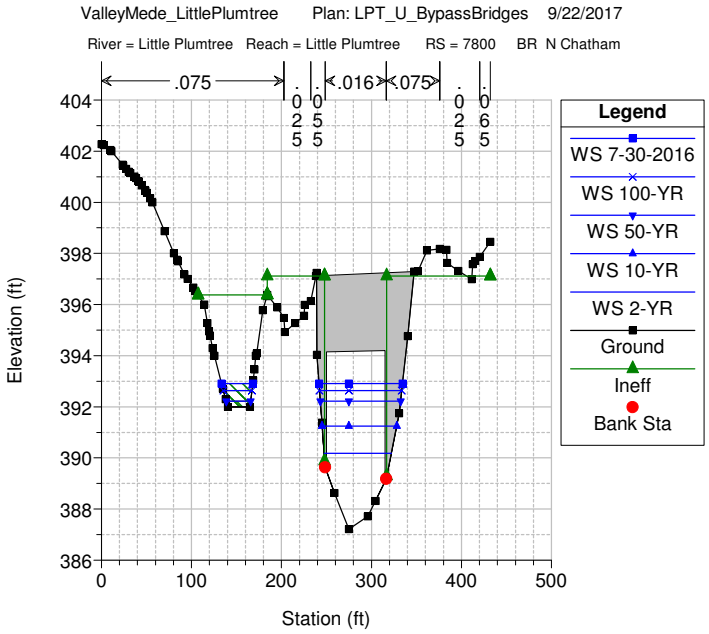

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8459
.065 .025 .055 .016 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

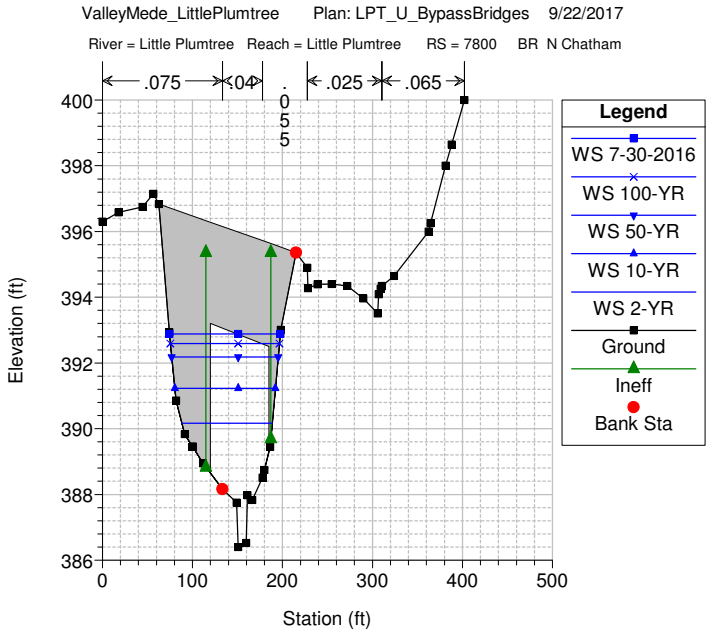

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8329
.025 .051 .056 .015 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

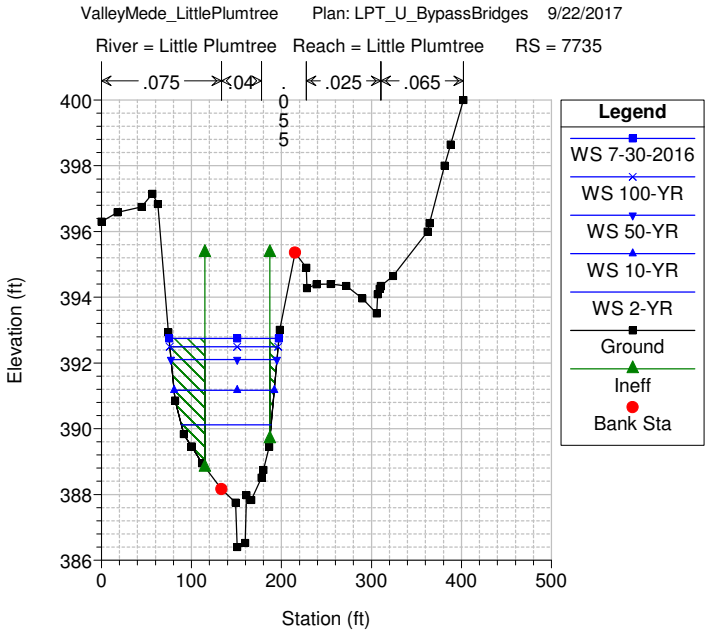

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8166
.065
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

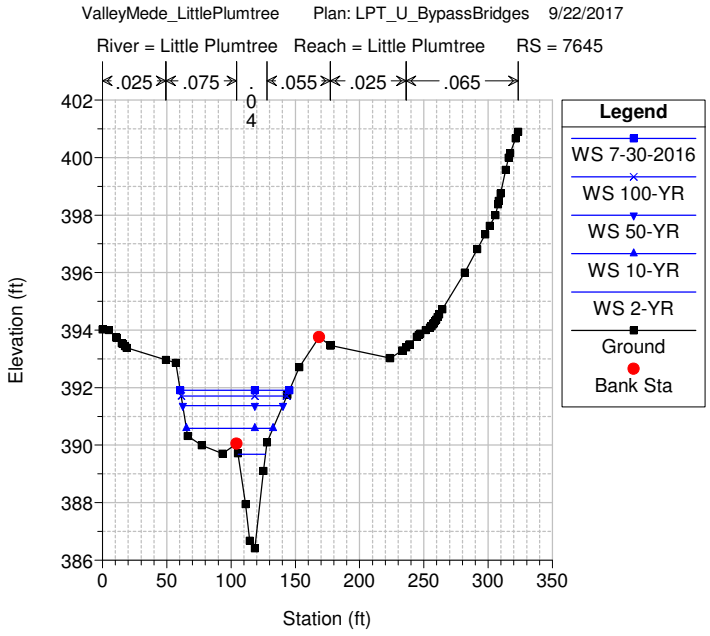

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 8010
.065
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

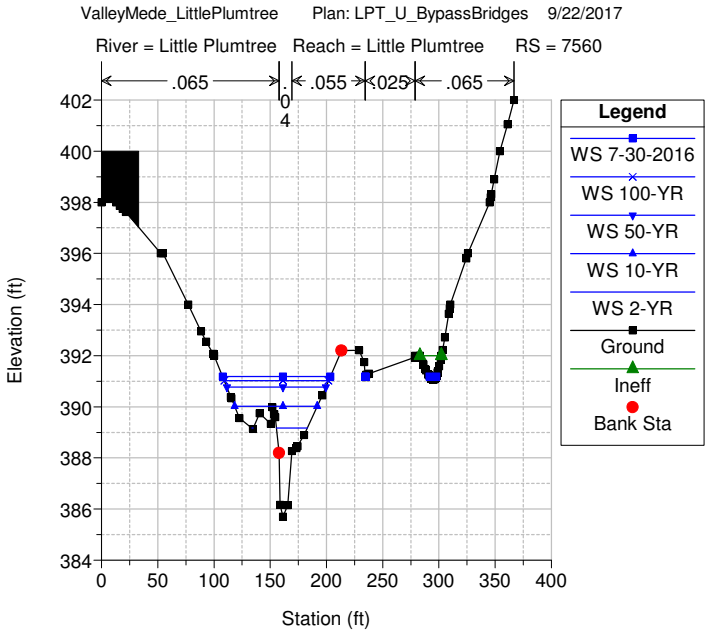

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7921
.075
.016
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

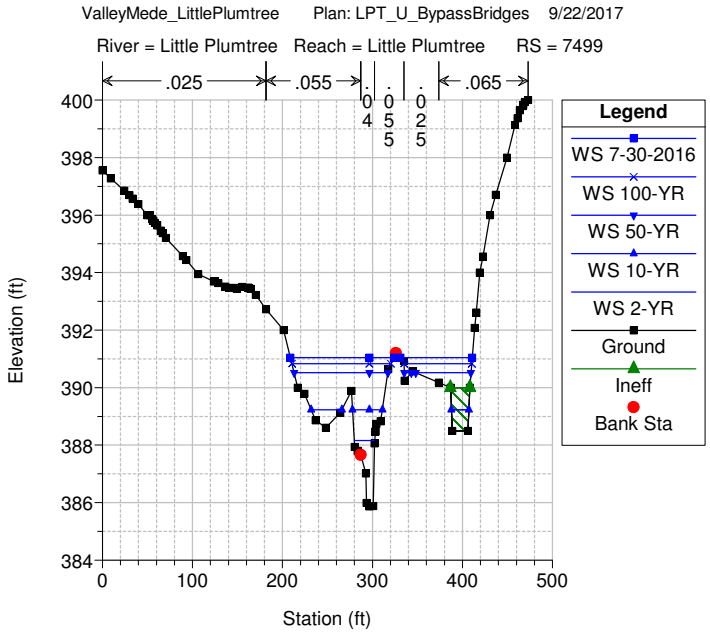

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7800 BR N Chatham
.075
.016
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

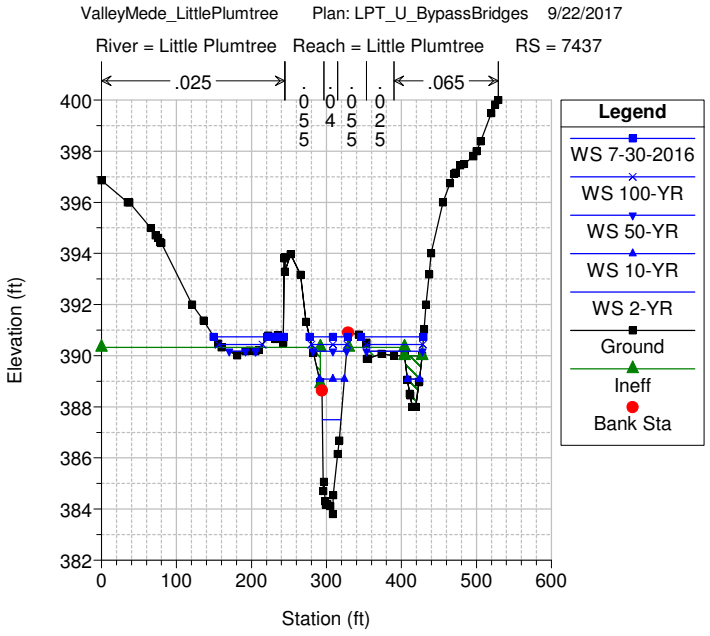

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7800 BR N Chatham
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

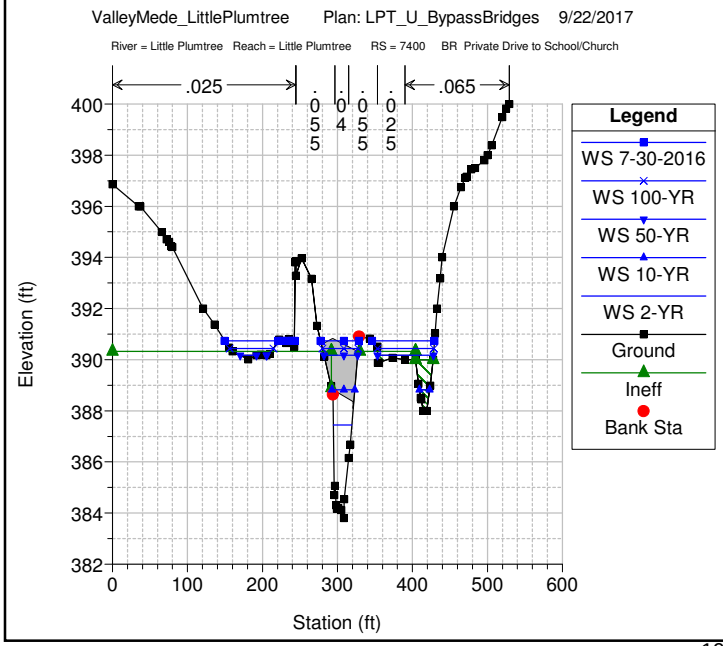

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7735
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

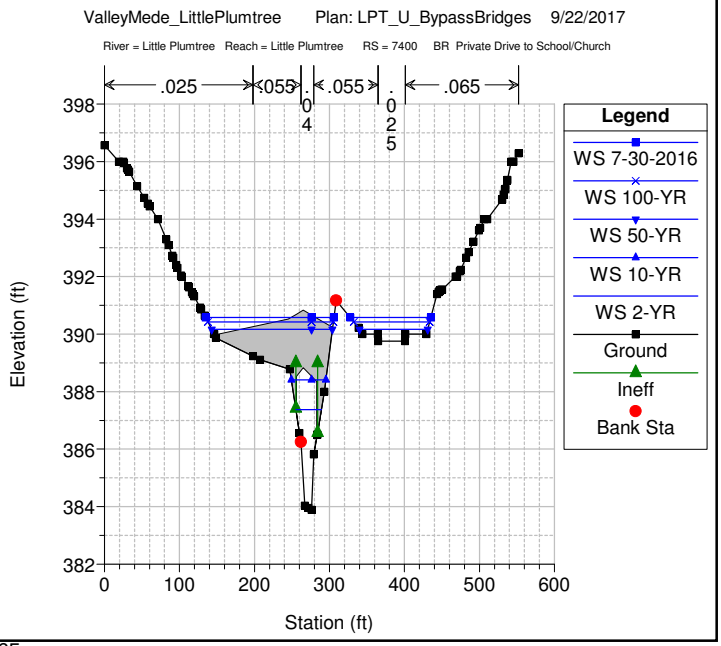

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7645
.025 .075 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

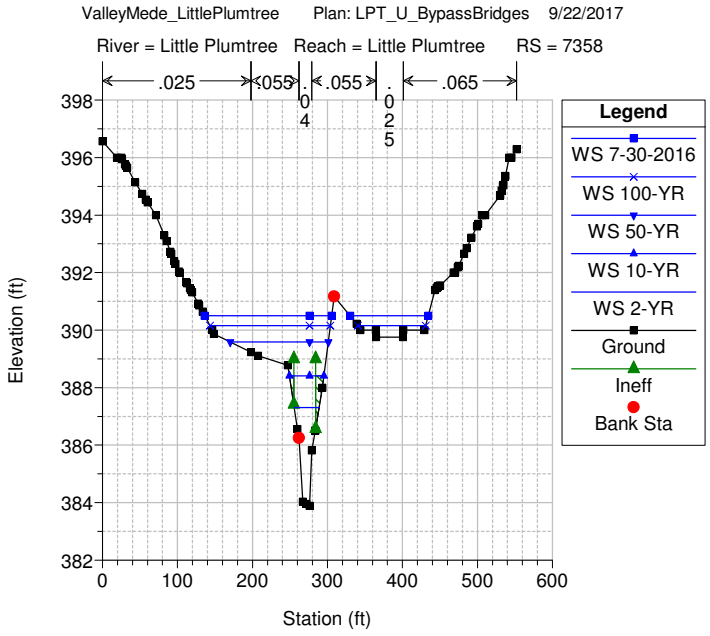

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7560
.065 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

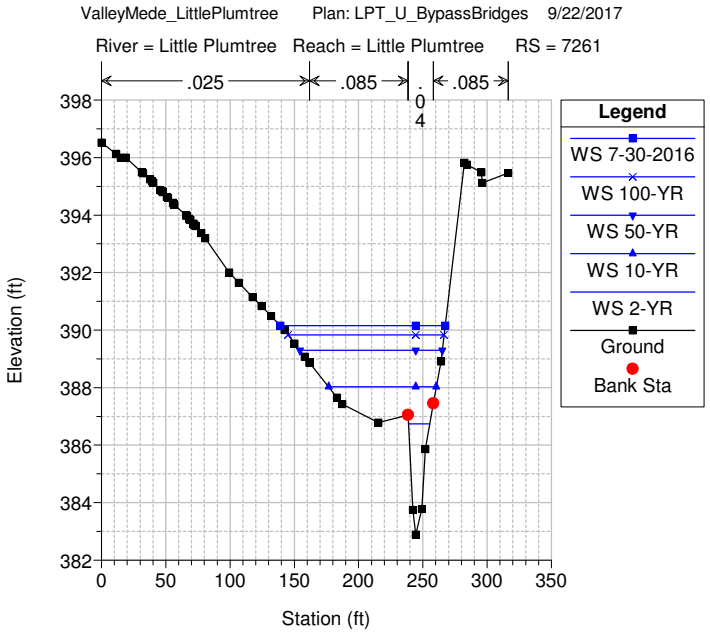

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7499
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

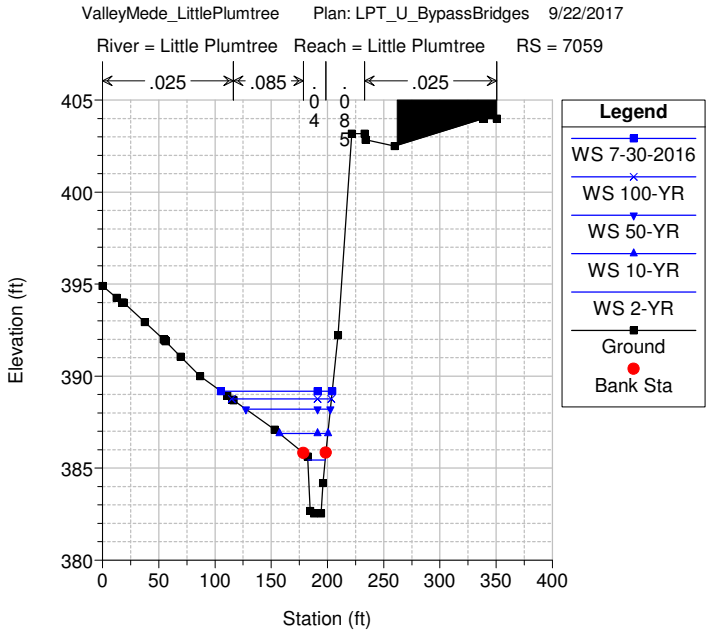

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7437
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

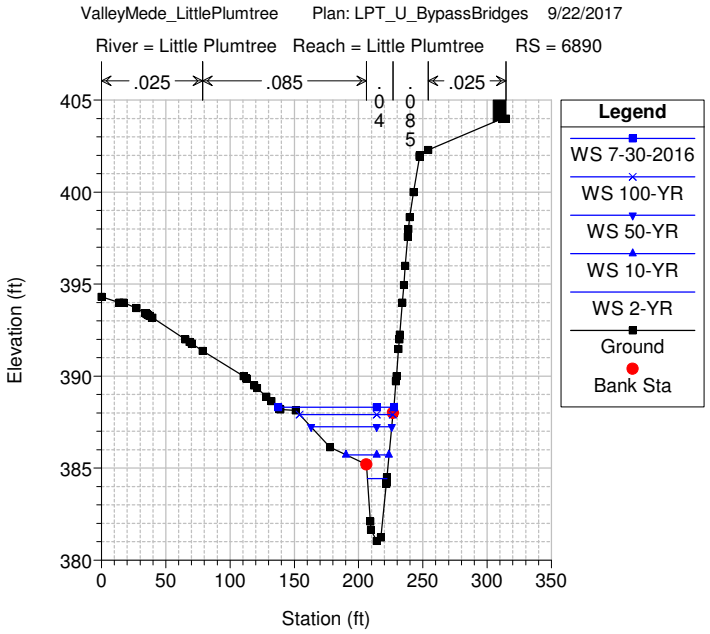

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7400 BR Private Drive to School/Church
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

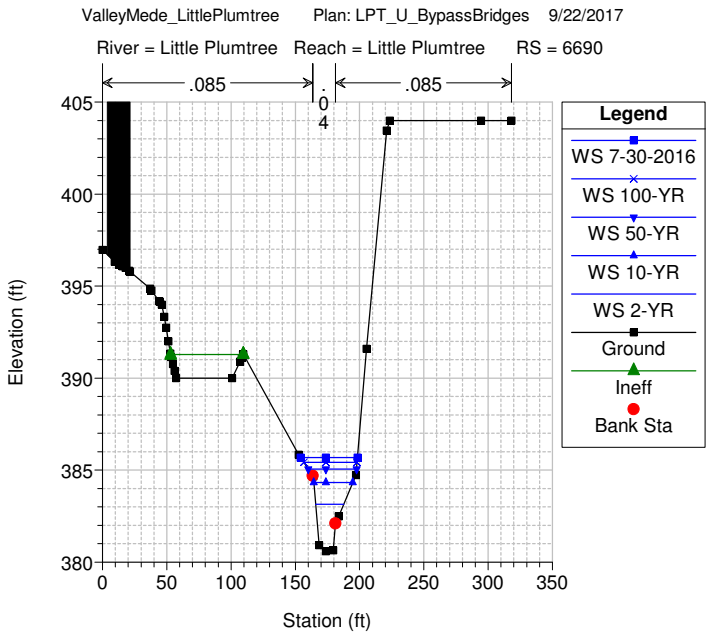

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7400 BR Private Drive to School/Church
.025 .055 .04 .055 .025 .065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

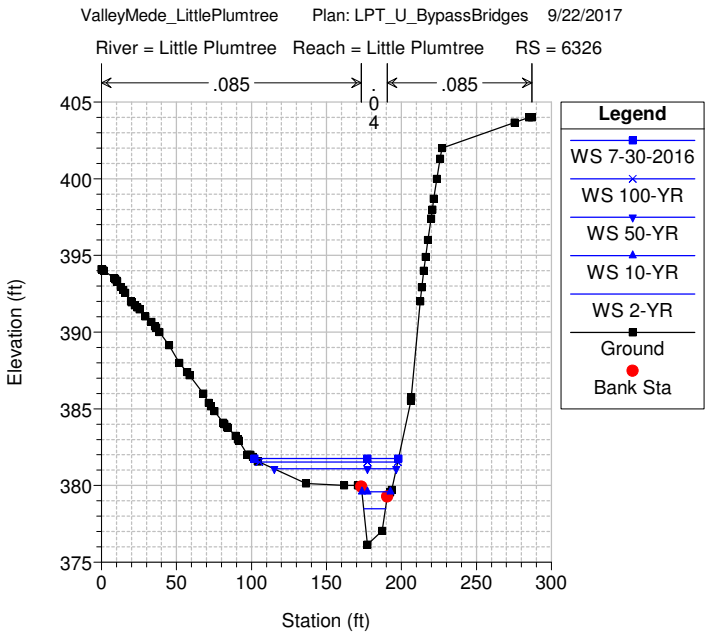

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7358
.025
.055
.055
.065
.04
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

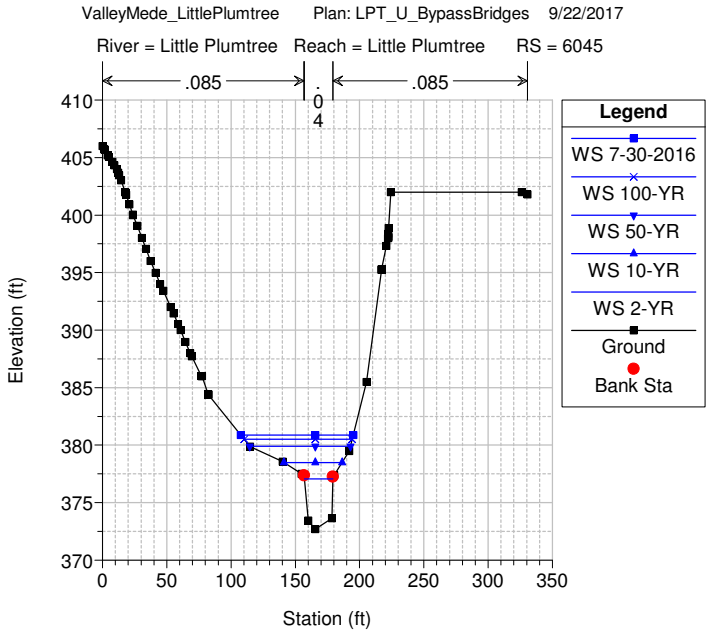

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7261
.025
.085
.085
.04
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

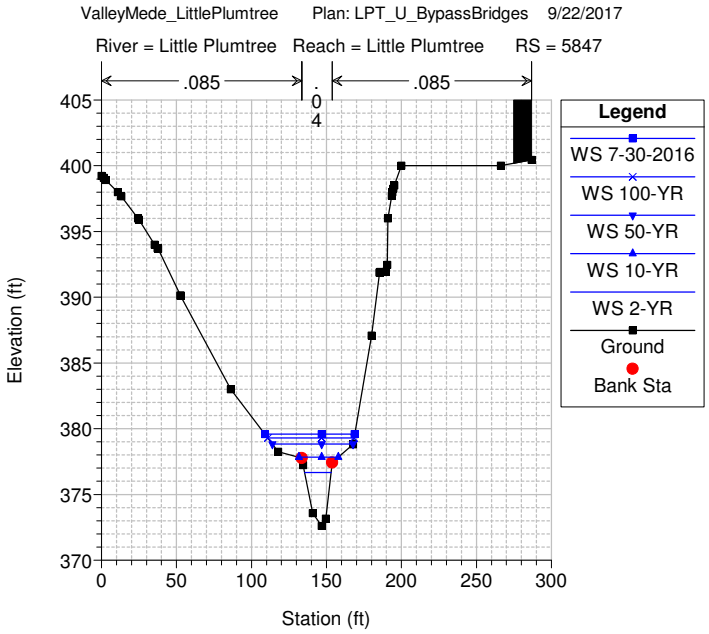

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 7059
.025
.085
.04
.085
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

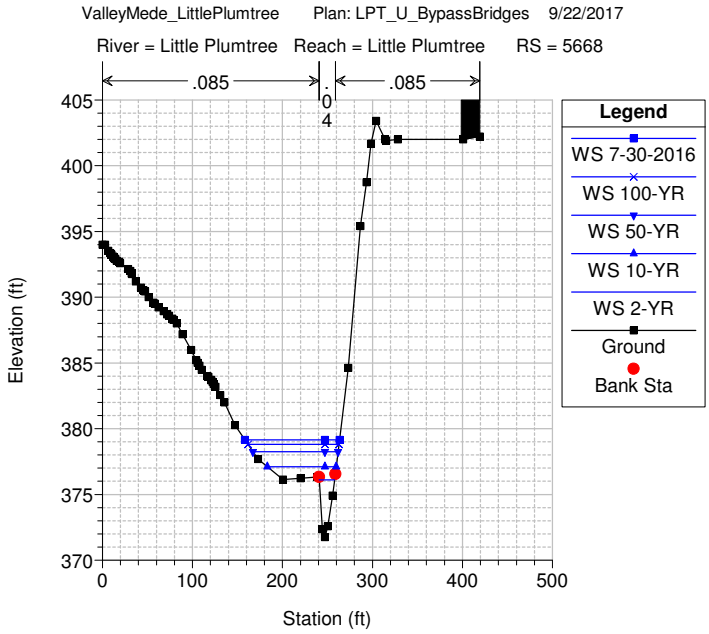

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6890
.025
.085
.04
.085
.025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

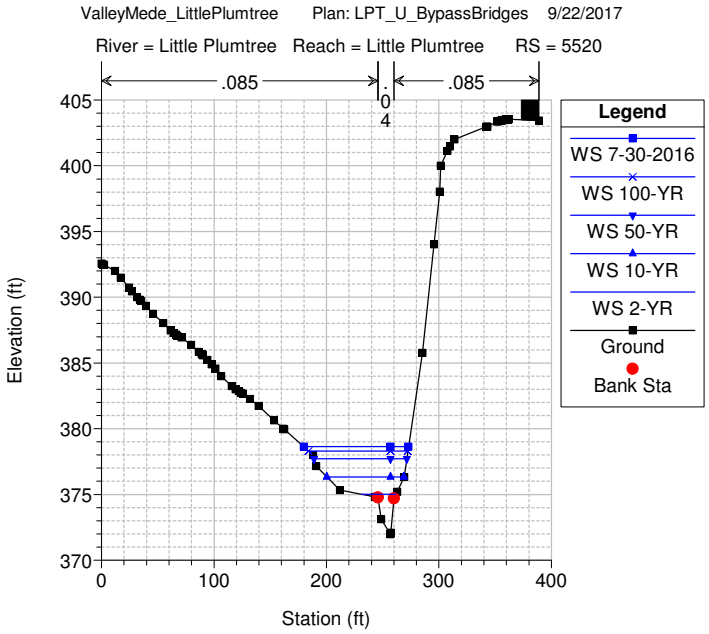

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6690
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

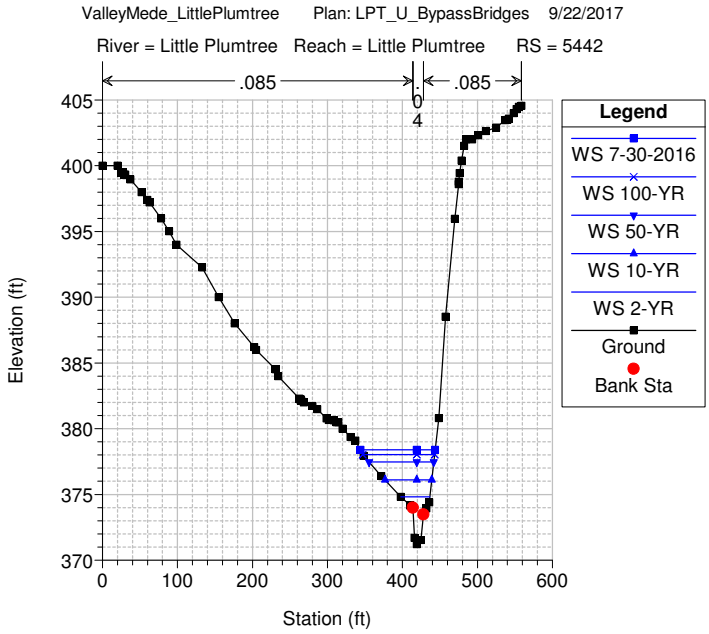

ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6326
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 6045
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5847
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5668
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5520
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_U_BypassBridges 9/22/2017
River = Little Plumtree Reach = Little Plumtree RS = 5442
.085
.04
.085
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
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PROJECT DATA
Project Title: ValleyMede_LittlePlumtree
Project File : ValleyMedeLittlePlumtree.prj
Run Date and Time: 9/22/2017 12:55:17 PM

Project in English units

PLAN DATA

Plan Title: LPT_U_BypassBridges
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.p05

Geometry Title: Little Plumtree_U_BypassBridges
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g06

Flow Title : Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Plan Summary Information:
Number of: Cross Sections = 29 Multiple Openings = 0
Culverts = 1 Inline Structures = 0
Bridges = 2 Lateral Structures = 2

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Flow Data (cfs)

River	Reach	RS	2-YR	10-YR	50-YR	100-YR	7-30-2016
Little Plumtree	Little Plumtree	9415	189	397	698	862	945
Little Plumtree	Little Plumtree	7645	190	403	741	927	1058

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Little Plumtree	Little Plumtree	2-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	10-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	50-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	100-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	7-30-2016	Critical	Normal S = 0.00278

GEOMETRY DATA

Geometry Title: Little Plumtree_U_BypassBridges
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g06

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9415

INPUT
Description:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.12	26.24	402.8	37.49	401.11	45.42	400.62	48.26	399.66
57.81	396.45	62.4	396.28	68.31	398.25	73.47	399.97	90.46	400.81
104.93	402.16	119.34	403.65						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	45.42	.04	73.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.42	73.47	133.08	132.78	133.29	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9282

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	35.14	406	35.66	405.94	37.16	405.8	38.48	405.69
39.65	405.61	40.74	405.54	41.04	405.53	43.06	405.42	44.88	405.36
45.26	405.34	49.17	405.25	52.19	405.14	55.17	405.08	56.39	405.02
57.09	404.98	57.75	404.98	60.06	404.81	61.67	404.8	62.71	404.79
69.47	404.07	69.52	404.06	69.61	404.06	70.1	404	73.98	403.56
74.29	403.54	74.75	403.51	76.65	403.33	77.5	403.29	81.52	402.95
87.95	402.58	88.09	402.57	88.21	402.57	118.53	401.16	134.44	399.95
137.69	399.03	137.7	399.03	138.85	398.71	142.58	397.27	143.65	395.11
150.75	395.34	151.63	396.77	158.22	398.18	161.45	398.87	170.55	399.65
181.15	401.18	190.16	401.93	209.71	402.66	209.76	402.66	210.1	402.67
210.35	402.68	210.6	402.68	213.79	402.78	216.31	402.85	218.75	402.92
255.28	404	261.74	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	138.85	.04	161.45	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.85	161.45	61.4	57.86	54.02	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	84.3	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9224

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.82	402.69
143.12	402.75	163.4	402.09	174.73	401.46	181.84	399.73	181.86	399.72
187.51	395.32	196.08	395.12	197.79	396.62	203.28	397.38	203.29	397.39
203.77	397.45	211.36	399.8	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	211.36	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
181.84	211.36	128.56	130.35	131.84	.3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	168.9	401	F
220	321.72	401	F

CULVERT

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9100

INPUT
Description: Ramblewood and N Chatham
Distance from Upstream XS = 38
Deck/Roadway Width = 59
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
170	401	220	401

Upstream Bridge Cross Section Data
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.82	402.69
143.12	402.75	163.4	402.09	174.73	401.46	181.84	399.73	181.86	399.72
187.51	395.32	196.08	395.12	197.79	396.62	203.28	397.38	203.29	397.39
203.77	397.45	211.36	399.8	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	211.36	.065

Bank Sta: Left	Right	Coeff Contr.	Expan.
181.84	211.36	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	168.9	401	F
220	321.72	401	F

Downstream Deck/Roadway Coordinates
num= 2

```
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     100     401             210     401

Downstream Bridge Cross Section Data
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     404   51.12     404   73.72  402.14   74.58  402.06   74.68  402.06
   74.73  402.05    74.8  402.05   74.85  402.04   84.11  401.29   94.67   400.9
   95.13  400.79   103.9  401.19  116.56  401.37  121.51  401.23  133.12  400.48
  139.21  397.91  139.64   397.7  145.48  394.82  155.07   394.9  161.53   398.9
  161.54   398.9  162.31  399.38  169.42  400.29  184.45  400.51  198.05  400.61
  215.34  401.69  221.16     402  228.05  402.64  229.72  402.74  231.21  402.87
  232.43  402.97  234.41  403.11  235.31  403.17  237.42  403.31  244.27  403.66
  244.61  403.68   244.9   403.7  250.59     404  250.91  404.01  250.94  404.02
  256.32  404.26  256.52  404.26  257.04  404.28  261.82   404.5  273.83  405.17
  276.99  405.33  279.05  405.48  281.29  405.64  283.55  405.76   286.4     406
  288.12  406.13  288.52  406.16  293.59  406.53

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   94.67    .025  121.51    .055  139.64    .016  161.53    .055
  169.42    .025  198.05    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        139.64  161.53            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     138     398       F
     162  293.59     398       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     6.1    41.7     410

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                   8      89     .013     .013        0                  .4                1
Upstream   Elevation =  395.73
           Centerline Station =  193
Downstream Elevation =  395.48
           Centerline Station =  150.5

CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        189.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          8.21
  Q Barrel (cfs)            189.00    Culv Vel DS (ft/s)          8.47
  E.G. US. (ft)             399.50    Culv Inv El Up (ft)       395.73
  W.S. US. (ft)             399.39    Culv Inv El Dn (ft)       395.48
  E.G. DS (ft)              397.65    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              396.86    Culv Exit Loss (ft)         1.18
  Delta EG (ft)               1.85    Culv Entr Loss (ft)         0.42
  Delta WS (ft)               2.53    Q Weir (cfs)
  E.G. IC (ft)              399.32    Weir Sta Lft (ft)
  E.G. OC (ft)              399.50    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        398.03    Weir Max Depth (ft)
  Culv WS Outlet (ft)       397.71    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.30    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.23    Min El Weir Flow (ft)     401.01


CULVERT OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        336.34    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          9.80
```

Q Barrel (cfs)	336.34	Culv Vel DS (ft/s)	10.27
E.G. US. (ft)	401.62	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	401.49	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	399.22	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	398.52	Culv Exit Loss (ft)	1.17
Delta EG (ft)	2.39	Culv Entr Loss (ft)	0.96
Delta WS (ft)	2.97	Q Weir (cfs)	60.66
E.G. IC (ft)	401.62	Weir Sta Lft (ft)	172.05
E.G. OC (ft)	401.47	Weir Sta Rgt (ft)	232.50
Culvert Control	Inlet	Weir Submerg	0.00
Culv WS Inlet (ft)	399.16	Weir Max Depth (ft)	0.68
Culv WS Outlet (ft)	398.76	Weir Avg Depth (ft)	0.52
Culv Nml Depth (ft)	3.45	Weir Flow Area (sq ft)	31.22
Culv Crt Depth (ft)	3.28	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	360.49	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	9.01
Q Barrel (cfs)	360.49	Culv Vel DS (ft/s)	9.01
E.G. US. (ft)	402.53	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.28	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	401.14	Culv Frctn Ls (ft)	0.34
W.S. DS (ft)	400.42	Culv Exit Loss (ft)	0.54
Delta EG (ft)	1.39	Culv Entr Loss (ft)	0.50
Delta WS (ft)	1.86	Q Weir (cfs)	337.51
E.G. IC (ft)	402.47	Weir Sta Lft (ft)	107.81
E.G. OC (ft)	402.53	Weir Sta Rgt (ft)	275.81
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	1.60
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	0.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	122.50
Culv Crt Depth (ft)	3.43	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	294.92	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	7.37
Q Barrel (cfs)	294.92	Culv Vel DS (ft/s)	7.37
E.G. US. (ft)	402.92	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.62	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	402.08	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	401.51	Culv Exit Loss (ft)	0.28
Delta EG (ft)	0.85	Culv Entr Loss (ft)	0.34
Delta WS (ft)	1.11	Q Weir (cfs)	567.08
E.G. IC (ft)	402.73	Weir Sta Lft (ft)	89.87
E.G. OC (ft)	402.92	Weir Sta Rgt (ft)	285.98
Culvert Control	Outlet	Weir Submerg	0.16
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	1.99
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	0.97
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	190.69
Culv Crt Depth (ft)	3.00	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	255.39	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	6.38
Q Barrel (cfs)	255.39	Culv Vel DS (ft/s)	6.38
E.G. US. (ft)	403.07	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.73	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	402.47	Culv Frctn Ls (ft)	0.17
W.S. DS (ft)	402.01	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.59	Culv Entr Loss (ft)	0.25
Delta WS (ft)	0.72	Q Weir (cfs)	689.61
E.G. IC (ft)	402.86	Weir Sta Lft (ft)	81.74
E.G. OC (ft)	403.07	Weir Sta Rgt (ft)	290.31
Culvert Control	Outlet	Weir Submerg	0.32
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	2.15
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	1.07
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	223.70
Culv Crt Depth (ft)	2.73	Min El Weir Flow (ft)	401.01

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9094

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404	51.12	404	73.72	402.14	74.58	402.06	74.68	402.06
74.73	402.05	74.8	402.05	74.85	402.04	84.11	401.29	94.67	400.9
95.13	400.79	103.9	401.19	116.56	401.37	121.51	401.23	133.12	400.48
139.21	397.91	139.64	397.7	145.48	394.82	155.07	394.9	161.53	398.9
161.54	398.9	162.31	399.38	169.42	400.29	184.45	400.51	198.05	400.61
215.34	401.69	221.16	402	228.05	402.64	229.72	402.74	231.21	402.87
232.43	402.97	234.41	403.11	235.31	403.17	237.42	403.31	244.27	403.66
244.61	403.68	244.9	403.7	250.59	404	250.91	404.01	250.94	404.02
256.32	404.26	256.52	404.26	257.04	404.28	261.82	404.5	273.83	405.17
276.99	405.33	279.05	405.48	281.29	405.64	283.55	405.76	286.4	406
288.12	406.13	288.52	406.16	293.59	406.53				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	94.67	.025	121.51	.055	139.64	.016	161.53	.055
169.42	.025	198.05	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
139.64	161.53	57.37	60.69	64.17	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	138	398	F
162	293.59	398	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
6.1	41.7	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9033

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404	54.52	404	73.75	402.26	75.58	402.09	75.64	402.08
75.71	402.08	75.76	402.07	91.39	400.68	91.77	400.49	102.07	400.62
111.47	400.85	112.04	401.3	118.01	401.21	126.27	399.38	131.85	396.43
131.86	396.42	132.13	396.28	135.54	394.33	143.52	394.25	146.97	396.1
151.92	398.65	152.18	398.79	157.76	399.84	162.63	400.24	168.26	400.49
168.8	400.26	177.99	400.05	187.01	399.75	187.54	400.09	195.78	400.92
195.83	400.93	196.85	401.14	210.93	404	212.97	404.31	215.23	404.58
220.35	405.21	226.57	406	263.3	406	266.2	406.17		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	91.39	.025	118.01	.055	132.13	.016	146.97	.055
162.63	.025	187.54	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
132.13	146.97	96.95	94.72	92.33	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
222.5	266.2	410	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
12.8	42.2	410

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8938

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406.83	25.54	406	68.91	406	69.17	405.97	69.26	405.96
74.09	405.46	76.78	405.18	79.77	404.86	87.76	404	88.56	403.9

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   90.95   403.6   99.23  402.55  100.92  402.33  101.42  402.26  107.11   401.8
  107.69  401.77  107.71  401.77   107.8  401.76  107.85  401.76  120.05  400.14
  126.04  399.87  126.55  399.66  135.93  399.95  144.47  400.28  145.09  400.64
  151.45  400.71  160.73  398.11  162.66  397.11  162.67  397.11  165.14  395.84
  168.52     394  176.28  393.85  179.62  395.83  182.69  396.99  187.03  398.62
  195.68  399.85  201.07  400.07  201.66   399.8   209.6  399.64   220.7  399.42
   221.2  399.78  228.33  399.83  228.38  399.84  229.28  399.98  241.94     402
  244.19  402.33   245.2  402.41  256.53  403.57  260.47     404  263.82  404.49
   264.1   404.5  265.84  404.75  266.21  404.74  266.51  404.74  269.44  405.12
   281.2     406  307.11     406

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  120.05    .025  151.45    .055  165.14    .016  179.62    .055
  195.68    .025   221.2    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        165.14  179.62           163.23  161.92  160.75             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
   273.6  306.99     410       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    14.5    53.7     410

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8776

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  404.02     .32     404   48.65     404   62.12   402.5   66.46     402
   80.78  400.01   80.88     400   80.94  399.99   83.05  399.69   85.75   399.3
   85.97  399.27   86.02  399.26   94.56  398.79      95  398.66   104.7  398.95
  112.97  399.21  113.61  399.61  119.65  399.47  128.08  397.38  132.67  395.23
  133.23  394.97  136.73  393.04  144.47  392.95  148.08  394.88  152.66  396.57
  152.67  396.58  156.39  397.95  164.19  398.93  169.62  399.23  170.14  399.01
  178.25  398.86  189.11  398.71  206.52  402.51  206.57  402.53  206.77   402.6
  206.99  402.68  207.26  402.78  208.93  403.39  216.05     406  217.54  406.42
  223.17     408  228.58  408.88  230.19  409.09  233.25  409.56  237.39     410
  260.55     410

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   94.56    .025  119.65    .055  133.23    .016  148.08    .055
  164.19    .025  189.11    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        133.23  148.08           150.65  147.84  144.92             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     5.3    36.7     410   242.6  260.55     415

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8628

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     400   43.24     400   67.19  398.75   67.49  398.74   67.73  398.73
   68.24   398.7   68.32  398.69   68.41  398.69   68.68  398.67   68.77  398.67
   85.99  397.88   92.07  397.58   92.45   397.4  102.08  397.51  110.87  397.66
  111.48     398  117.04  397.75  126.38   395.5  129.16  394.42  130.11  394.05
  133.66  391.99  141.81  392.03  145.69   394.2  149.16  395.59  151.61  396.57
  162.06  397.95  167.53  398.25  167.98  397.98  177.17  397.66  186.26  397.42
  186.67  397.61  193.56  398.98  193.62     399  193.64     399  196.35  399.64
  206.39     402  212.11  403.16  216.57     404  219.52  404.54  220.37  404.68
  222.85  405.11   224.3  405.34  225.44  405.53  227.17  405.78  227.52  405.83
  228.81     406  230.99  406.22  232.36  406.33  232.68  406.36  235.09  406.54
  237.05  406.66  237.73  406.69  238.84  406.74  239.66  406.76  241.98  406.81
  242.96  406.84  244.55  406.85  245.61  406.87  247.83  406.87  249.36  406.86
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  249.93  406.85  251.39  406.82  252.48   406.8   254.7  406.71  255.71  406.68
   257.9  406.57  260.13  406.42  260.76  406.39  261.31  406.36  262.94  406.24

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   92.07    .025  117.04    .055  130.11    .016  145.69    .055
  162.06    .025  186.67    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.11  145.69           174.55  169.35  164.24             .1       .3
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     2.3    34.3     408   248.8  262.94     408

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8459

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     400    9.36     400   19.64  399.33   21.18  399.35   21.52  399.32
   24.66  399.35   25.01  399.32   25.43  399.29    27.8  399.31   29.23  399.19
    31.5  399.19   32.66  399.09   33.88     399   37.04  398.98   37.68  398.93
   38.41  398.88    40.3  398.84   41.85  398.75   42.89  398.71   46.29  398.53
   46.67  398.51   47.01  398.49   52.88  398.19   53.02  398.18   53.15  398.17
   55.56  398.02   55.82     398   62.38  397.62   63.06  397.58   63.09  397.58
   63.13  397.57   63.45  397.55    63.5  397.55   63.56  397.54   70.83   396.9
   74.37  396.43   74.76  396.35   84.77  396.45   93.28  396.59   93.77   396.9
   99.65  396.57  109.58   394.6  111.17  393.84  116.68  391.22  127.02  391.25
  131.21  393.31   133.8  394.59  144.34  396.93  149.92  397.28  150.64  396.93
  159.51  396.62  169.28  396.29  183.57  398.17  183.62  398.18  183.63  398.18
  185.91  398.46  197.93     400  208.17     400  236.83  400.54

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   74.37    .025   99.65    .055  111.17    .016  131.21    .055
  144.34    .025  169.28    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        111.17  131.21           130.02  130.06   129.9             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
       0    31.8     405       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   225.5  236.83     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8329

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  404.45      .1  404.44   10.11     404   11.46  403.88   12.95  403.74
   23.76  402.76   32.08     402   49.55  400.47   55.09     400   63.11  399.38
   68.27  398.99    69.9  398.87   74.31  398.54   76.69  398.38    77.2  398.34
   77.57  398.32    78.2  398.29   81.68     398    89.2  397.56   91.32  397.42
   102.6  396.76  105.56  396.59  106.64  396.53  110.81  396.35  111.74  396.34
  112.73  396.21  114.11  396.05  114.19  396.05  114.63     396  120.71     396
  123.02  395.96  125.61  395.91  125.66  395.91  145.26  395.65  156.65  395.61
  164.77  395.63  165.48  396.09  171.49  395.76   181.7  393.87  184.07  392.66
  184.08  392.65  188.11   390.6  199.42  390.59  204.09  392.91   204.1  392.92
   205.9  393.81  215.33  395.81  220.73  396.05  221.25   395.7  231.82  395.42
  240.94  395.26  241.45  395.36  245.66  395.51  245.71  395.51  250.67     396
  286.88     396  288.42  396.08  290.22  396.18  290.58  396.19  292.31  396.28
  292.84  396.29  311.28  397.09   313.1  397.11  313.59  397.13  315.42  397.14
  315.88  397.16  354.04     398  363.84     398  390.19  399.04  413.91     400
  415.45     400  418.67  400.26  421.83  400.42  424.26  400.59  428.97  400.87

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
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       0    .025  171.49    .055  184.08    .016  204.09    .055  215.33    .025
  241.45    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        184.08  204.09              163  162.96  163.01             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8166

INPUT
Description:
Station Elevation Data    num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  407.18   10.95  406.06   11.43     406   24.94     404   31.24   403.5
   51.13     402   58.41  401.57   61.68  401.44   67.96  401.12   70.57  401.01
    75.8  400.78   92.43     400   95.26  399.73   97.88   399.5  116.77  398.02
  123.11  397.34  130.08  396.64  136.18     396  143.43  395.41  151.49  394.83
   156.8  394.67  157.23  394.43   167.2  394.49  175.42  394.64  175.99  395.07
  182.18  394.56  192.61  393.19   195.6  391.81  195.62  391.81  199.52  390.01
  209.72   389.9  215.63   392.6  216.91  393.19  226.27  394.79  232.22  395.11
  232.69  394.84  241.53  394.73  249.43  394.38  250.11  394.19  251.06  394.19
  251.58  394.34  263.46   394.7  306.44     396  310.24  396.14   314.3  396.27
  317.64  396.36  320.99  396.42  337.89  397.34   339.6  397.39  346.22     398
  352.09  399.29  355.26     400  359.79  401.05  364.78  402.01  371.43  402.81
  372.98  402.97  381.44  403.94  381.92     404  395.38  404.92  403.91   405.1
  407.31  405.27  413.83  405.43  427.96     406  430.31     406  432.23  406.23
  432.81  406.28  436.23   406.7  436.99  406.75  439.03     407  441.12  407.13
  448.98     408  457.02     408  458.29  408.06  474.42  408.42

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   156.8    .025  182.18    .055   195.6    .016  215.63    .055
  226.27    .025  251.58    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         195.6  215.63           156.55  156.02  156.27             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   439.1  474.42     410

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 8010

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  402.55     7.4  402.14   36.62     400   58.24     398   76.34  397.19
    80.9  397.04  106.18     396  109.51  395.67  113.88  395.49  116.92   395.3
  123.63  395.35  126.43  395.11  130.93   395.1  131.95  395.05  137.04   395.1
  139.18  395.28  143.21  395.28  150.26     396  167.06     396  172.85  395.46
  177.16  395.09  177.83  394.49  188.81  394.76  196.75  394.99   197.4  395.47
  203.61  395.65  210.06  395.31  215.11  392.67  215.13  392.66  218.44  390.93
  224.05  389.05  227.47  388.95   234.6   391.6   235.2  391.88  241.59  394.82
  247.16  395.46  254.01  395.47   254.7  394.99  273.39  394.47  274.44  394.98
  276.64   395.3  280.47  395.38  285.76  395.58  293.73  391.98  300.77     390
  303.67     390  307.27  390.56  313.51     392  315.93   392.9   318.7     394
  327.82  395.21  342.23  397.21  347.44     398  348.71  398.27  358.84     400
   372.9  401.61  377.47     402  379.02  402.29  380.27  402.43  382.86  402.88
  384.55  403.06  385.41  403.22  389.98   403.8  394.72  404.54  404.52     406
  423.74     408  438.67     410  439.79     410  449.95  410.67  481.28  412.56

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065  177.16    .025  210.06    .055  218.44    .016   234.6    .055
  247.16    .025  280.47    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        218.44   234.6            48.73   88.82  110.46             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  285.69   330.5  395.58       F
```

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7921

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.27	2.35	402.24	9.79	402.05	10.85	402	23.33	401.47
24.1	401.44	27.36	401.31	30.17	401.2	32.12	401.15	36.66	401.01
38.26	400.95	41.05	400.83	41.66	400.81	44.82	400.66	48.42	400.48
48.82	400.46	50.4	400.37	53.99	400.16	56.46	400	70.05	398.87
80.48	398	83.88	397.75	84.92	397.69	92.06	397.18	95.78	397
101.94	396.67	104.07	396.53	114.28	396	117.76	395.27	119.5	394.95
120.43	394.79	123.54	394.3	125.57	394	134.73	392.71	138.15	392.29
140.39	392	165.14	392	168.49	393.04	169.81	393.46	171.33	394
172.39	394.09	179.24	395.77	183.72	396.33	184.12	396.38	195.25	395.89
202.88	395.48	203.82	394.92	215.26	395.27	224.99	395.56	225.75	395.99
232.65	396.14	238.38	397.12	239	397.24	239.31	394.03	244.85	391.38
248.52	389.63	258.97	388.63	274.93	387.21	296.02	387.72	304.27	388.31
304.29	388.31	316.38	389.18	330.87	391.74	340.26	394.76	347.34	397.29
351.54	397.3	361.79	398.12	375.83	398.18	383.29	398.14	384.03	397.63
396.44	397.32	411.59	396.99	412.44	397.58	415.27	397.7	420.29	397.87
432.07	398.45								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	202.88	.025	232.65	.055	248.52	.016	316.38	.075
375.83	.025	420.29	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
248.52	316.38	168.2	186.1	189.78	.3	.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
107.24	184.19	396.379	F
184.19	248	397.12	F
317	432.07	397.12	F

BRIDGE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7800

INPUT
Description: N Chatham
Distance from Upstream XS = 26.8
Deck/Roadway Width = 53.5
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
238.39	397.12		250397.1381	394.15		315397.2395	394.2	
347.34	397.29							

Upstream Bridge Cross Section Data
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.27	2.35	402.24	9.79	402.05	10.85	402	23.33	401.47
24.1	401.44	27.36	401.31	30.17	401.2	32.12	401.15	36.66	401.01
38.26	400.95	41.05	400.83	41.66	400.81	44.82	400.66	48.42	400.48
48.82	400.46	50.4	400.37	53.99	400.16	56.46	400	70.05	398.87
80.48	398	83.88	397.75	84.92	397.69	92.06	397.18	95.78	397
101.94	396.67	104.07	396.53	114.28	396	117.76	395.27	119.5	394.95
120.43	394.79	123.54	394.3	125.57	394	134.73	392.71	138.15	392.29
140.39	392	165.14	392	168.49	393.04	169.81	393.46	171.33	394
172.39	394.09	179.24	395.77	183.72	396.33	184.12	396.38	195.25	395.89
202.88	395.48	203.82	394.92	215.26	395.27	224.99	395.56	225.75	395.99
232.65	396.14	238.38	397.12	239	397.24	239.31	394.03	244.85	391.38
248.52	389.63	258.97	388.63	274.93	387.21	296.02	387.72	304.27	388.31
304.29	388.31	316.38	389.18	330.87	391.74	340.26	394.76	347.34	397.29
351.54	397.3	361.79	398.12	375.83	398.18	383.29	398.14	384.03	397.63
396.44	397.32	411.59	396.99	412.44	397.58	415.27	397.7	420.29	397.87
432.07	398.45								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .075  202.88    .025  232.65    .055  248.52    .016  316.38    .075
  375.83    .025  420.29    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        248.52  316.38            .3       .5
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
  107.24  184.19 396.379       F
  184.19     248  397.12       F
     317  432.07  397.12       F

Downstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   62.45  396.84             120 396.282   393.2     185 395.653   392.5
  215.18  395.36

Downstream Bridge Cross Section Data
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   396.3   17.79  396.58   44.54  396.75   56.45  397.15   62.45  396.84
   74.23  392.93   81.72  390.86   91.42  389.84   100.1  389.46  100.11  389.46
  111.61  388.95  133.43  388.16  148.98  387.75  150.92   386.4  159.56  386.53
  161.02  387.98  166.33  387.83  177.83  388.51  179.97  388.75  186.19  389.45
  198.02  393.01  215.18  395.36  227.49   394.9   228.3  394.28  238.98  394.39
  254.49   394.4  272.22  394.34  289.78  393.96     306  393.51  306.75  394.09
  309.11  394.26  310.38  394.33  310.44  394.34  310.51  394.34  324.13  394.65
  362.24     396  364.63  396.25  381.06     398  387.94  398.65  402.16     400

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  133.43     .04  177.83    .055  227.49    .025  310.38    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        133.43  215.18            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     115  395.36       F
     187  402.16  395.36       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #2-YR

  E.G. US. (ft)               390.21    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               390.18    E.G. Elev (ft)              390.21        390.20
  Q Total (cfs)               189.00    W.S. Elev (ft)              390.18        390.17
  Q Bridge (cfs)              189.00    Crit W.S. (ft)              388.54        388.48
  Q Weir (cfs)                          Max Chl Dpth (ft)             2.97          3.77
  Weir Sta Lft (ft)                     Vel Total (ft/s)              1.38          1.31
  Weir Sta Rgt (ft)                     Flow Area (sq ft)           137.37        144.80
  Weir Submerg                          Froude # Chl                  0.14          0.13
  Weir Max Depth (ft)                   Specif Force (cu ft)        165.79        185.51
  Min El Weir Flow (ft)       396.38    Hydr Depth (ft)               2.11          2.22
```

Min El Prs (ft)	394.20	W.P. Total (ft)	67.10	68.73
Delta EG (ft)	0.07	Conv. Total (cfs)	20570.1	8471.6
Delta WS (ft)	0.07	Top Width (ft)	65.13	65.18
BR Open Area (sq ft)	319.22	Frctn Loss (ft)	0.01	0.05
BR Open Vel (ft/s)	1.38	C & E Loss (ft)	0.00	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.01	0.07
BR Sel Method	Energy only	Power Total (lb/ft s)	0.01	0.09

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	391.31	Element		
W.S. US. (ft)	391.26	E.G. Elev (ft)	391.31	391.29
Q Total (cfs)	397.00	W.S. Elev (ft)	391.25	391.23
Q Bridge (cfs)	397.00	Crit W.S. (ft)	389.09	389.02
Q Weir (cfs)		Max Chl Dpth (ft)	4.04	4.83
Weir Sta Lft (ft)		Vel Total (ft/s)	1.92	1.86
Weir Sta Rgt (ft)		Flow Area (sq ft)	206.97	214.01
Weir Submerg		Froude # Chl	0.17	0.16
Weir Max Depth (ft)		Specif Force (cu ft)	365.41	392.26
Min El Weir Flow (ft)	396.38	Hydr Depth (ft)	3.18	3.29
Min El Prs (ft)	394.20	W.P. Total (ft)	69.24	70.85
Delta EG (ft)	0.09	Conv. Total (cfs)	39886.5	15624.9
Delta WS (ft)	0.09	Top Width (ft)	65.09	65.11
BR Open Area (sq ft)	319.22	Frctn Loss (ft)	0.01	0.07
BR Open Vel (ft/s)	1.92	C & E Loss (ft)	0.00	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.02	0.12
BR Sel Method	Energy only	Power Total (lb/ft s)	0.04	0.23

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	392.32	Element		
W.S. US. (ft)	392.23	E.G. Elev (ft)	392.32	392.30
Q Total (cfs)	698.00	W.S. Elev (ft)	392.22	392.19
Q Bridge (cfs)	698.00	Crit W.S. (ft)	389.60	389.55
Q Weir (cfs)		Max Chl Dpth (ft)	5.01	5.79
Weir Sta Lft (ft)		Vel Total (ft/s)	2.59	2.53
Weir Sta Rgt (ft)		Flow Area (sq ft)	269.83	276.07
Weir Submerg		Froude # Chl	0.20	0.20
Weir Max Depth (ft)		Specif Force (cu ft)	628.14	659.89
Min El Weir Flow (ft)	396.38	Hydr Depth (ft)	4.15	4.24
Min El Prs (ft)	394.20	W.P. Total (ft)	71.17	72.76
Delta EG (ft)	0.12	Conv. Total (cfs)	60930.6	23384.5
Delta WS (ft)	0.13	Top Width (ft)	65.06	65.05
BR Open Area (sq ft)	319.22	Frctn Loss (ft)	0.01	0.09
BR Open Vel (ft/s)	2.59	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.03	0.21
BR Sel Method	Energy only	Power Total (lb/ft s)	0.08	0.53

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	392.77	Element		
W.S. US. (ft)	392.64	E.G. Elev (ft)	392.76	392.74

Q Total (cfs)	862.00	W.S. Elev (ft)	392.63	392.59
Q Bridge (cfs)	862.00	Crit W.S. (ft)	389.83	389.80
Q Weir (cfs)		Max Chl Dpth (ft)	5.42	6.19
Weir Sta Lft (ft)		Vel Total (ft/s)	2.91	2.85
Weir Sta Rgt (ft)		Flow Area (sq ft)	296.68	302.07
Weir Submerg		Froude # Chl	0.22	0.22
Weir Max Depth (ft)		Specif Force (cu ft)	766.77	799.98
Min El Weir Flow (ft)	396.38	Hydr Depth (ft)	4.56	5.35
Min El Prs (ft)	394.20	W.P. Total (ft)	71.99	82.06
Delta EG (ft)	0.14	Conv. Total (cfs)	70820.8	26159.8
Delta WS (ft)	0.15	Top Width (ft)	65.05	56.45
BR Open Area (sq ft)	319.22	Frctn Loss (ft)	0.02	0.11
BR Open Vel (ft/s)	2.91	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.04	0.25
BR Sel Method	Energy only	Power Total (lb/ft s)	0.11	0.71

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	393.06	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	392.93	E.G. Elev (ft)	393.05	393.03
Q Total (cfs)	945.00	W.S. Elev (ft)	392.91	392.88
Q Bridge (cfs)	945.00	Crit W.S. (ft)	389.94	389.91
Q Weir (cfs)		Max Chl Dpth (ft)	5.70	6.48
Weir Sta Lft (ft)		Vel Total (ft/s)	3.00	3.01
Weir Sta Rgt (ft)		Flow Area (sq ft)	315.26	314.44
Weir Submerg		Froude # Chl	0.22	0.22
Weir Max Depth (ft)		Specif Force (cu ft)	864.36	898.49
Min El Weir Flow (ft)	396.38	Hydr Depth (ft)	4.85	10.54
Min El Prs (ft)	394.20	W.P. Total (ft)	72.56	108.96
Delta EG (ft)	0.17	Conv. Total (cfs)	77953.3	21615.1
Delta WS (ft)	0.18	Top Width (ft)	65.04	29.82
BR Open Area (sq ft)	319.22	Frctn Loss (ft)	0.02	0.14
BR Open Vel (ft/s)	3.01	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.04	0.34
BR Sel Method	Energy only	Power Total (lb/ft s)	0.12	1.03

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7735

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.3	17.79	396.58	44.54	396.75	56.45	397.15	62.45	396.84
74.23	392.93	81.72	390.86	91.42	389.84	100.1	389.46	100.11	389.46
111.61	388.95	133.43	388.16	148.98	387.75	150.92	386.4	159.56	386.53
161.02	387.98	166.33	387.83	177.83	388.51	179.97	388.75	186.19	389.45
198.02	393.01	215.18	395.36	227.49	394.9	228.3	394.28	238.98	394.39
254.49	394.4	272.22	394.34	289.78	393.96	306	393.51	306.75	394.09
309.11	394.26	310.38	394.33	310.44	394.34	310.51	394.34	324.13	394.65
362.24	396	364.63	396.25	381.06	398	387.94	398.65	402.16	400

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	133.43	.04	177.83	.055	227.49	.025	310.38	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
133.43	215.18	142.82	90.04	69.09	.3	.5

```
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     115  395.36       F
     187  402.16  395.36       F

LATERAL STRUCTURE


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7717

INPUT
Description: N Chatham Overflow
Lateral structure position     = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width        =       2
Weir Coefficient          =       2
Weir Flow Reference       = Water Surface
 Weir Embankment Coordinates    num =        5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     -50  395.36   39.54  393.75  124.15  392.21  186.01   391.2     247   390.9

Weir crest shape                          = Broad Crested


Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       5
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Inlet control
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                       2000     .013     .013        0                  .5                1
Upstream   Elevation =  388
           Centerline Station =  0
Downstream Elevation =  360
           Centerline Station =  50

LATERAL STRUCTURE OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  E.G. US. (ft)                 390.15    Weir Sta US (ft)
  W.S. US. (ft)                 390.12    Weir Sta DS (ft)
  E.G. DS (ft)                  387.63    Min El Weir Flow (ft)         390.90
  W.S. DS (ft)                  387.51    Wr Top Wdth (ft)
  Q US (cfs)                    189.00    Weir Max Depth (ft)
  Q Leaving Total (cfs)          25.78    Weir Avg Depth (ft)
  Q DS (cfs)                    164.42    Weir Flow Area (sq ft)
  Perc Q Leaving                 13.53    Weir Coef (ft^1/2)             0.000
  Q Weir (cfs)                    0.00    Weir Submerg
  Q Gates (cfs)
  Q Culv (cfs)                   25.78    Q Culv Group (cfs)             25.78
  Q Lat RC (cfs)                          # Barrels                          1
  Q Outlet TS (cfs)               0.00    Culv Length (ft)             2000.00
  Q Breach (cfs)                          Culv Depth Blocked (ft)
  Breach Avg Velocity (ft/s)              Culv Inv El Up (ft)           388.00
  Breach Flow Area (sq ft)                Culv Inv El Dn (ft)           360.00
  Breach WD (ft)
  Breach Top El (ft)
  Breach Bottom El (ft)
  Breach SSL (ft)
  Breach SSR (ft)


LATERAL STRUCTURE OUTPUT  Profile #10-YR  Culv Group:  Culvert #1

  E.G. US. (ft)                 391.22    Weir Sta US (ft)
  W.S. US. (ft)                 391.17    Weir Sta DS (ft)
  E.G. DS (ft)                  389.26    Min El Weir Flow (ft)         390.90
  W.S. DS (ft)                  389.08    Wr Top Wdth (ft)
  Q US (cfs)                    397.00    Weir Max Depth (ft)
  Q Leaving Total (cfs)          52.82    Weir Avg Depth (ft)
  Q DS (cfs)                    351.22    Weir Flow Area (sq ft)
  Perc Q Leaving                 13.04    Weir Coef (ft^1/2)             0.000
  Q Weir (cfs)                    0.00    Weir Submerg
  Q Gates (cfs)
  Q Culv (cfs)                   52.82    Q Culv Group (cfs)             52.82
  Q Lat RC (cfs)                          # Barrels                          1
  Q Outlet TS (cfs)               0.00    Culv Length (ft)             2000.00
```

Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	388.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	360.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #50-YR Culv Group: Culvert #1

E.G. US. (ft)	392.20	Weir Sta US (ft)	
W.S. US. (ft)	392.10	Weir Sta DS (ft)	
E.G. DS (ft)	390.52	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.18	Wr Top Wdth (ft)	
Q US (cfs)	698.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	81.95	Weir Avg Depth (ft)	
Q DS (cfs)	660.27	Weir Flow Area (sq ft)	
Perc Q Leaving	11.57	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	81.95	Q Culv Group (cfs)	81.95
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2000.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	388.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	360.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Culv Group: Culvert #1

E.G. US. (ft)	392.62	Weir Sta US (ft)	
W.S. US. (ft)	392.49	Weir Sta DS (ft)	
E.G. DS (ft)	390.80	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.45	Wr Top Wdth (ft)	
Q US (cfs)	862.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	94.15	Weir Avg Depth (ft)	
Q DS (cfs)	832.85	Weir Flow Area (sq ft)	
Perc Q Leaving	10.92	Weir Coef (ft^1/2)	3.100
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	94.15	Q Culv Group (cfs)	94.15
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2000.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	388.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	360.00
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

E.G. US. (ft)	392.88	Weir Sta US (ft)	
W.S. US. (ft)	392.74	Weir Sta DS (ft)	
E.G. DS (ft)	391.03	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.74	Wr Top Wdth (ft)	
Q US (cfs)	945.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	102.03	Weir Avg Depth (ft)	
Q DS (cfs)	956.04	Weir Flow Area (sq ft)	
Perc Q Leaving	10.79	Weir Coef (ft^1/2)	3.100
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	102.03	Q Culv Group (cfs)	102.03
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	2000.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	388.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	360.00
Breach WD (ft)			

```
  Breach Top El (ft)
  Breach Bottom El (ft)
  Breach SSL (ft)
  Breach SSR (ft)


CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7645

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  394.02    4.94     394   10.64  393.74   10.96  393.73   15.06  393.54
   15.59  393.52   17.34  393.44   18.71  393.39   49.35 392.967    57.1  392.86
   66.29  390.32   77.21  389.99   93.33  389.71  104.18  390.05  105.31  389.72
  111.39  387.95  114.49  386.68  118.37  386.41  125.33   389.1  127.91   390.1
  143.93  391.75  153.06  392.71  168.44  393.75  177.22  393.47   177.5  393.47
  223.31  393.03  223.82  393.02   233.1  393.29  233.46  393.29  236.26   393.4
  238.69   393.5  238.95   393.5  244.54  393.77  244.67  393.77  245.96  393.83
  247.21  393.88  251.47     394  254.69  394.09  255.85  394.13  255.98  394.14
  257.17   394.2   257.4  394.22  257.65  394.24  258.72  394.31  259.55  394.37
  260.71  394.46  261.77  394.54  264.41  394.72  281.83     396  291.62  396.82
  297.74  397.33  301.31  397.63  305.66     398  307.68  398.37  308.27  398.49
  309.55  398.75  313.77  399.57  315.97     400  317.17  400.15  321.34  400.67
  323.25   400.9

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025   49.35    .075  104.18     .04  127.91    .055  177.22    .025
  236.26    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        104.18  168.44            85.44   84.61   84.17             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7560

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     398   13.16     398    16.3  397.86   18.69  397.75   21.57  397.62
   52.62     396   54.72     396   77.17     394   88.58  392.95   92.96  392.55
   99.27  392.07   99.47  392.05  100.16     392  114.95  390.39  115.47  390.33
  122.74  389.56   134.6  389.13   140.5  389.75   150.4  389.33  151.86  389.98
  153.73  389.71  154.61  389.59   157.9  388.19  158.89  386.17  161.21   385.7
  165.61  386.15   169.3  388.27  173.13  388.38  174.07  388.45  174.09  388.45
  180.17   388.9  196.18  390.45  213.33   392.2   229.1  392.21  233.65  391.75
   234.4  391.16  235.56  391.26  237.87   391.3  278.66  391.93  278.71  391.92
  279.16  391.98  279.36     392  282.97     392  285.84  391.69  286.14  391.65
  288.03  391.47  288.42  391.42  290.38  391.27  290.86  391.23  293.03   391.1
  293.77  391.08  295.03  391.06  295.75  391.07  296.26   391.1     297  391.13
  297.79  391.21  298.72  391.34  299.12  391.38  300.22  391.58  301.48  391.83
  302.25     392  303.24  392.23  305.23  392.71  308.78  393.64  309.52  393.84
  310.08     394  324.25  395.81   325.8     396  345.06     398  345.97   398.2
   346.5  398.32   349.1   398.9   354.1     400  361.13  401.05  366.82     402

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   157.9     .04   169.3    .055   234.4    .025  278.71    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         157.9  213.33            62.59   61.86   60.62             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  282.96  302.26     392       T
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
       0    32.9     400

CROSS SECTION
```

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7499

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.55	9.17	397.27	24.09	396.85	29.99	396.7	33.44	396.57
39.96	396.38	49.86	396	52.49	396	55.42	395.85	56.63	395.81
58.3	395.73	60.74	395.64	64.59	395.46	66.9	395.37	70.43	395.2
89.36	394.57	93.12	394.44	106.41	393.95	123.58	393.69	124.46	393.7
128.86	393.64	136.64	393.51	140.68	393.47	147.39	393.47	148.97	393.45
155.58	393.5	161.68	393.48	162.44	393.46	164.58	393.44	170.22	393.22
181.89	392.72	201.39	392	217.03	390	224.47	389.79	236.8	388.86
248.34	388.61	264.24	389.13	276.64	389.89	280.11	387.94	283.32	387.81
287	387.66	292.53	387.02	293.3	385.99	296.46	385.87	300.8	385.88
302.11	388.06	303.42	388.47	303.43	388.47	304.28	388.74	309.18	388.83
317.6	390.64	326.22	391.2	334.94	390.92	335.64	390.24	344.52	390.57
373.6	390.177	386.74	390	388.74	388.5	406.08	388.5	408.08	390
413.69	392.08	415.28	392.61	419.37	394	422.85	394.56	430.78	396
436.98	396.71	449.57	398	458.27	399.13	461.4	399.37	463.76	399.64
467.25	399.79	467.61	399.83	469.29	399.93	472.83	400		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	181.89	.055	287	.04	302.11	.055	334.94	.025
373.6	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
287	326.22	62.52	61.98	61.21	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
386.59	408.08	390	T

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7437

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.86	34.9	396	37.3	396	65.79	394.99	72.05	394.7
75.42	394.61	78.52	394.43	79.74	394.41	120.94	392	136.04	391.37
155.34	390.47	159.88	390.33	181.12	390.01	191.93	390.17	197.52	390.2
205.41	390.17	210.12	390.23	222.25	390.79	231.8	390.65	235.24	390.8
239.5	390.72	242.6	390.51	243.7	393.81	244.38	393.85	244.52	393.29
252.3	393.97	265.38	393.16	272.52	391.32	282.48	390.12	291.46	388.97
291.48	388.96	293.97	388.64	295.61	384.71	296.77	385.07	298.3	384.3
298.98	384.16	301.25	384.19	305.22	384.12	308.47	383.8	309.04	384.54
315.03	386.16	316.94	386.68	328.9	390.9	343.15	390.83	353.17	390.51
353.89	389.87	355.55	389.89	373.23	390.07	390.11	390	403.96	390
407.91	389.06	411.03	388.51	411.66	388.45	414.31	388	418.89	388
423.5	388.96	423.78	388.99	427.54	390	430.04	391.02	432.84	392
437.06	393.18	439.65	394	455.4	396	464.83	396.74	470.72	397.12
472.23	397.16	478.3	397.45	483.36	397.5	496.04	397.8	500.1	398
505.53	398.38	519.88	399.49	524.94	399.82	529	400		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	244.52	.055	296.77	.04	315.03	.055	353.17	.025
390.11	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
293.97	328.9	78.48	78.48	79.28	.3	.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	292	390.32	F
330	403.94	390.32	F
403.94	427.58	390	T

BRIDGE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7400

INPUT
Description: Private Drive to School/Church
Distance from Upstream XS =   19
Deck/Roadway Width   =   26.5
Weir Coefficient   =   2.6
Upstream Deck/Roadway Coordinates
    num=   5
     Sta Hi Cord Lo Cord   Sta Hi Cord Lo Cord   Sta Hi Cord Lo Cord
     273 390.523   293.3 390.83   293.94390.8203 388.82
  320.94390.4131 388.36   330.1 390.275

Upstream Bridge Cross Section Data
Station Elevation Data   num=   74
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0 396.86   34.9   396   37.3   396   65.79 394.99   72.05   394.7
   75.42 394.61   78.52 394.43   79.74 394.41 120.94   392 136.04 391.37
  155.34 390.47 159.88 390.33 181.12 390.01 191.93 390.17 197.52   390.2
  205.41 390.17 210.12 390.23 222.25 390.79   231.8 390.65 235.24   390.8
   239.5 390.72   242.6 390.51   243.7 393.81 244.38 393.85 244.52 393.29
   252.3 393.97 265.38 393.16 272.52 391.32 282.48 390.12 291.46 388.97
  291.48 388.96 293.97 388.64 295.61 384.71 296.77 385.07   298.3   384.3
  298.98 384.16 301.25 384.19 305.22 384.12 308.47   383.8 309.04 384.54
  315.03 386.16 316.94 386.68   328.9   390.9 343.15 390.83 353.17 390.51
  353.89 389.87 355.55 389.89 373.23 390.07 390.11   390 403.96   390
  407.91 389.06 411.03 388.51 411.66 388.45 414.31   388 418.89   388
   423.5 388.96 423.78 388.99 427.54   390 430.04 391.02 432.84   392
  437.06 393.18 439.65   394   455.4   396 464.83 396.74 470.72 397.12
  472.23 397.16   478.3 397.45 483.36   397.5 496.04   397.8   500.1   398
  505.53 398.38 519.88 399.49 524.94 399.82   529   400

Manning's n Values   num=   6
     Sta   n Val   Sta   n Val   Sta   n Val   Sta   n Val   Sta   n Val
       0   .025 244.52   .055 296.77   .04 315.03   .055 353.17   .025
  390.11   .065

Bank Sta: Left   Right   Coeff Contr.   Expan.
        293.97   328.9   .3   .5
Ineffective Flow   num=   3
   Sta L   Sta R   Elev Permanent
       0   292 390.32   F
     330 403.94 390.32   F
  403.94 427.58   390   T

Downstream Deck/Roadway Coordinates
    num=   8
     Sta Hi Cord Lo Cord   Sta Hi Cord Lo Cord   Sta Hi Cord Lo Cord
  148.65 389.87   151.8   390   244.9 390.523
     256390.6942 388.53   264.8 390.83 388.83   283390.5517 388.35
   301.1 390.275   322   390.1

Downstream Bridge Cross Section Data
Station Elevation Data   num=   81
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0 396.57   19.18   396   25.02   396   26.23 395.94   29.88 395.76
   31.08 395.72   32.73 395.65   43.33 395.14   53.01 394.74   57.42 394.54
      60 394.44   71.11   394   82.39 393.29   85.33 393.09   90.62 392.73
    91.6 392.66   95.73   392.4   97.19   392.3 101.89 392.04 102.02 392.03
  102.64   392 111.71 391.66 112.52 391.62 116.39 391.46 117.91 391.39
  119.63 391.31 127.79 390.92 128.88 390.86 133.39 390.64 146.33   390
  148.65 389.87   197.8 389.235 207.48 389.11 247.02 388.78 260.06 386.56
  261.83 386.25   267 384.04 271.78 383.96 276.29 383.89   279.1 385.82
  283.58 386.51   283.6 386.51 293.28   388 308.92 391.17 338.91 390.22
  343.99   390 364.27   390 364.77 389.75 400.63 389.75 401.13   390
  429.27   390 443.29 391.39 445.37 391.46 446.23 391.48 446.91 391.51
   447.8 391.52   448.1 391.53   449 391.53   449.3 391.55   450.2 391.55
  468.04   392 470.36   392 473.67 392.18 474.82 392.24 482.25 392.66
  485.63 392.85 492.04 393.22   499.3 393.61 500.79 393.69 506.62   394
  510.56   394 529.82 394.67 530.59 394.68 532.27 394.85 533.97 395.03
  534.59 395.05 536.96 395.34 537.45 395.36 542.27   396 545.21   396
  552.15 396.29

Manning's n Values   num=   6
     Sta   n Val   Sta   n Val   Sta   n Val   Sta   n Val   Sta   n Val
       0   .025   197.8   .055 261.83   .04   279.1   .055 364.77   .025
  401.13   .065

Bank Sta: Left   Right   Coeff Contr.   Expan.
        261.83 308.92   .3   .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	255	389	F
284	552.15	389	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd = .8
Max Low Cord =

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #2-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	387.61	Element		
W.S. US. (ft)	387.50	E.G. Elev (ft)	387.57	387.51
Q Total (cfs)	164.42	W.S. Elev (ft)	387.45	387.38
Q Bridge (cfs)	164.42	Crit W.S. (ft)	385.85	385.84
Q Weir (cfs)		Max Chl Dpth (ft)	3.65	3.49
Weir Sta Lft (ft)		Vel Total (ft/s)	2.74	2.79
Weir Sta Rgt (ft)		Flow Area (sq ft)	60.05	58.88
Weir Submerg		Froude # Chl	0.31	0.27
Weir Max Depth (ft)		Specif Force (cu ft)	100.32	96.68
Min El Weir Flow (ft)	390.01	Hydr Depth (ft)	2.44	2.18
Min El Prs (ft)	388.82	W.P. Total (ft)	27.53	29.30
Delta EG (ft)	0.17	Conv. Total (cfs)	3344.2	3870.0
Delta WS (ft)	0.19	Top Width (ft)	24.65	27.02
BR Open Area (sq ft)	89.94	Frctn Loss (ft)	0.06	0.06
BR Open Vel (ft/s)	2.79	C & E Loss (ft)	0.00	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.33	0.23
BR Sel Method	Energy only	Power Total (lb/ft s)	0.90	0.63

Note: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #10-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	389.25	Element		
W.S. US. (ft)	389.08	E.G. Elev (ft)	389.25	388.67
Q Total (cfs)	351.22	W.S. Elev (ft)	388.82	388.41
Q Bridge (cfs)	351.22	Crit W.S. (ft)	386.77	386.84
Q Weir (cfs)		Max Chl Dpth (ft)	5.02	4.52
Weir Sta Lft (ft)		Vel Total (ft/s)	3.91	4.05
Weir Sta Rgt (ft)		Flow Area (sq ft)	89.94	86.62
Weir Submerg		Froude # Chl	0.31	0.35
Weir Max Depth (ft)		Specif Force (cu ft)	234.70	202.88
Min El Weir Flow (ft)	390.01	Hydr Depth (ft)		3.48
Min El Prs (ft)	388.82	W.P. Total (ft)	58.23	33.41
Delta EG (ft)	0.59	Conv. Total (cfs)	3892.7	6647.3
Delta WS (ft)	0.67	Top Width (ft)		24.89
BR Open Area (sq ft)	89.94	Frctn Loss (ft)		
BR Open Vel (ft/s)	3.91	C & E Loss (ft)		
BR Sluice Coef	0.33	Shear Total (lb/sq ft)	0.78	0.45
BR Sel Method	Press Only	Power Total (lb/ft s)	3.07	1.83

Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were
used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #50-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	390.52	Element		
W.S. US. (ft)	390.17	E.G. Elev (ft)	390.51	390.36
Q Total (cfs)	660.27	W.S. Elev (ft)	390.17	390.17
Q Bridge (cfs)	556.61	Crit W.S. (ft)	387.87	387.90
Q Weir (cfs)	103.66	Max Chl Dpth (ft)	6.37	6.28
Weir Sta Lft (ft)	154.44	Vel Total (ft/s)	4.44	3.63
Weir Sta Rgt (ft)	428.79	Flow Area (sq ft)	148.55	181.87
Weir Submerg	0.00	Froude # Chl	0.51	0.44
Weir Max Depth (ft)	0.64	Specif Force (cu ft)	462.63	449.04
Min El Weir Flow (ft)	390.01	Hydr Depth (ft)	6.18	1.39
Min El Prs (ft)	388.82	W.P. Total (ft)	82.71	188.96
Delta EG (ft)	0.67	Conv. Total (cfs)		
Delta WS (ft)	0.58	Top Width (ft)	96.58	130.38
BR Open Area (sq ft)	89.94	Frctn Loss (ft)		
BR Open Vel (ft/s)	6.19	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the energy is based on critical depth over the weir.
The water surface has been projected.

BRIDGE OUTPUT Profile #100-YR

			Inside BR US	Inside BR DS
E.G. US. (ft)	390.80	Element		
W.S. US. (ft)	390.44	E.G. Elev (ft)	390.79	390.59
Q Total (cfs)	832.85	W.S. Elev (ft)	390.44	390.42
Q Bridge (cfs)	461.06	Crit W.S. (ft)	388.35	388.37
Q Weir (cfs)	237.16	Max Chl Dpth (ft)	6.64	6.53
Weir Sta Lft (ft)	148.44	Vel Total (ft/s)	4.18	3.27
Weir Sta Rgt (ft)	429.48	Flow Area (sq ft)	199.43	254.82
Weir Submerg	0.12	Froude # Chl	0.44	0.41
Weir Max Depth (ft)	0.92	Specif Force (cu ft)	511.26	506.14
Min El Weir Flow (ft)	390.01	Hydr Depth (ft)	1.40	1.25
Min El Prs (ft)	388.82	W.P. Total (ft)	201.38	262.37
Delta EG (ft)	0.46	Conv. Total (cfs)		
Delta WS (ft)	0.29	Top Width (ft)	142.38	203.76
BR Open Area (sq ft)	89.94	Frctn Loss (ft)		
BR Open Vel (ft/s)	5.13	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy are based on critical

depth over the weir.

BRIDGE OUTPUT Profile #7-30-2016

E.G. US. (ft)	391.03	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	390.74	E.G. Elev (ft)	391.02	390.79
Q Total (cfs)	956.04	W.S. Elev (ft)	390.74	390.58
Q Bridge (cfs)	420.78	Crit W.S. (ft)	388.44	388.53
Q Weir (cfs)	399.48	Max Chl Dpth (ft)	6.94	6.69
Weir Sta Lft (ft)	143.51	Vel Total (ft/s)	3.74	2.95
Weir Sta Rgt (ft)	430.04	Flow Area (sq ft)	255.77	323.79
Weir Submerg	0.37	Froude # Chl	0.34	0.37
Weir Max Depth (ft)	1.15	Specif Force (cu ft)	546.71	541.95
Min El Weir Flow (ft)	390.01	Hydr Depth (ft)	1.24	1.32
Min El Prs (ft)	388.82	W.P. Total (ft)	265.75	304.19
Delta EG (ft)	0.39	Conv. Total (cfs)		
Delta WS (ft)	0.24	Top Width (ft)	206.41	245.55
BR Open Area (sq ft)	89.94	Frctn Loss (ft)		
BR Open Vel (ft/s)	4.68	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)		
BR Sel Method	Press/Weir	Power Total (lb/ft s)		

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation
was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the upstream end, the water surface and energy have been projected
from the upstream cross section. The selected bridge modeling method does not compute answers inside the bridge.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: For the cross section inside the bridge at the downstream end, the water surface and energy are based on critical
depth over the weir.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7358

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.57	19.18	396	25.02	396	26.23	395.94	29.88	395.76
31.08	395.72	32.73	395.65	43.33	395.14	53.01	394.74	57.42	394.54
60	394.44	71.11	394	82.39	393.29	85.33	393.09	90.62	392.73
91.6	392.66	95.73	392.4	97.19	392.3	101.89	392.04	102.02	392.03
102.64	392	111.71	391.66	112.52	391.62	116.39	391.46	117.91	391.39
119.63	391.31	127.79	390.92	128.88	390.86	133.39	390.64	146.33	390
148.65	389.87	197.8	389.235	207.48	389.11	247.02	388.78	260.06	386.56
261.83	386.25	267	384.04	271.78	383.96	276.29	383.89	279.1	385.82
283.58	386.51	283.6	386.51	293.28	388	308.92	391.17	338.91	390.22
343.99	390	364.27	390	364.77	389.75	400.63	389.75	401.13	390
429.27	390	443.29	391.39	445.37	391.46	446.23	391.48	446.91	391.51
447.8	391.52	448.1	391.53	449	391.53	449.3	391.55	450.2	391.55
468.04	392	470.36	392	473.67	392.18	474.82	392.24	482.25	392.66
485.63	392.85	492.04	393.22	499.3	393.61	500.79	393.69	506.62	394
510.56	394	529.82	394.67	530.59	394.68	532.27	394.85	533.97	395.03
534.59	395.05	536.96	395.34	537.45	395.36	542.27	396	545.21	396
552.15	396.29								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	197.8	.055	261.83	.04	279.1	.055	364.77	.025
401.13	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
261.83	308.92	88.04	96.77	105.03	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	255	389	F
284	552.15	389	F

LATERAL STRUCTURE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7340

INPUT
Description:
Lateral structure position = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width = 2
Weir Coefficient = 3.1
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 2

Sta	Elev	Sta	Elev
0	391.17	35	390

Weir crest shape = Broad Crested

LATERAL STRUCTURE OUTPUT Profile #2-YR Lateral Structure

E.G. US. (ft)	387.44	Weir Sta US (ft)	
W.S. US. (ft)	387.31	Weir Sta DS (ft)	
E.G. DS (ft)	387.31	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	387.10	Wr Top Wdth (ft)	
Q US (cfs)	164.42	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	164.42	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #10-YR Lateral Structure

E.G. US. (ft)	388.67	Weir Sta US (ft)	
W.S. US. (ft)	388.40	Weir Sta DS (ft)	
E.G. DS (ft)	388.55	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	388.27	Wr Top Wdth (ft)	
Q US (cfs)	351.22	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	351.22	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #50-YR Lateral Structure

E.G. US. (ft)	389.85	Weir Sta US (ft)	
W.S. US. (ft)	389.59	Weir Sta DS (ft)	
E.G. DS (ft)	389.75	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	389.48	Wr Top Wdth (ft)	
Q US (cfs)	660.27	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	660.27	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000

Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Lateral Structure

E.G. US. (ft)	390.34	Weir Sta US (ft)	0.00
W.S. US. (ft)	390.15	Weir Sta DS (ft)	35.00
E.G. DS (ft)	390.25	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	390.04	Wr Top Wdth (ft)	1.22
Q US (cfs)	832.85	Weir Max Depth (ft)	0.04
Q Leaving Total (cfs)	0.01	Weir Avg Depth (ft)	0.02
Q DS (cfs)	832.84	Weir Flow Area (sq ft)	0.02
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	3.100
Q Weir (cfs)	0.01	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Lateral Structure

E.G. US. (ft)	390.63	Weir Sta US (ft)	0.00
W.S. US. (ft)	390.49	Weir Sta DS (ft)	35.00
E.G. DS (ft)	390.55	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	390.37	Wr Top Wdth (ft)	12.41
Q US (cfs)	956.04	Weir Max Depth (ft)	0.37
Q Leaving Total (cfs)	3.48	Weir Avg Depth (ft)	0.19
Q DS (cfs)	952.51	Weir Flow Area (sq ft)	2.30
Perc Q Leaving	0.37	Weir Coef (ft^1/2)	3.100
Q Weir (cfs)	3.48	Weir Submerg	0.00
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7261

INPUT
Description:
Station Elevation Data   num=   56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.52	11.16	396.13	11.49	396.12	14.84	396	19.03	396
31.29	395.48	32.33	395.45	37.78	395.24	39.36	395.17	40.43	395.13
45.64	394.87	46.72	394.83	47.74	394.79	50.86	394.63	51.69	394.6
55.43	394.43	56.02	394.4	56.87	394.35	65.64	394	66.27	393.97

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   66.34  393.97   68.25  393.87   69.12  393.83   71.37  393.71   72.13  393.67
   73.08  393.62   77.56  393.37   80.58  393.19   99.36     392   106.9  391.65
  117.58  391.15  124.47  390.84  131.93  390.49  142.34     390  150.21  389.53
  158.04  389.08  161.74  388.88  161.88  388.87  183.31  387.65  187.17  387.43
  187.23  387.43  215.39  386.78  238.03  387.04  238.44  387.05  242.11  383.75
  244.57  382.89  249.17  383.78  251.81  385.86  258.14  387.45  258.15  387.45
     264  388.91  282.39  395.82  284.39  395.75  295.46  395.49  296.12  395.12
  316.31  395.46

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  161.88    .085  238.44     .04  258.14    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        238.44  258.14           198.31  202.16  205.99             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7059

INPUT
Description:
Station Elevation Data    num=      31
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   394.9   12.54  394.26   17.77     394   18.74     394   37.67  392.94
   54.23     392   55.28  391.94   56.04  391.89   69.43  391.06   86.78     390
  111.05  388.93  115.58  388.73  116.27  388.69  116.33  388.69   153.2  387.09
  178.63  385.82  182.48  385.63  184.66  382.67  188.14  382.53  194.24  382.53
  195.94  384.19  198.69  385.84  198.71  385.85   209.3  392.23  221.62  403.18
  233.11  403.18  233.79  402.85  259.74   402.5  338.53  403.99  339.19     404
  350.39     404

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025  116.27    .085  178.63     .04  198.71    .085  233.11    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        178.63  198.71           168.76  169.64  170.29             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   261.9  350.39     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 6890

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   394.3   13.98     394   17.28     394   26.86   393.7   27.04   393.7
   34.09  393.42   34.57   393.4   35.15  393.38   35.72  393.35   36.46  393.31
   37.31  393.27   39.62  393.17   65.29     392   68.45  391.85   70.12  391.77
   78.63  391.37  110.47     390  112.55  389.88  113.04  389.85  118.83  389.49
     121  389.35  128.16  388.89   132.1  388.64  138.52  388.23  139.26  388.18
  151.02  388.14  177.71  386.13  206.04  385.19  209.04   382.1  209.48  381.65
  214.16  381.04  217.26  381.23  221.62  384.16  221.67   384.2  221.74  384.25
  221.98  384.45  222.05   384.5  226.69     388   227.2     388  227.34  388.12
  229.12  389.72  229.13  389.74  229.43     390  231.07  391.47  231.68     392
  231.99  392.26  234.01     394  235.13  394.96  236.34     396  238.21  397.58
  238.76     398  239.84  398.64  242.65     400   247.4  401.93  247.54     402
  254.08  402.28  311.77     404  314.64     404

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025   78.63    .085  206.04     .04  226.69    .085  254.08    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        206.04  226.69           197.24  199.49  199.59             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   304.6  314.64     405

CROSS SECTION
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RIVER: Little Plumtree
REACH: Little Plumtree RS: 6690

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.97	9.56	396.32	13.05	396.18	13.29	396.17	15.54	396.08
15.66	396.08	17.8	396	20.68	395.84	21.02	395.81	21.49	395.78
37.06	394.87	38.21	394.76	44.14	394.19	44.63	394.15	46.04	394
48	393.33	49.54	392.75	51.16	392	52.72	391.33	53.29	391.15
54.75	390.76	56.06	390.39	57.3	390	100.92	390	106.99	390.9
108.3	391.09	109.27	391.28	109.32	391.29	109.37	391.29	109.38	391.3
109.43	391.3	152.71	385.84	163.54	384.7	163.98	384.66	168.46	380.92
173.86	380.59	179.48	380.65	181.3	382.1	183.67	382.49	197.16	384.73
205.42	391.59	221.07	403.46	223.51	404	294.59	404	318.16	404

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	163.54	.04	181.3	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
163.54	181.3	377.18	363.89	351.23	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
53.01	109.48	391.28	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3.8	21.3	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6326

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.12	.17	394.1	.39	394.08	.55	394.07	1.48	394
8.54	393.52	9.16	393.45	9.97	393.36	10.47	393.3	12.77	392.95
14.58	392.76	15.81	392.56	19.55	392	20.06	391.95	22.11	391.75
23.82	391.6	25.31	391.48	29.23	391.03	33.2	390.67	35.54	390.38
36.49	390.29	38.71	390	44.96	389.14	51.95	388	56.99	387.4
58.61	387.19	67.92	386	71.44	385.39	73.02	385.16	75.4	384.84
81.11	384.1	81.6	384.03	81.9	384	83.65	383.83	84.03	383.77
89.45	383.24	90.85	383.01	91.64	382.92	97.37	382	99.04	382
99.15	381.99	99.18	381.99	100.82	381.86	104.18	381.58	104.24	381.58
136.32	380.14	161.77	380	170.99	380.01	171.86	380.01	173.35	379.93
177.41	376.15	187.21	377.05	190.57	379.27	192.39	379.55	193.53	379.72
206.36	385.54	206.41	385.59	206.58	385.77	212.57	392	213.68	392.92
214.91	394	216.25	394.9	217.66	396	219.81	397.41	220.59	398
221.57	398.69	223.68	400	225.8	401.31	227.13	402	275.55	403.66
285.17	404	287.06	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	173.35	.04	190.57	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
173.35	190.57	271.56	280.95	283.31	.1	.3

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6045

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	1.4	405.71	1.73	405.66	3.95	405.2	5.01	405.05
7.63	404.63	9.29	404.32	11.26	404	12.26	403.68	13.01	403.46
14.32	403.03	17.73	402	18.08	401.89	18.47	401.76	20.95	400.93
23.69	400.03	23.76	400	27.2	399.06	30.51	398	33.77	397.07
37.4	396	41.28	394.98	44.92	394	47.3	393.41	52.97	392

```
   55.18  391.44   58.72  390.52   60.71     390   64.51  388.98   68.17     388
   69.43  387.72   76.91     386   77.37     386   82.19  384.45   82.33   384.4
   82.38  384.39  114.77  379.87  140.12  378.58  154.89  377.51  156.71  377.38
  160.04  373.45  165.47  372.69   178.5  373.65  179.33  377.25  180.24  377.41
  191.95  379.48  205.32   385.5  217.03  395.24  217.08  395.26  217.18  395.28
   220.9  397.31  222.17  397.99  222.19  398.01   222.2  398.03  222.23   398.1
  222.25  398.16  222.35  398.36  222.61  398.88  224.29     402  326.13     402
  330.47  401.79

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  156.71     .04  179.33    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        156.71  179.33           209.04  198.49  192.65             .1       .3

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 5847

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  399.24    1.45  399.08     2.8  398.92   10.83     398   13.21  397.68
   24.43     396   25.01  395.89   35.42     394   37.27  393.74   37.79  393.69
    52.7  390.12   52.72  390.12   52.77  390.11   86.22     383  117.82  378.26
  133.59  377.77  134.53  377.22  140.83  373.57   146.8  372.61  149.54  373.16
  153.94  377.43  154.53  377.49  167.73  378.81  180.08  387.08  185.44  391.87
  185.49  391.87  185.84  391.92  189.44  391.94   190.5  392.47  190.93     396
   193.6  397.72  193.98     398  194.59  398.26  195.26  398.49  199.97     400
  266.19     400   286.7  400.45

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  133.59     .04  153.94    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        133.59  153.94           184.54  178.51  172.27             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   274.9   286.7     405

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 5668

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     394    2.83     394    6.39  393.53    8.52  393.37    9.42  393.29
   10.04  393.25   11.67  393.09    12.4  393.05   13.26  392.96   14.13  392.92
   15.52  392.77    18.5   392.7    19.6  392.59   28.55  392.15   30.78     392
   32.39   391.8   32.82  391.76    37.1  391.21   42.85  390.73      45  390.55
   46.39   390.5   46.97  390.47   47.22  390.45   51.29     390   56.62   389.6
   57.93  389.52   62.13  389.24   67.84  388.94   71.82   388.7    73.9  388.59
   77.36  388.37   78.88  388.27   82.49     388   88.83  387.18   98.59  385.99
  104.13  385.21  105.71  385.01  107.69   384.8   110.1  384.48  116.68     384
  117.78  383.94  120.53  383.72  121.02  383.67  122.28  383.55  123.44  383.42
  125.71  383.18  130.86  382.57  135.53     382  147.05  380.28  172.82  377.69
  200.62  376.14  220.02  376.22  238.56  376.33  240.62  376.34  244.41  372.35
  247.08  371.75  250.38  372.58  255.86  374.91  258.75  376.54  258.77  376.55
  273.07  384.62   286.6  395.41  293.35  398.75  298.49  401.68  303.94  403.42
  314.05     402  314.97  401.91  328.12     402  400.84     402   419.1  402.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .085  240.62     .04  258.75    .085

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        240.62  258.75           144.79  148.68  152.52             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   398.6   419.1     405
```

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5520

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.57	1.77	392.5	2.21	392.46	11.92	392	17.09	391.5
24.53	390.74	26.95	390.45	31.64	390	34.16	389.82	35.17	389.71
39.42	389.35	45.83	388.73	54.99	388.04	61.37	387.47	63.9	387.27
66.26	387.15	67.44	387.06	71.13	386.95	79.52	386.38	86.54	385.85
89.06	385.64	90.11	385.57	94.2	385.24	97.92	384.9	101.16	384.58
106.52	384	115.88	383.23	119.25	382.99	122.02	382.84	123.86	382.73
125.85	382.65	131.94	382.26	139.57	381.73	153.36	380.63	161.65	380
162.55	379.95	187.97	378	190.84	377.16	211.86	375.32	242.87	374.82
245.72	374.78	248.59	373.11	256.95	371.96	257.18	372.1	260.09	374.7
262.9	375.22	269	376.34	285.23	385.77	295.6	394.02	300.61	398.04
301.69	400	307.46	401.12	309.84	401.46	313.85	402	342.38	402.99
343.02	402.99	351.56	403.37	352.31	403.37	354.24	403.43	354.97	403.43
356.01	403.47	356.73	403.46	357.34	403.48	358.02	403.47	359.97	403.54
361.28	403.52	361.75	403.54	388.95	403.44				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	245.72	.04	260.09	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.72	260.09	75.07	77.35	79.63	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
373.3	388.95	405

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5442

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400	20.17	400	24.58	399.47	27.23	399.5	29.22	399.34
30.21	399.33	37.26	398.97	52.02	398	59.75	397.4	62.81	397.22
78.24	396	88.72	395.02	98.46	394	132.72	392.26	154.81	390
176.04	388	202.11	386.21	204.71	386	230.38	384.54	231.24	384.52
234.24	384	262.33	382.28	263.68	382.25	263.99	382.19	264.46	382.22
264.94	382.15	268.52	382	279.94	381.74	286.41	381.5	298.54	380.78
301.9	380.67	308.4	380.64	312.15	380.5	314.49	380.5	320.11	380
330.71	379.38	337.1	379.1	348.09	377.94	371.78	376.41	397.93	374.82
410.38	374.17	410.4	374.17	413.82	374	416.13	371.71	419.17	371.22
424.47	371.54	428.14	373.48	431.85	373.94	435.55	374.4	448.44	380.81
457.31	388.52	469.69	395.98	474.76	398.6	475.05	398.8	476.32	399.44
478.66	400.4	482.42	401.51	484.65	402	492.73	402	500.99	402.33
511.23	402.63	525.09	402.91	537.02	403.46	539.65	403.5	541.98	403.6
548.32	404	552.12	404.33	555.02	404.48	558.6	404.56		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	413.82	.04	428.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
413.82	428.14	0	0	0	.3	.5

SUMMARY OF MANNING'S N VALUES

River:Little Plumtree

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7
Little Plumtree	9415	.075	.04	.075				
Little Plumtree	9282	.065	.04	.065				
Little Plumtree	9224	.065	.04	.065				

Little Plumtree	9100	Culvert					
Little Plumtree	9094	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	9033	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8938	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8776	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8628	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8459	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8329	.025	.055	.016	.055	.025	.065	
Little Plumtree	8166	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8010	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	7921	.075	.025	.055	.016	.075	.025	.065
Little Plumtree	7800	Bridge						
Little Plumtree	7735	.075	.04	.055	.025	.065		
Little Plumtree	7717	Lat Struct						
Little Plumtree	7645	.025	.075	.04	.055	.025	.065	
Little Plumtree	7560	.065	.04	.055	.025	.065		
Little Plumtree	7499	.025	.055	.04	.055	.025	.065	
Little Plumtree	7437	.025	.055	.04	.055	.025	.065	
Little Plumtree	7400	Bridge						
Little Plumtree	7358	.025	.055	.04	.055	.025	.065	
Little Plumtree	7340	Lat Struct						
Little Plumtree	7261	.025	.085	.04	.085			
Little Plumtree	7059	.025	.085	.04	.085	.025		
Little Plumtree	6890	.025	.085	.04	.085	.025		
Little Plumtree	6690	.085	.04	.085				
Little Plumtree	6326	.085	.04	.085				
Little Plumtree	6045	.085	.04	.085				
Little Plumtree	5847	.085	.04	.085				
Little Plumtree	5668	.085	.04	.085				
Little Plumtree	5520	.085	.04	.085				
Little Plumtree	5442	.085	.04	.085				

SUMMARY OF REACH LENGTHS

River: Little Plumtree

Reach	River Sta.	Left	Channel	Right
Little Plumtree	9415	133.08	132.78	133.29
Little Plumtree	9282	61.4	57.86	54.02
Little Plumtree	9224	128.56	130.35	131.84
Little Plumtree	9100	Culvert		
Little Plumtree	9094	57.37	60.69	64.17
Little Plumtree	9033	96.95	94.72	92.33
Little Plumtree	8938	163.23	161.92	160.75
Little Plumtree	8776	150.65	147.84	144.92
Little Plumtree	8628	174.55	169.35	164.24
Little Plumtree	8459	130.02	130.06	129.9
Little Plumtree	8329	163	162.96	163.01
Little Plumtree	8166	156.55	156.02	156.27
Little Plumtree	8010	48.73	88.82	110.46
Little Plumtree	7921	168.2	186.1	189.78
Little Plumtree	7800	Bridge		
Little Plumtree	7735	142.82	90.04	69.09
Little Plumtree	7717	Lat Struct		
Little Plumtree	7645	85.44	84.61	84.17
Little Plumtree	7560	62.59	61.86	60.62
Little Plumtree	7499	62.52	61.98	61.21
Little Plumtree	7437	78.48	78.48	79.28
Little Plumtree	7400	Bridge		
Little Plumtree	7358	88.04	96.77	105.03
Little Plumtree	7340	Lat Struct		
Little Plumtree	7261	198.31	202.16	205.99
Little Plumtree	7059	168.76	169.64	170.29
Little Plumtree	6890	197.24	199.49	199.59
Little Plumtree	6690	377.18	363.89	351.23
Little Plumtree	6326	271.56	280.95	283.31
Little Plumtree	6045	209.04	198.49	192.65
Little Plumtree	5847	184.54	178.51	172.27
Little Plumtree	5668	144.79	148.68	152.52
Little Plumtree	5520	75.07	77.35	79.63
Little Plumtree	5442	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Little Plumtree

Reach	River Sta.	Contr.	Expan.
Little Plumtree	9415	.1	.3
Little Plumtree	9282	.1	.3
Little Plumtree	9224	.3	.5
Little Plumtree	9100	Culvert	
Little Plumtree	9094	.3	.5
Little Plumtree	9033	.1	.3
Little Plumtree	8938	.1	.3
Little Plumtree	8776	.1	.3
Little Plumtree	8628	.1	.3
Little Plumtree	8459	.1	.3
Little Plumtree	8329	.1	.3
Little Plumtree	8166	.1	.3
Little Plumtree	8010	.1	.3
Little Plumtree	7921	.3	.5
Little Plumtree	7800	Bridge	
Little Plumtree	7735	.3	.5
Little Plumtree	7717	Lat Struct	
Little Plumtree	7645	.1	.3
Little Plumtree	7560	.1	.3
Little Plumtree	7499	.1	.3
Little Plumtree	7437	.3	.5
Little Plumtree	7400	Bridge	
Little Plumtree	7358	.3	.5
Little Plumtree	7340	Lat Struct	
Little Plumtree	7261	.1	.3
Little Plumtree	7059	.1	.3
Little Plumtree	6890	.1	.3
Little Plumtree	6690	.1	.3
Little Plumtree	6326	.1	.3
Little Plumtree	6045	.1	.3
Little Plumtree	5847	.1	.3
Little Plumtree	5668	.1	.3
Little Plumtree	5520	.1	.3
Little Plumtree	5442	.3	.5

HEC-RAS Plan: U River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	9415	2-YR	189.00	396.28	399.84	398.71	400.04	0.003895	3.64	51.98	25.34	0.45
Little Plumtree	9415	10-YR	397.00	396.28	401.69	399.74	401.88	0.001752	3.59	137.08	66.30	0.33
Little Plumtree	9415	50-YR	698.00	396.28	402.60	400.79	402.91	0.002253	4.72	204.54	81.66	0.39
Little Plumtree	9415	100-YR	862.00	396.28	402.98	401.26	403.35	0.002497	5.24	236.87	90.25	0.41
Little Plumtree	9415	7-30-2016	945.00	396.28	403.12	401.44	403.53	0.002682	5.54	249.81	94.39	0.43
Little Plumtree	9282	2-YR	189.00	395.11	399.46		399.62	0.002464	3.22	61.27	32.20	0.35
Little Plumtree	9282	10-YR	397.00	395.11	401.53		401.68	0.001167	3.28	165.08	74.89	0.27
Little Plumtree	9282	50-YR	698.00	395.11	402.37		402.63	0.001777	4.52	240.86	109.41	0.34
Little Plumtree	9282	100-YR	862.00	395.11	402.72		403.03	0.002024	5.03	282.62	126.54	0.37
Little Plumtree	9282	7-30-2016	945.00	395.11	402.85		403.19	0.002197	5.32	298.36	131.84	0.38
Little Plumtree	9224	2-YR	189.00	395.12	399.39	397.47	399.50	0.001519	2.60	72.56	27.75	0.28
Little Plumtree	9224	10-YR	397.00	395.12	401.49	398.46	401.62	0.000892	2.88	152.81	55.87	0.24
Little Plumtree	9224	50-YR	698.00	395.12	402.28	399.49	402.53	0.001495	4.16	217.86	111.90	0.32
Little Plumtree	9224	100-YR	862.00	395.12	402.62	399.93	402.92	0.001723	4.65	265.59	160.39	0.34
Little Plumtree	9224	7-30-2016	945.00	395.12	402.73	400.14	403.07	0.001887	4.93	284.11	179.10	0.36
Little Plumtree	9100		Culvert									
Little Plumtree	9094	2-YR	189.00	394.82	396.86	396.86	397.65	0.003475	7.11	26.57	16.91	1.00
Little Plumtree	9094	10-YR	397.00	394.82	398.52	397.92	399.22	0.001505	6.74	59.57	23.14	0.71
Little Plumtree	9094	50-YR	698.00	394.82	400.42	399.00	401.14	0.000793	6.85	114.78	45.19	0.56
Little Plumtree	9094	100-YR	862.00	394.82	401.51	399.51	402.08	0.000507	6.31	210.98	131.09	0.47
Little Plumtree	9094	7-30-2016	945.00	394.82	402.01	399.74	402.47	0.000400	5.93	279.95	146.03	0.42
Little Plumtree	9033	2-YR	189.00	394.25	396.28	396.45	397.33	0.004753	8.22	23.03	15.19	1.16
Little Plumtree	9033	10-YR	397.00	394.25	397.56	397.56	398.91	0.002770	9.37	45.59	20.08	0.98
Little Plumtree	9033	50-YR	698.00	394.25	398.81	398.81	400.71	0.002436	11.21	73.69	24.92	0.98
Little Plumtree	9033	100-YR	862.00	394.25	399.43	399.43	401.55	0.002273	11.90	90.55	29.53	0.97
Little Plumtree	9033	7-30-2016	945.00	394.25	399.93	399.75	401.96	0.001915	11.69	107.12	40.76	0.90
Little Plumtree	8938	2-YR	189.00	393.85	396.04	396.12	396.99	0.003935	7.83	24.23	15.40	1.07
Little Plumtree	8938	10-YR	397.00	393.85	397.12	397.25	398.62	0.003187	9.85	43.70	20.41	1.05
Little Plumtree	8938	50-YR	698.00	393.85	398.26	398.55	400.43	0.002984	12.00	69.95	25.89	1.07
Little Plumtree	8938	100-YR	862.00	393.85	398.81	399.17	401.28	0.002883	12.87	85.04	30.10	1.08
Little Plumtree	8938	7-30-2016	945.00	393.85	400.26	400.26	401.61	0.001162	9.87	165.03	102.76	0.72
Little Plumtree	8776	2-YR	189.00	392.95	394.86	395.16	396.14	0.006497	9.09	20.80	14.60	1.34
Little Plumtree	8776	10-YR	397.00	392.95	395.72	396.28	397.86	0.005914	11.78	35.09	18.71	1.38
Little Plumtree	8776	50-YR	698.00	392.95	396.75	397.56	399.73	0.005055	14.00	56.97	23.69	1.36
Little Plumtree	8776	100-YR	862.00	392.95	397.23	398.12	400.60	0.004799	14.94	68.93	26.03	1.36
Little Plumtree	8776	7-30-2016	945.00	392.95	397.42	398.43	401.04	0.004856	15.53	73.98	27.03	1.38
Little Plumtree	8628	2-YR	189.00	391.99	393.81	394.17	395.15	0.006857	9.26	20.40	14.48	1.38
Little Plumtree	8628	10-YR	397.00	391.99	394.61	395.26	396.90	0.007013	12.15	33.23	18.04	1.48
Little Plumtree	8628	50-YR	698.00	391.99	395.52	396.49	398.86	0.006394	14.75	51.70	22.67	1.50
Little Plumtree	8628	100-YR	862.00	391.99	395.96	397.13	399.76	0.006101	15.78	62.28	25.59	1.50
Little Plumtree	8628	7-30-2016	945.00	391.99	396.15	398.16	400.20	0.006074	16.33	67.31	26.86	1.51
Little Plumtree	8459	2-YR	189.00	391.22	392.87	393.14	393.98	0.006118	8.45	22.37	17.09	1.30
Little Plumtree	8459	10-YR	397.00	391.22	393.52	394.10	395.58	0.007621	11.51	34.53	19.81	1.52
Little Plumtree	8459	50-YR	698.00	391.22	394.14	395.21	397.59	0.008902	14.90	47.59	22.37	1.72
Little Plumtree	8459	100-YR	862.00	391.22	394.46	395.74	398.51	0.008815	16.15	54.97	23.68	1.75
Little Plumtree	8459	7-30-2016	945.00	391.22	394.62	395.99	398.95	0.008774	16.72	58.64	24.43	1.76
Little Plumtree	8329	2-YR	189.00	390.59	392.24	392.43	393.21	0.005183	7.90	23.92	17.84	1.20
Little Plumtree	8329	10-YR	397.00	390.59	393.01	393.37	394.64	0.005341	10.21	39.00	20.91	1.29
Little Plumtree	8329	50-YR	698.00	390.59	393.69	394.47	396.43	0.006098	13.31	53.95	23.59	1.45
Little Plumtree	8329	100-YR	862.00	390.59	395.90	394.99	396.93	0.001069	8.39	149.04	116.33	0.67
Little Plumtree	8329	7-30-2016	945.00	390.59	396.28	395.22	397.16	0.000883	8.02	209.86	180.09	0.62
Little Plumtree	8166	2-YR	189.00	389.90	392.27	391.86	392.72	0.001611	5.38	35.32	20.31	0.70
Little Plumtree	8166	10-YR	397.00	389.90	393.53	392.82	394.19	0.001225	6.55	64.80	28.85	0.67
Little Plumtree	8166	50-YR	698.00	389.90	395.25	393.93	395.86	0.000676	6.59	180.23	136.07	0.53
Little Plumtree	8166	100-YR	862.00	389.90	396.28	395.00	396.63	0.000366	5.53	344.07	181.16	0.41
Little Plumtree	8166	7-30-2016	945.00	389.90	396.58		396.91	0.000332	5.45	401.41	193.41	0.39
Little Plumtree	8010	2-YR	189.00	388.95	391.52	391.52	392.33	0.003365	7.24	26.39	33.12	1.00
Little Plumtree	8010	10-YR	397.00	388.95	392.57	392.57	393.85	0.002797	9.14	46.60	44.00	0.99
Little Plumtree	8010	50-YR	698.00	388.95	393.79	393.79	395.56	0.002364	10.81	75.84	54.85	0.97
Little Plumtree	8010	100-YR	862.00	388.95	394.37	394.37	396.36	0.002233	11.52	91.68	61.76	0.96
Little Plumtree	8010	7-30-2016	945.00	388.95	395.28	395.28	396.71	0.001317	10.01	144.57	136.26	0.76

HEC-RAS Plan: U River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	7921	2-YR	189.00	387.21	390.18	388.55	390.21	0.000081	1.35	140.66	74.71	0.17
Little Plumtree	7921	10-YR	397.00	387.21	391.26	389.09	391.31	0.000088	1.86	214.62	83.02	0.19
Little Plumtree	7921	50-YR	698.00	387.21	392.23	389.61	392.32	0.000111	2.50	281.64	116.55	0.22
Little Plumtree	7921	100-YR	862.00	387.21	392.64	389.83	392.77	0.000122	2.80	310.36	123.42	0.23
Little Plumtree	7921	7-30-2016	945.00	387.21	392.93	389.94	393.06	0.000120	2.89	330.14	127.94	0.23
Little Plumtree	7800		Bridge									
Little Plumtree	7735	2-YR	189.00	386.40	390.12	388.48	390.15	0.000506	1.43	149.32	99.63	0.17
Little Plumtree	7735	10-YR	397.00	386.40	391.17	389.03	391.22	0.000619	1.99	224.98	111.30	0.19
Little Plumtree	7735	50-YR	698.00	386.40	392.10	389.56	392.20	0.000830	2.70	292.17	117.78	0.23
Little Plumtree	7735	100-YR	862.00	386.40	392.49	389.79	392.62	0.000940	3.04	320.38	120.50	0.25
Little Plumtree	7735	7-30-2016	945.00	386.40	392.75	389.90	392.89	0.000944	3.15	338.65	122.26	0.25
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	164.42	386.41	389.68		389.96	0.006467	4.27	38.49	21.38	0.56
Little Plumtree	7645	10-YR	351.22	386.41	390.58		390.99	0.006686	5.33	84.77	67.25	0.64
Little Plumtree	7645	50-YR	660.27	386.41	391.38		391.90	0.007252	6.31	142.61	77.88	0.72
Little Plumtree	7645	100-YR	832.85	386.41	391.70		392.29	0.007680	6.74	168.66	82.21	0.75
Little Plumtree	7645	7-30-2016	956.04	386.41	391.91		392.53	0.007947	7.01	186.02	84.95	0.77
Little Plumtree	7560	2-YR	164.42	385.70	389.16	388.51	389.45	0.005787	4.27	39.34	28.59	0.61
Little Plumtree	7560	10-YR	351.22	385.70	390.02	389.61	390.39	0.007193	5.09	85.47	73.35	0.66
Little Plumtree	7560	50-YR	660.27	385.70	390.78		391.22	0.008366	5.81	146.61	88.00	0.69
Little Plumtree	7560	100-YR	832.85	385.70	391.02		391.54	0.009657	6.36	168.79	92.66	0.73
Little Plumtree	7560	7-30-2016	956.04	385.70	391.18		391.75	0.010452	6.69	183.67	101.76	0.76
Little Plumtree	7499	2-YR	164.42	385.87	388.16	388.16	388.81	0.019270	6.57	26.84	22.71	0.92
Little Plumtree	7499	10-YR	351.22	385.87	389.23	389.23	389.81	0.011509	6.61	68.44	86.39	0.85
Little Plumtree	7499	50-YR	660.27	385.87	390.52		390.78	0.004662	4.98	206.57	173.26	0.54
Little Plumtree	7499	100-YR	832.85	385.87	390.83		391.07	0.004347	4.93	262.55	185.28	0.53
Little Plumtree	7499	7-30-2016	956.04	385.87	391.04		391.26	0.004027	4.79	302.80	194.71	0.52
Little Plumtree	7437	2-YR	164.42	383.80	387.50	385.85	387.61	0.002288	2.68	61.30	24.82	0.30
Little Plumtree	7437	10-YR	351.22	383.80	389.08	386.78	389.25	0.002475	3.36	105.12	49.41	0.32
Little Plumtree	7437	50-YR	660.27	383.80	390.17	387.87	390.52	0.003896	4.71	145.56	141.36	0.40
Little Plumtree	7437	100-YR	832.85	383.80	390.44	388.38	390.80	0.004207	5.01	208.08	181.62	0.42
Little Plumtree	7437	7-30-2016	956.04	383.80	390.74	388.69	391.03	0.003549	4.72	266.35	218.41	0.39
Little Plumtree	7400		Bridge									
Little Plumtree	7358	2-YR	164.42	383.89	387.31	385.84	387.44	0.001931	2.96	57.88	33.14	0.33
Little Plumtree	7358	10-YR	351.22	383.89	388.41	386.86	388.67	0.002555	4.20	89.63	46.06	0.39
Little Plumtree	7358	50-YR	660.27	383.89	389.59	387.91	389.85	0.002605	4.34	197.89	130.80	0.42
Little Plumtree	7358	100-YR	832.85	383.89	390.16	388.36	390.34	0.001912	3.90	305.27	251.14	0.36
Little Plumtree	7358	7-30-2016	956.04	383.89	390.50	388.67	390.63	0.001495	3.54	394.72	273.40	0.32
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	164.42	382.89	386.74		387.07	0.006508	4.60	35.71	16.55	0.55
Little Plumtree	7261	10-YR	351.22	382.89	388.03		388.34	0.004517	4.86	115.56	83.80	0.49
Little Plumtree	7261	50-YR	660.27	382.89	389.30		389.57	0.003132	5.10	239.02	110.74	0.43
Little Plumtree	7261	100-YR	832.84	382.89	389.83		390.10	0.002760	5.18	301.38	121.32	0.41
Little Plumtree	7261	7-30-2016	952.51	382.89	390.16		390.42	0.002596	5.24	341.54	128.27	0.41
Little Plumtree	7059	2-YR	164.42	382.53	385.44		385.78	0.006329	4.66	35.29	15.40	0.54
Little Plumtree	7059	10-YR	351.22	382.53	386.89		387.33	0.005402	5.40	75.50	43.22	0.54
Little Plumtree	7059	50-YR	660.27	382.53	388.20		388.77	0.004829	6.44	152.81	75.05	0.54
Little Plumtree	7059	100-YR	832.84	382.53	388.76		389.36	0.004589	6.79	198.83	88.73	0.53
Little Plumtree	7059	7-30-2016	952.51	382.53	389.18		389.74	0.004065	6.75	238.24	98.95	0.51
Little Plumtree	6890	2-YR	164.42	381.04	384.43		384.75	0.005722	4.57	36.01	15.18	0.52
Little Plumtree	6890	10-YR	351.22	381.04	385.72		386.29	0.006834	6.08	61.56	33.56	0.59
Little Plumtree	6890	50-YR	660.27	381.04	387.24		387.87	0.005762	6.76	138.81	62.75	0.57
Little Plumtree	6890	100-YR	832.84	381.04	387.91		388.53	0.005263	6.90	183.98	72.50	0.55
Little Plumtree	6890	7-30-2016	952.51	381.04	388.30		388.96	0.005174	7.17	215.24	90.15	0.56
Little Plumtree	6690	2-YR	164.42	380.59	383.15	382.49	383.50	0.006851	4.85	36.61	21.83	0.58
Little Plumtree	6690	10-YR	351.22	380.59	384.32	383.57	384.89	0.007157	6.25	67.35	30.34	0.63
Little Plumtree	6690	50-YR	660.27	380.59	385.07	384.85	386.22	0.011960	9.06	92.24	37.50	0.83
Little Plumtree	6690	100-YR	832.84	380.59	385.43	385.35	386.86	0.013354	10.19	106.53	41.37	0.89
Little Plumtree	6690	7-30-2016	952.51	380.59	385.68	385.68	387.27	0.013851	10.80	117.39	44.09	0.92

HEC-RAS Plan: U River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	6326	2-YR	164.42	376.15	378.48	378.48	379.28	0.022986	7.19	22.87	14.46	1.01
Little Plumtree	6326	10-YR	351.22	376.15	379.58	379.58	380.76	0.019971	8.70	40.66	18.89	0.99
Little Plumtree	6326	50-YR	660.27	376.15	381.08	381.08	382.09	0.010557	8.64	121.07	81.22	0.78
Little Plumtree	6326	100-YR	832.84	376.15	381.53	381.53	382.56	0.009984	9.05	160.09	92.24	0.77
Little Plumtree	6326	7-30-2016	952.51	376.15	381.77	381.79	382.84	0.010088	9.42	182.01	96.08	0.78
Little Plumtree	6045	2-YR	164.42	372.69	377.08	374.48	377.14	0.000725	2.07	79.61	22.32	0.19
Little Plumtree	6045	10-YR	351.22	372.69	378.50	375.35	378.64	0.001068	3.10	124.72	45.13	0.25
Little Plumtree	6045	50-YR	660.27	372.69	379.90	376.48	380.16	0.001429	4.24	212.34	78.37	0.30
Little Plumtree	6045	100-YR	832.84	372.69	380.50	377.02	380.80	0.001535	4.66	260.89	83.99	0.31
Little Plumtree	6045	7-30-2016	952.51	372.69	380.88	377.34	381.20	0.001594	4.92	292.80	87.48	0.32
Little Plumtree	5847	2-YR	164.42	372.61	376.68		376.87	0.002946	3.53	46.57	17.71	0.38
Little Plumtree	5847	10-YR	351.22	372.61	377.83		378.23	0.004496	5.11	69.49	26.24	0.49
Little Plumtree	5847	50-YR	660.27	372.61	378.85		379.60	0.006092	7.09	113.58	53.87	0.60
Little Plumtree	5847	100-YR	832.84	372.61	379.29	378.44	380.19	0.006564	7.86	138.53	57.52	0.63
Little Plumtree	5847	7-30-2016	952.51	372.61	379.58	378.90	380.56	0.006797	8.31	155.26	59.85	0.65
Little Plumtree	5668	2-YR	164.42	371.75	376.11		376.32	0.003266	3.67	44.81	17.15	0.40
Little Plumtree	5668	10-YR	351.22	371.75	377.11		377.45	0.004125	4.96	106.26	76.45	0.47
Little Plumtree	5668	50-YR	660.27	371.75	378.26		378.64	0.003758	5.74	206.32	94.65	0.47
Little Plumtree	5668	100-YR	832.84	371.75	378.81		379.20	0.003485	5.96	260.47	101.13	0.46
Little Plumtree	5668	7-30-2016	952.51	371.75	379.16		379.55	0.003349	6.10	296.43	105.22	0.46
Little Plumtree	5520	2-YR	164.42	371.96	375.01	374.55	375.50	0.010301	5.63	30.98	30.42	0.70
Little Plumtree	5520	10-YR	351.22	371.96	376.32		376.74	0.005512	5.75	104.19	68.53	0.55
Little Plumtree	5520	50-YR	660.27	371.96	377.71		378.08	0.003805	6.02	210.63	82.40	0.49
Little Plumtree	5520	100-YR	832.84	371.96	378.29		378.67	0.003594	6.33	259.69	88.17	0.48
Little Plumtree	5520	7-30-2016	952.51	371.96	378.63		379.04	0.003596	6.59	290.37	93.16	0.49
Little Plumtree	5442	2-YR	164.42	371.22	374.83	373.49	375.04	0.002782	3.74	55.16	38.67	0.39
Little Plumtree	5442	10-YR	351.22	371.22	376.11	374.74	376.41	0.002782	4.77	119.97	62.36	0.41
Little Plumtree	5442	50-YR	660.27	371.22	377.46	375.95	377.83	0.002785	5.75	220.37	86.24	0.43
Little Plumtree	5442	100-YR	832.84	371.22	378.04	376.45	378.43	0.002782	6.14	272.92	95.72	0.44
Little Plumtree	5442	7-30-2016	952.51	371.22	378.39	376.74	378.79	0.002780	6.37	306.82	99.71	0.44

HEC-RAS Plan: U River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	9415	2-YR	400.04	399.84	0.21	0.41	0.01		189.00		25.34	0.48
Little Plumtree	9415	10-YR	401.88	401.69	0.19	0.19	0.01	4.78	370.53	21.70	66.30	0.38
Little Plumtree	9415	50-YR	402.91	402.60	0.30	0.26	0.01	22.23	607.56	68.21	81.66	0.62
Little Plumtree	9415	100-YR	403.35	402.98	0.37	0.30	0.02	32.92	730.16	98.92	90.25	0.74
Little Plumtree	9415	7-30-2016	403.53	403.12	0.40	0.32	0.02	38.08	792.70	114.21	94.39	0.82
Little Plumtree	9282	2-YR	399.62	399.46	0.16	0.11	0.02	0.59	187.38	1.03	32.20	0.35
Little Plumtree	9282	10-YR	401.68	401.53	0.15	0.06	0.01	20.04	344.72	32.24	74.89	0.30
Little Plumtree	9282	50-YR	402.63	402.37	0.26	0.09	0.00	64.72	560.53	72.75	109.41	0.54
Little Plumtree	9282	100-YR	403.03	402.72	0.31	0.11	0.00	98.01	663.95	100.04	126.54	0.66
Little Plumtree	9282	7-30-2016	403.19	402.85	0.34	0.12	0.00	115.64	715.99	113.37	131.84	0.73
Little Plumtree	9224	2-YR	399.50	399.39	0.11				189.00		27.75	0.23
Little Plumtree	9224	10-YR	401.62	401.49	0.13			3.78	386.92	6.30	55.87	0.23
Little Plumtree	9224	50-YR	402.53	402.28	0.25			13.28	654.80	29.91	111.90	0.46
Little Plumtree	9224	100-YR	402.92	402.62	0.30			25.61	778.74	57.64	160.39	0.56
Little Plumtree	9224	7-30-2016	403.07	402.73	0.34			32.63	841.59	70.78	179.10	0.63
Little Plumtree	9100		Culvert									
Little Plumtree	9094	2-YR	397.65	396.86	0.79	0.25	0.08		189.00		16.91	0.32
Little Plumtree	9094	10-YR	399.22	398.52	0.71	0.12	0.19	0.40	396.60		23.14	0.24
Little Plumtree	9094	50-YR	401.14	400.42	0.72	0.08	0.35	7.55	687.36	3.09	45.19	0.21
Little Plumtree	9094	100-YR	402.08	401.51	0.56	0.06	0.47	23.27	784.23	54.50	131.09	0.17
Little Plumtree	9094	7-30-2016	402.47	402.01	0.47	0.05	0.47	52.87	801.05	91.07	146.03	0.14
Little Plumtree	9033	2-YR	397.33	396.28	1.05	0.37	0.06		188.99	0.01	15.19	0.43
Little Plumtree	9033	10-YR	398.91	397.56	1.35	0.28	0.01	1.50	393.31	2.20	20.08	0.46
Little Plumtree	9033	50-YR	400.71	398.81	1.90	0.25	0.03	8.66	678.66	10.68	24.92	0.58
Little Plumtree	9033	100-YR	401.55	399.43	2.12	0.24	0.04	14.86	830.25	16.88	29.53	0.63
Little Plumtree	9033	7-30-2016	401.96	399.93	2.03	0.14	0.20	19.35	902.22	23.43	40.76	0.58
Little Plumtree	8938	2-YR	396.99	396.04	0.95	0.81	0.03	0.01	188.97	0.02	15.40	0.38
Little Plumtree	8938	10-YR	398.62	397.12	1.49	0.69	0.07	1.68	392.91	2.41	20.41	0.51
Little Plumtree	8938	50-YR	400.43	398.26	2.17	0.62	0.08	8.65	676.75	12.60	25.89	0.68
Little Plumtree	8938	100-YR	401.28	398.81	2.47	0.59	0.09	14.55	827.23	20.22	30.10	0.75
Little Plumtree	8938	7-30-2016	401.61	400.26	1.35	0.34	0.23	37.18	842.17	65.65	102.76	0.40
Little Plumtree	8776	2-YR	396.14	394.86	1.28	0.99	0.00		189.00		14.60	0.54
Little Plumtree	8776	10-YR	397.86	395.72	2.15	0.95	0.01	0.60	395.34	1.05	18.71	0.78
Little Plumtree	8776	50-YR	399.73	396.75	2.99	0.84	0.04	5.62	684.06	8.32	23.69	0.97
Little Plumtree	8776	100-YR	400.60	397.23	3.37	0.80	0.04	10.37	836.72	14.90	26.03	1.06
Little Plumtree	8776	7-30-2016	401.04	397.42	3.63	0.80	0.04	12.85	913.70	18.45	27.03	1.13
Little Plumtree	8628	2-YR	395.15	393.81	1.33	1.10	0.07		189.00		14.48	0.57
Little Plumtree	8628	10-YR	396.90	394.61	2.29	1.24	0.07	0.37	396.47	0.16	18.04	0.86
Little Plumtree	8628	50-YR	398.86	395.52	3.34	1.27	0.01	4.62	690.01	3.37	22.67	1.12
Little Plumtree	8628	100-YR	399.76	395.96	3.80	1.23	0.02	8.88	846.03	7.08	25.59	1.22
Little Plumtree	8628	7-30-2016	400.20	396.15	4.05	1.23	0.03	11.62	924.06	9.32	26.86	1.28
Little Plumtree	8459	2-YR	393.98	392.87	1.11	0.73	0.04		189.00		17.09	0.48
Little Plumtree	8459	10-YR	395.58	393.52	2.06	0.82	0.13		396.98	0.02	19.81	0.81
Little Plumtree	8459	50-YR	397.59	394.14	3.44	0.95	0.21	0.07	697.00	0.93	22.37	1.23
Little Plumtree	8459	100-YR	398.51	394.46	4.04	0.20	0.22	0.45	859.35	2.21	23.68	1.39
Little Plumtree	8459	7-30-2016	398.95	394.62	4.33	0.17	0.29	0.78	941.19	3.02	24.43	1.46
Little Plumtree	8329	2-YR	393.21	392.24	0.97	0.37	0.08		189.00		17.84	0.42
Little Plumtree	8329	10-YR	394.64	393.01	1.62	0.26	0.09	0.07	396.92	0.00	20.91	0.62
Little Plumtree	8329	50-YR	396.43	393.69	2.74	0.16	0.16	1.31	696.07	0.62	23.59	0.95
Little Plumtree	8329	100-YR	396.93	395.90	1.03	0.09	0.20	23.95	811.24	26.81	116.33	0.31
Little Plumtree	8329	7-30-2016	397.16	396.28	0.88	0.08	0.17	56.27	835.30	53.43	180.09	0.27
Little Plumtree	8166	2-YR	392.72	392.27	0.45	0.35	0.04	0.09	188.91		20.31	0.17
Little Plumtree	8166	10-YR	394.19	393.53	0.66	0.28	0.06	2.35	394.13	0.52	28.85	0.22
Little Plumtree	8166	50-YR	395.86	395.25	0.60	0.18	0.12	42.71	623.61	31.68	136.07	0.19
Little Plumtree	8166	100-YR	396.63	396.28	0.35	0.12	0.16	113.83	636.90	111.27	181.16	0.13
Little Plumtree	8166	7-30-2016	396.91	396.58	0.33	0.09	0.11	140.45	661.40	143.15	193.41	0.12
Little Plumtree	8010	2-YR	392.33	391.52	0.81	0.02	0.24	0.21	188.79		33.12	0.33
Little Plumtree	8010	10-YR	393.85	392.57	1.29	0.02	0.37	2.96	393.20	0.83	44.00	0.44
Little Plumtree	8010	50-YR	395.56	393.79	1.77	0.03	0.50	12.07	679.12	6.81	54.85	0.55
Little Plumtree	8010	100-YR	396.36	394.37	1.99	0.03	0.56	19.10	830.58	12.32	61.76	0.59
Little Plumtree	8010	7-30-2016	396.71	395.28	1.43	0.02	0.39	43.11	868.81	33.08	136.26	0.42
Little Plumtree	7921	2-YR	390.21	390.18	0.03	0.00	0.00	0.03	188.87	0.10	74.71	0.01
Little Plumtree	7921	10-YR	391.31	391.26	0.05	0.00	0.00	0.24	396.39	0.37	83.02	0.02

HEC-RAS Plan: U River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	7921	50-YR	392.32	392.23	0.10	0.00	0.00	0.62	696.58	0.80	116.55	0.03
Little Plumtree	7921	100-YR	392.77	392.64	0.12	0.00	0.00	0.85	860.11	1.04	123.42	0.03
Little Plumtree	7921	7-30-2016	393.06	392.93	0.13	0.00	0.00	0.99	942.84	1.18	127.94	0.04
Little Plumtree	7800		Bridge									
Little Plumtree	7735	2-YR	390.15	390.12	0.03	0.11	0.08	18.42	170.58		99.63	0.07
Little Plumtree	7735	10-YR	391.22	391.17	0.06	0.13	0.11	46.82	350.18		111.30	0.12
Little Plumtree	7735	50-YR	392.20	392.10	0.10	0.18	0.13	89.23	608.77		117.78	0.21
Little Plumtree	7735	100-YR	392.62	392.49	0.13	0.20	0.14	112.77	749.23		120.50	0.26
Little Plumtree	7735	7-30-2016	392.89	392.75	0.14	0.21	0.14	125.22	819.78		122.26	0.28
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	389.96	389.68	0.28	0.52	0.00		164.42		21.38	0.69
Little Plumtree	7645	10-YR	390.99	390.58	0.41	0.59	0.01	28.62	322.60		67.25	0.85
Little Plumtree	7645	50-YR	391.90	391.38	0.52	0.66	0.02	115.79	544.48		77.88	1.04
Little Plumtree	7645	100-YR	392.29	391.70	0.58	0.73	0.02	168.31	664.55		82.21	1.16
Little Plumtree	7645	7-30-2016	392.53	391.91	0.62	0.77	0.02	206.85	749.19		84.95	1.24
Little Plumtree	7560	2-YR	389.45	389.16	0.28	0.60	0.04	1.14	163.28		28.59	0.51
Little Plumtree	7560	10-YR	390.39	390.02	0.37	0.56	0.02	28.82	322.40		73.35	0.79
Little Plumtree	7560	50-YR	391.22	390.78	0.44	0.38	0.05	126.32	533.95		88.00	1.10
Little Plumtree	7560	100-YR	391.54	391.02	0.52	0.39	0.08	181.69	651.16		92.66	1.34
Little Plumtree	7560	7-30-2016	391.75	391.18	0.57	0.38	0.10	223.21	732.83	0.00	101.76	1.50
Little Plumtree	7499	2-YR	388.81	388.16	0.65	0.31	0.16	4.61	159.81		22.71	1.70
Little Plumtree	7499	10-YR	389.81	389.23	0.59	0.29	0.12	54.97	296.25		86.39	1.24
Little Plumtree	7499	50-YR	390.78	390.52	0.26	0.26	0.01	239.93	397.60	22.74	173.26	0.72
Little Plumtree	7499	100-YR	391.07	390.83	0.24	0.27	0.01	317.37	440.87	74.62	185.28	0.68
Little Plumtree	7499	7-30-2016	391.26	391.04	0.22	0.23	0.01	368.62	464.47	122.94	194.71	0.63
Little Plumtree	7437	2-YR	387.61	387.50	0.11	0.04	0.00		164.42		24.82	0.32
Little Plumtree	7437	10-YR	389.25	389.08	0.17			0.38	350.84		49.41	0.48
Little Plumtree	7437	50-YR	390.52	390.17	0.34			5.82	652.69	1.76	141.36	0.91
Little Plumtree	7437	100-YR	390.80	390.44	0.35			43.30	739.64	49.91	181.62	1.03
Little Plumtree	7437	7-30-2016	391.03	390.74	0.28			102.74	744.34	108.96	218.41	0.90
Little Plumtree	7400		Bridge									
Little Plumtree	7358	2-YR	387.44	387.31	0.13	0.31	0.06	2.49	161.93		33.14	0.28
Little Plumtree	7358	10-YR	388.67	388.41	0.26	0.32	0.01	19.52	331.70		46.06	0.54
Little Plumtree	7358	50-YR	389.85	389.59	0.26	0.27	0.01	84.19	576.09		130.80	0.53
Little Plumtree	7358	100-YR	390.34	390.16	0.18	0.21	0.02	202.60	607.04	23.22	251.14	0.43
Little Plumtree	7358	7-30-2016	390.63	390.50	0.14	0.18	0.04	286.27	603.13	66.64	273.40	0.35
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	387.07	386.74	0.33	1.30	0.00		164.42		16.55	0.77
Little Plumtree	7261	10-YR	388.34	388.03	0.31	0.99	0.01	59.61	291.27	0.34	83.80	0.76
Little Plumtree	7261	50-YR	389.57	389.30	0.28	0.77	0.03	220.76	433.16	6.35	110.74	0.75
Little Plumtree	7261	100-YR	390.10	389.83	0.26	0.70	0.03	326.77	494.54	11.54	121.32	0.74
Little Plumtree	7261	7-30-2016	390.42	390.16	0.26	0.64	0.03	403.21	533.91	15.39	128.27	0.75
Little Plumtree	7059	2-YR	385.78	385.44	0.34	1.02	0.00		164.42		15.40	0.78
Little Plumtree	7059	10-YR	387.33	386.89	0.44	1.03	0.01	9.68	340.86	0.67	43.22	0.94
Little Plumtree	7059	50-YR	388.77	388.20	0.57	0.89	0.01	78.19	576.48	5.61	75.05	1.19
Little Plumtree	7059	100-YR	389.36	388.76	0.60	0.83	0.00	138.41	684.76	9.67	88.73	1.27
Little Plumtree	7059	7-30-2016	389.74	389.18	0.56	0.77	0.01	202.54	736.93	13.04	98.95	1.22
Little Plumtree	6890	2-YR	384.75	384.43	0.32	1.25	0.00		164.42		15.18	0.74
Little Plumtree	6890	10-YR	386.29	385.72	0.57	1.39	0.00	2.50	348.71		33.56	1.19
Little Plumtree	6890	50-YR	387.87	387.24	0.63	1.60	0.05	80.79	579.48		62.75	1.33
Little Plumtree	6890	100-YR	388.53	387.91	0.62	1.58	0.08	148.91	683.93		72.50	1.35
Little Plumtree	6890	7-30-2016	388.96	388.30	0.65	1.59	0.09	182.91	769.51	0.09	90.15	1.42
Little Plumtree	6690	2-YR	383.50	383.15	0.36	4.17	0.04		161.34	3.09	21.83	0.85
Little Plumtree	6690	10-YR	384.89	384.32	0.57	4.07	0.06		327.69	23.53	30.34	1.25
Little Plumtree	6690	50-YR	386.22	385.07	1.15	4.08	0.04	0.39	591.69	68.19	37.50	2.48
Little Plumtree	6690	100-YR	386.86	385.43	1.43	4.18	0.12	2.58	731.14	99.13	41.37	3.05
Little Plumtree	6690	7-30-2016	387.27	385.68	1.59	4.28	0.15	5.84	824.27	122.40	44.09	3.36
Little Plumtree	6326	2-YR	379.28	378.48	0.80	0.59	0.22		164.42		14.46	2.07
Little Plumtree	6326	10-YR	380.76	379.58	1.18	0.79	0.31		350.99	0.23	18.89	2.66
Little Plumtree	6326	50-YR	382.09	381.08	1.01	0.86	0.23	76.51	571.08	12.68	81.22	2.24
Little Plumtree	6326	100-YR	382.56	381.53	1.03	0.89	0.22	144.66	668.03	20.15	92.24	2.37

HEC-RAS Plan: U River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	6326	7-30-2016	382.84	381.77	1.08	0.91	0.22	194.10	733.22	25.19	96.08	2.53
Little Plumtree	6045	2-YR	377.14	377.08	0.07	0.26	0.01		164.42		22.32	0.13
Little Plumtree	6045	10-YR	378.64	378.50	0.15	0.38	0.03	3.35	346.05	1.82	45.13	0.27
Little Plumtree	6045	50-YR	380.16	379.90	0.26	0.52	0.05	35.96	607.93	16.38	78.37	0.47
Little Plumtree	6045	100-YR	380.80	380.50	0.30	0.56	0.06	71.66	732.25	28.94	83.99	0.55
Little Plumtree	6045	7-30-2016	381.20	380.88	0.32	0.58	0.07	99.99	813.94	38.58	87.48	0.60
Little Plumtree	5847	2-YR	376.87	376.68	0.19	0.55	0.00		164.42		17.71	0.43
Little Plumtree	5847	10-YR	378.23	377.83	0.41	0.77	0.02	0.01	350.90	0.32	26.24	0.83
Little Plumtree	5847	50-YR	379.60	378.85	0.75	0.85	0.11	15.65	633.67	10.95	53.87	1.46
Little Plumtree	5847	100-YR	380.19	379.29	0.89	0.84	0.15	34.57	773.43	24.84	57.52	1.73
Little Plumtree	5847	7-30-2016	380.56	379.58	0.98	0.83	0.18	50.53	865.82	36.16	59.85	1.90
Little Plumtree	5668	2-YR	376.32	376.11	0.21	0.80	0.03		164.42		17.15	0.46
Little Plumtree	5668	10-YR	377.45	377.11	0.34	0.70	0.01	40.31	310.78	0.13	76.45	0.77
Little Plumtree	5668	50-YR	378.64	378.26	0.38	0.56	0.00	178.50	479.45	2.32	94.65	0.94
Little Plumtree	5668	100-YR	379.20	378.81	0.38	0.52	0.00	270.44	557.70	4.70	101.13	0.97
Little Plumtree	5668	7-30-2016	379.55	379.16	0.39	0.51	0.00	336.22	609.55	6.74	105.22	1.00
Little Plumtree	5520	2-YR	375.50	375.01	0.49	0.37	0.09	0.70	163.60	0.13	30.42	1.17
Little Plumtree	5520	10-YR	376.74	376.32	0.41	0.29	0.04	66.97	276.26	7.99	68.53	1.04
Little Plumtree	5520	50-YR	378.08	377.71	0.37	0.25	0.00	217.46	409.21	33.59	82.40	1.01
Little Plumtree	5520	100-YR	378.67	378.29	0.38	0.24	0.00	301.60	482.32	48.92	88.17	1.07
Little Plumtree	5520	7-30-2016	379.04	378.63	0.41	0.24	0.00	357.75	534.86	59.90	93.16	1.14
Little Plumtree	5442	2-YR	375.04	374.83	0.21			3.49	155.51	5.42	38.67	0.46
Little Plumtree	5442	10-YR	376.41	376.11	0.29			40.18	286.14	24.90	62.36	0.66
Little Plumtree	5442	50-YR	377.83	377.46	0.37			144.31	455.91	60.05	86.24	0.87
Little Plumtree	5442	100-YR	378.43	378.04	0.39			215.60	537.32	79.92	95.72	0.96
Little Plumtree	5442	7-30-2016	378.79	378.39	0.41			270.13	588.97	93.40	99.71	1.02

Appendix H-16

Little Plumtree Branch: Option V Hydraulic Modeling

ValleyMede_LittlePlumtree Plan: LPT_Grading

Little Plumtree Little Plumtree

Legend

- WS 7-30-2016
- WS 100-YR
- WS 50-YR
- WS 10-YR
- WS 2-YR
- Ground
- LOB
- ROB

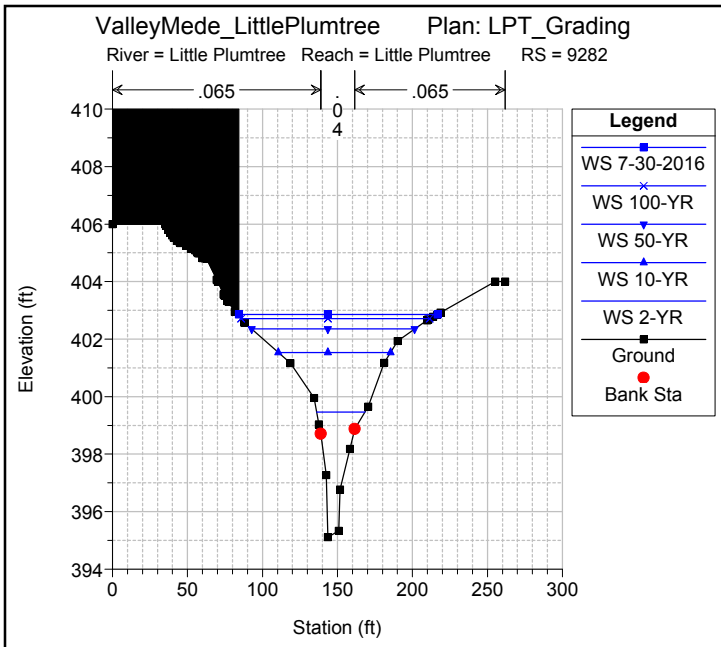
Elevation (ft)

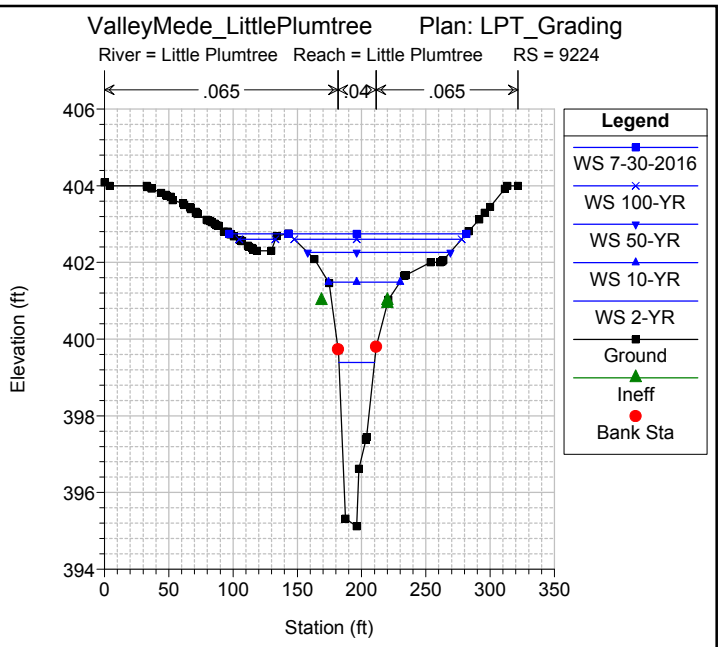
405
400
395
390
385
380
375
370

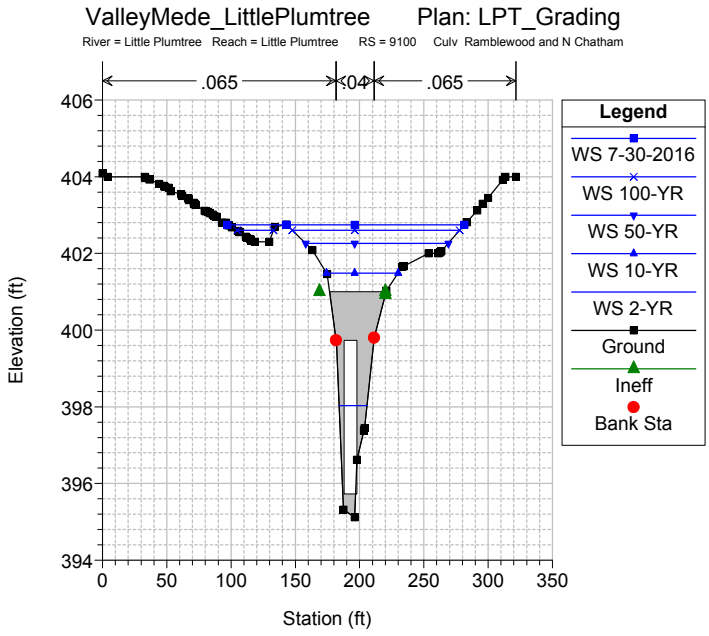
0
1000
2000
3000
4000

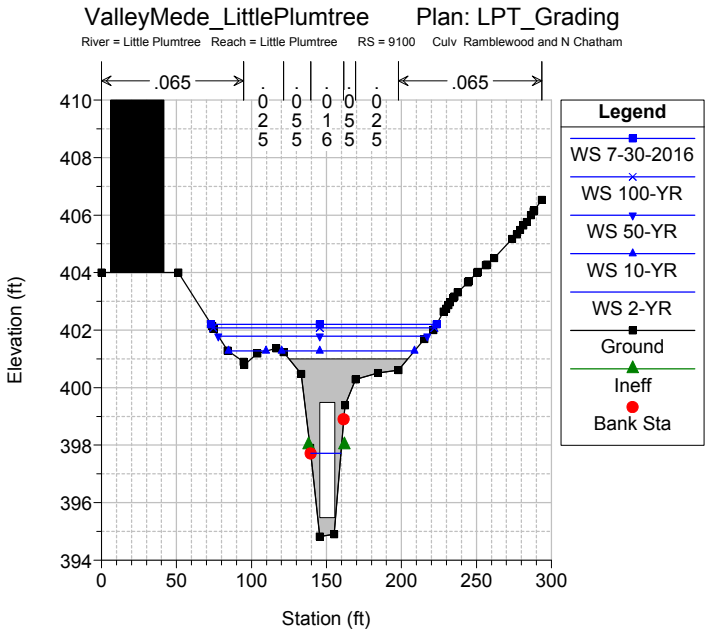
Main Channel Distance (ft)

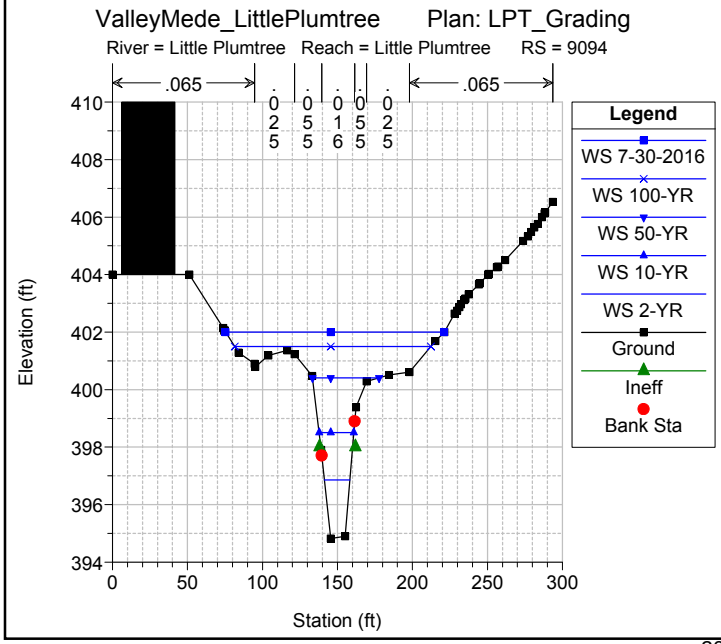
5520
5668
5847
6045
6326
6690
6890
7059
7261
7358
7400 School/Church Dr
7499
7560
7645
7735
7800 N. Chatham Rd
8010
8166
8329
8459
8628
8776
8938
9033
9094
9100 Ramblewood Rd
9224
9282
9415

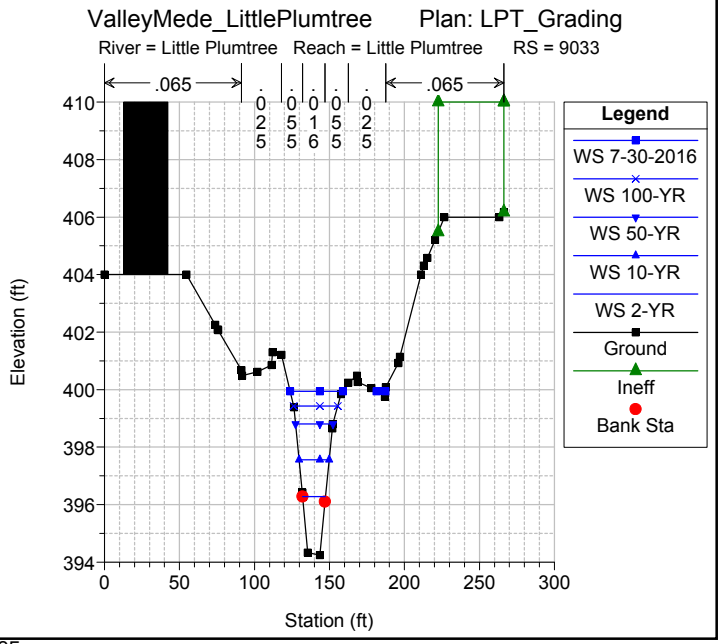

ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 9282
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

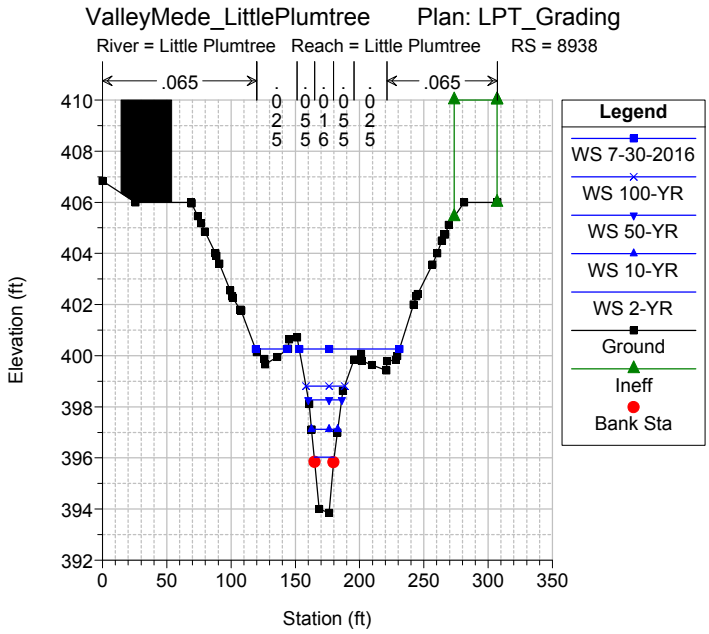

ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 9224
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 9100 Culv Ramblewood and N Chatham
.065
.04
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 9100 Culv Ramblewood and N Chatham
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 9094
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 9033
.065
.025
.055
.016
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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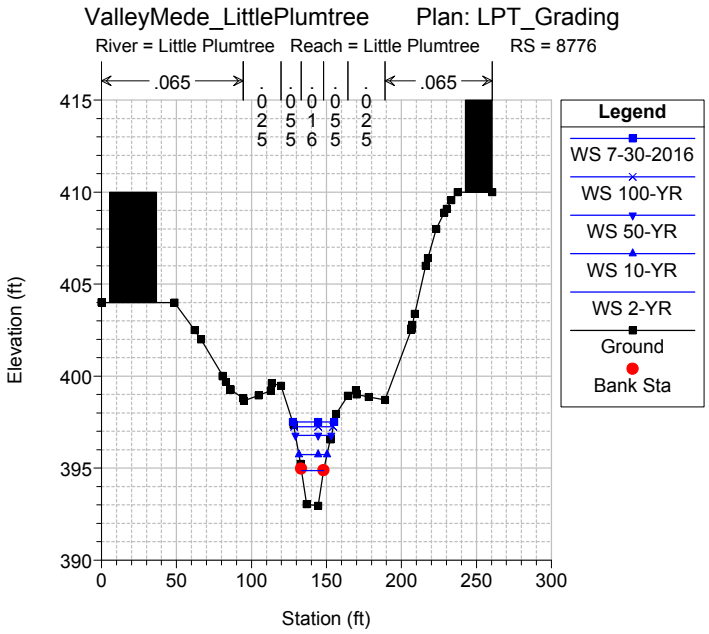
River = Little Plumtree Reach = Little Plumtree RS = 8938
.065
.025 .055 .016 .055 .025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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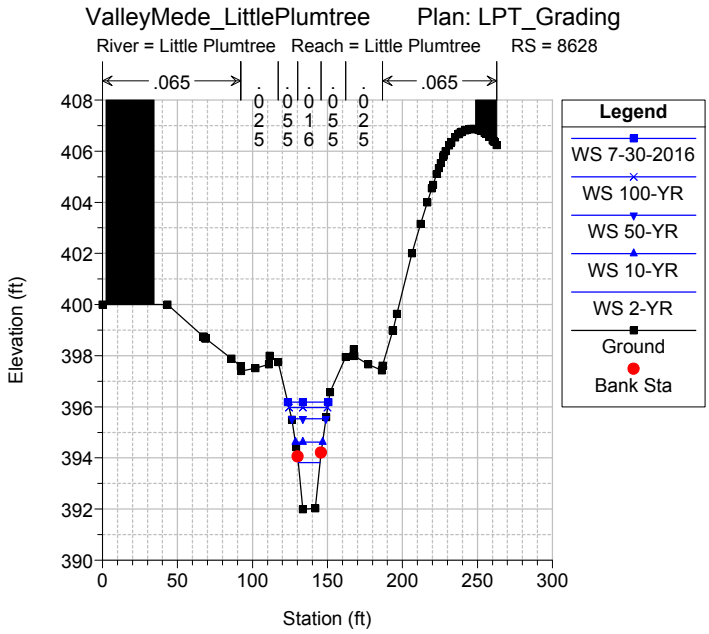
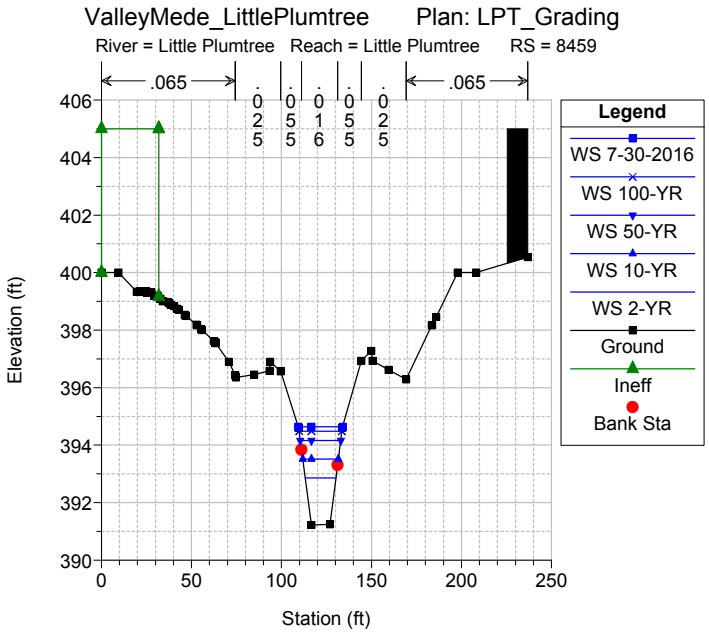
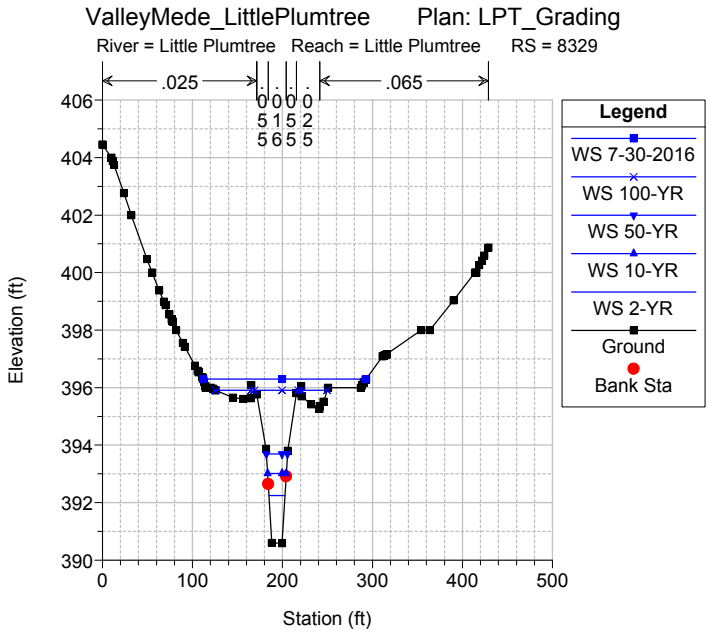
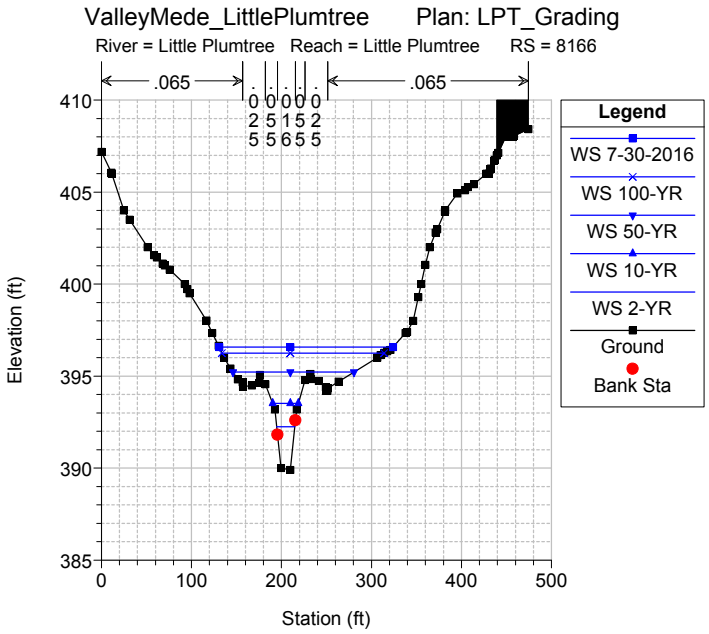
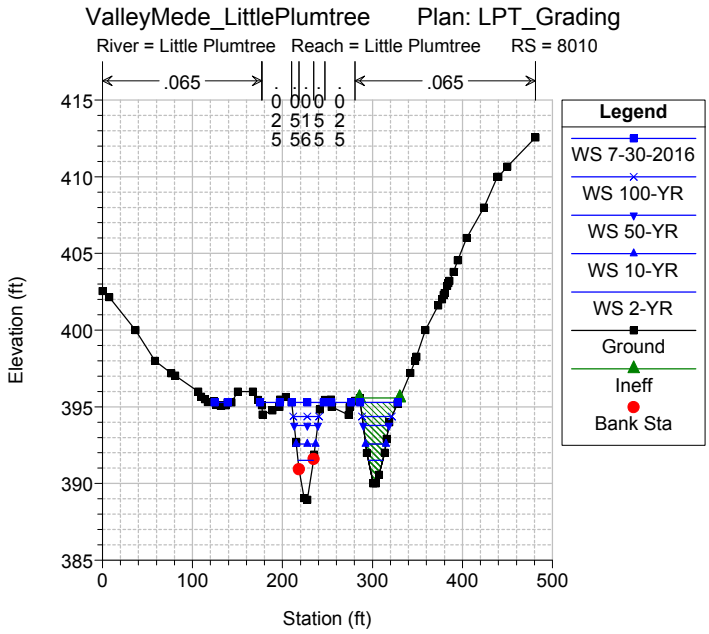
River = Little Plumtree Reach = Little Plumtree RS = 8776
.065
.025 .055 .016 .055 .025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 8628
.065
.025 .055 .016 .055 .025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 8459
.065
.025 .055 .016 .055 .025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 8329
.025
.065
.055 .065 .025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 8166
.065
.065
.025 .055 .065 .025
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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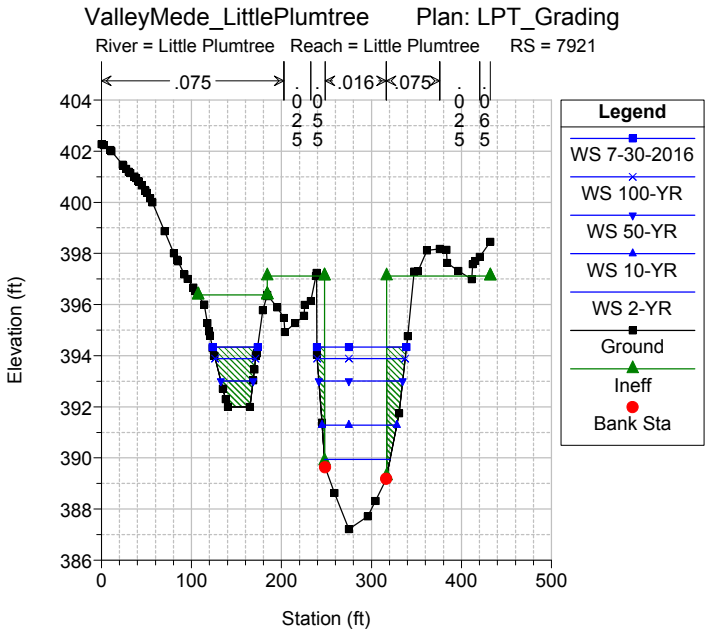
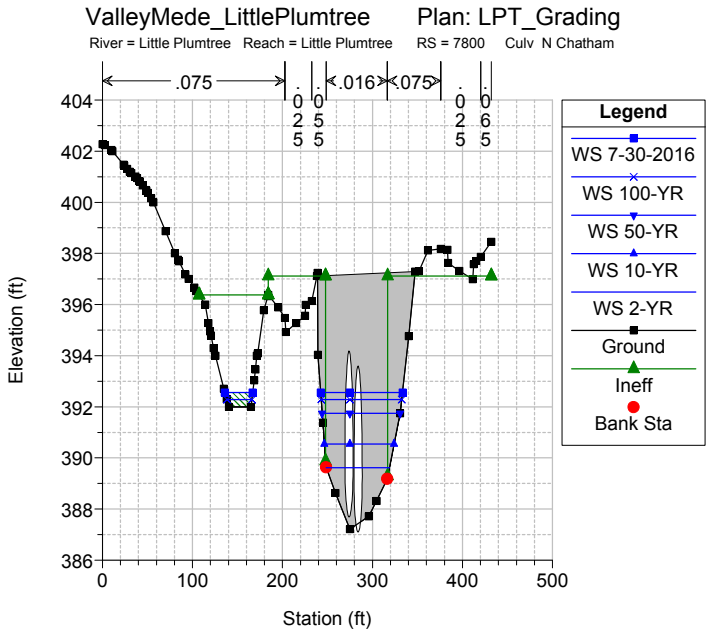
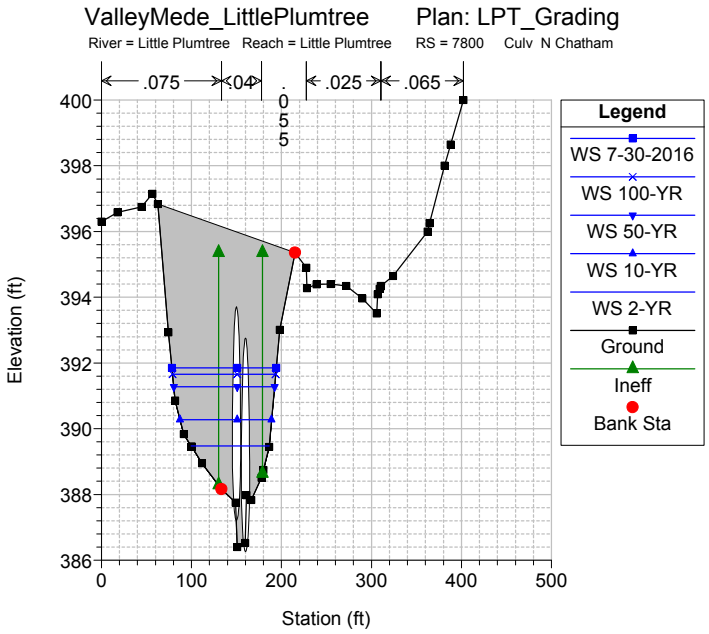
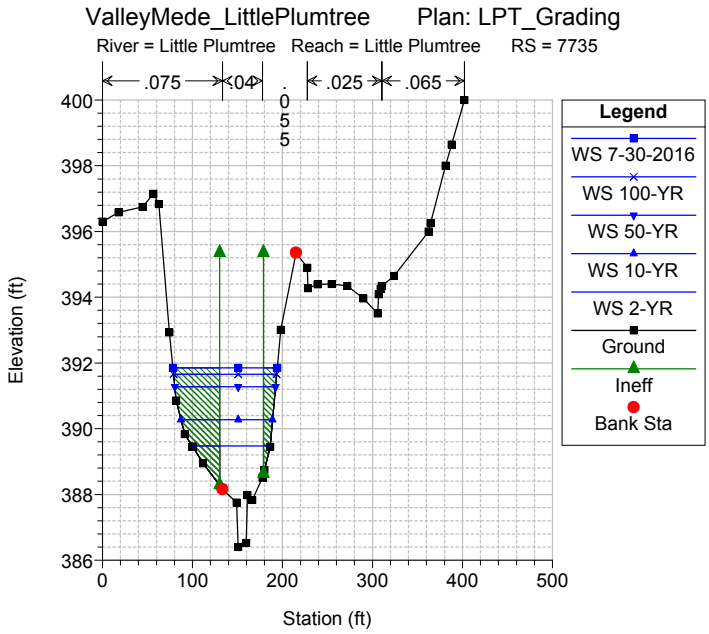
River = Little Plumtree Reach = Little Plumtree RS = 8010
.065
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7921
.075
.016
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7800 Culv N Chatham
.075
.016
.075
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7800 Culv N Chatham
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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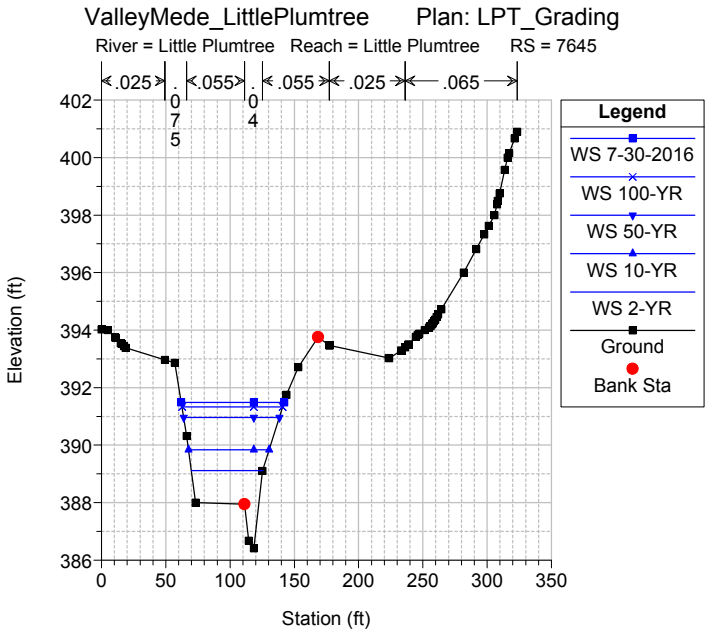
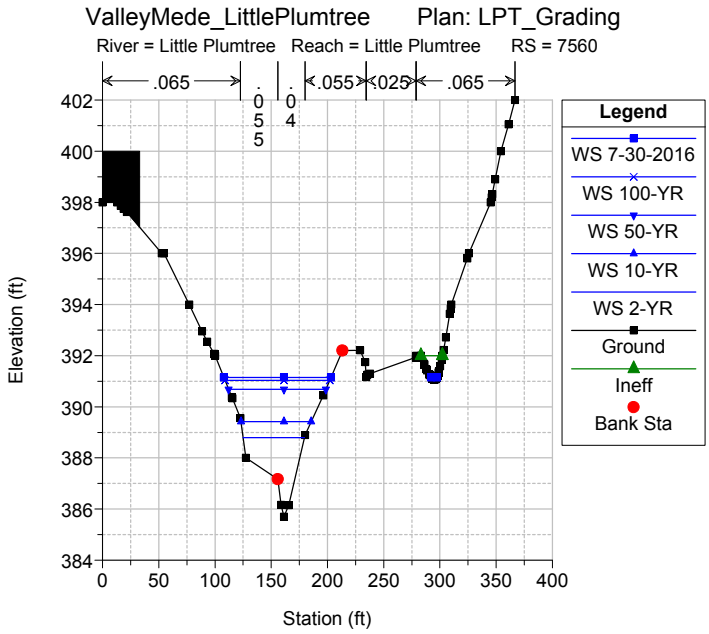
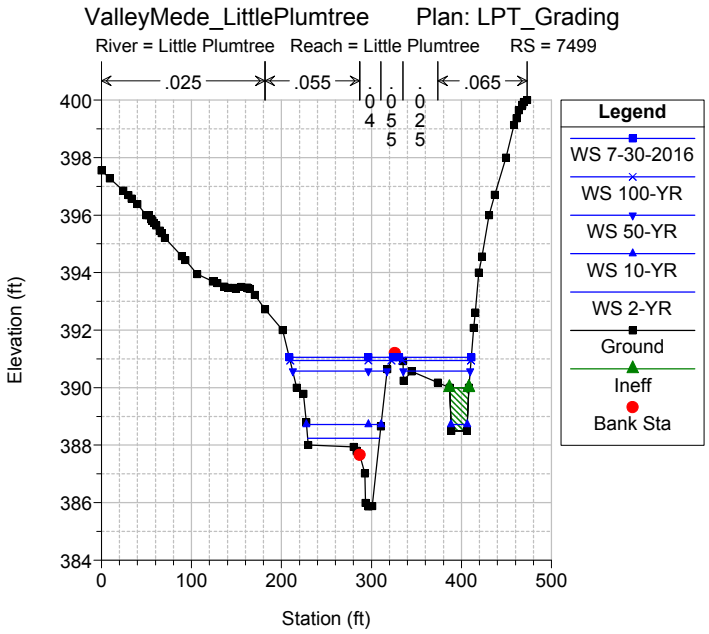
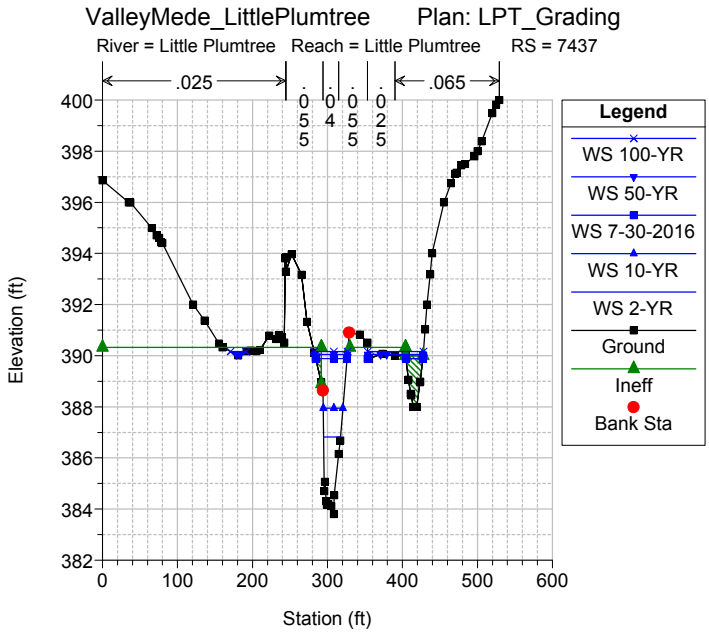
River = Little Plumtree Reach = Little Plumtree RS = 7735
.075
.04
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7645
.025
.055
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7560
.065
.055
.025
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7499
.025
.055
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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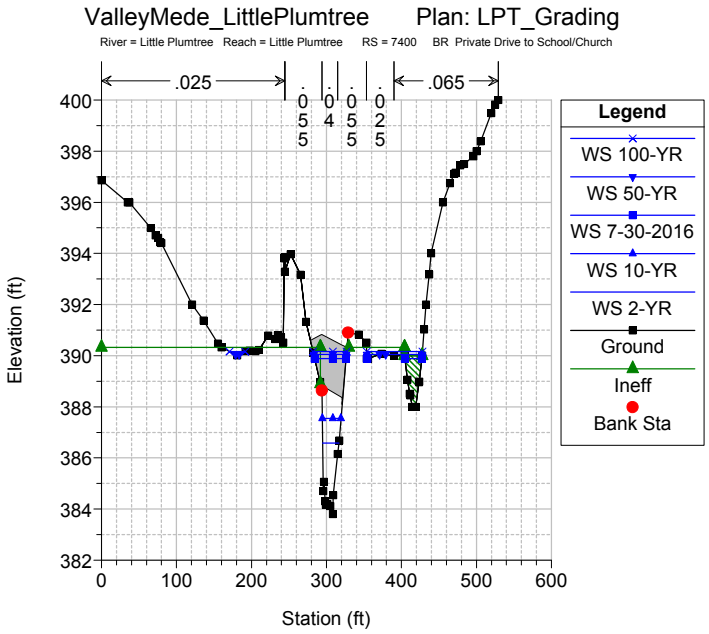
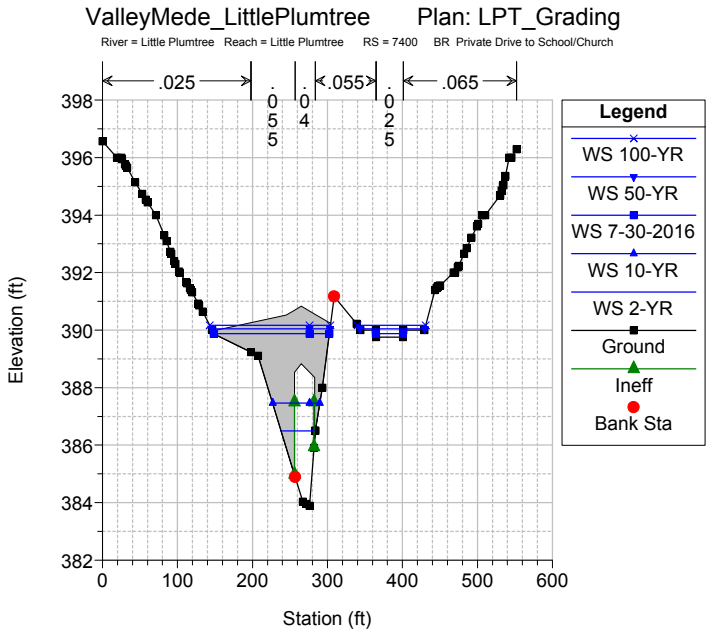
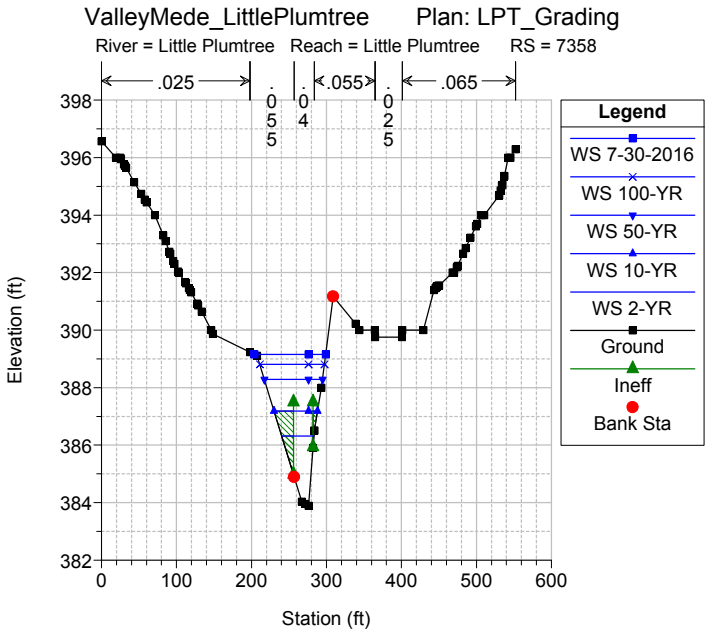
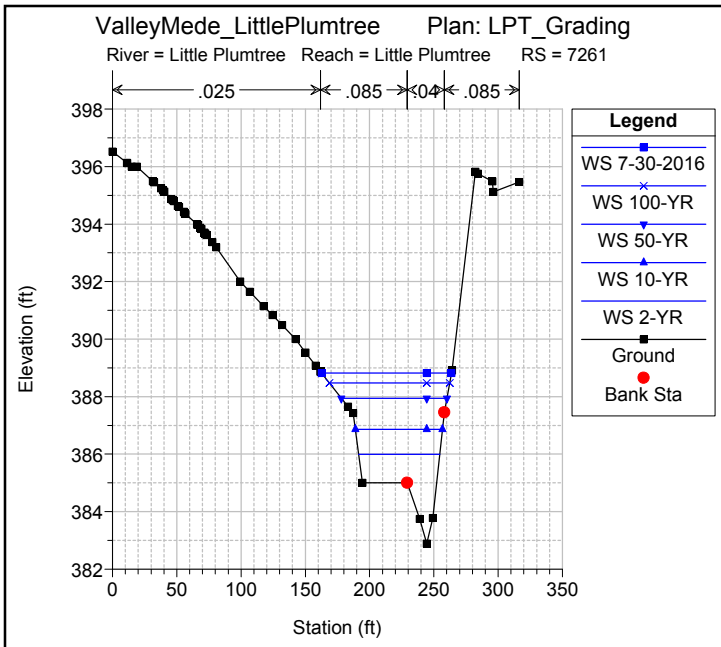
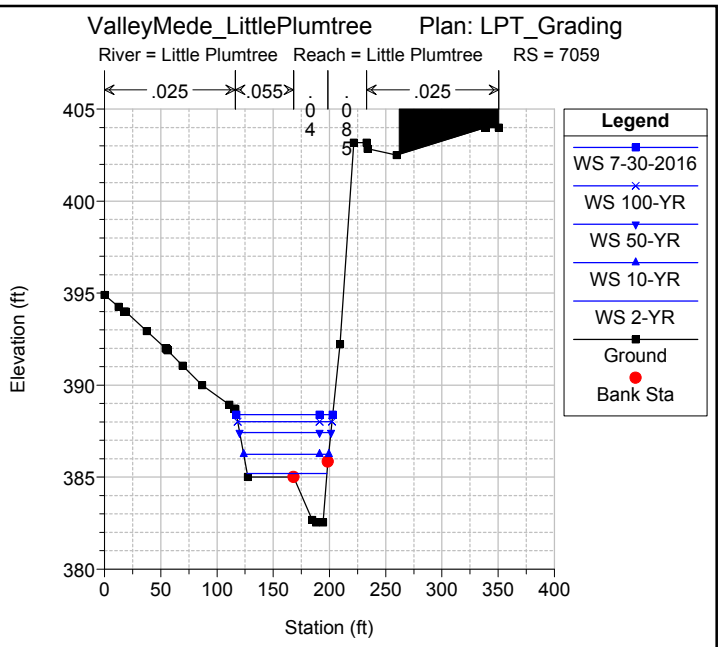
River = Little Plumtree Reach = Little Plumtree RS = 7437
.025
.065
Legend
WS 100-YR
WS 50-YR
WS 7-30-2016
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

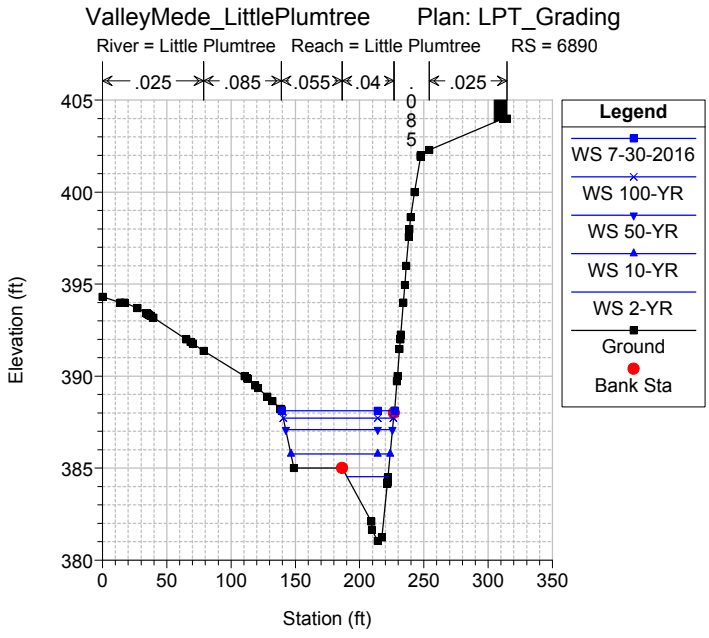

ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7400 BR Private Drive to School/Church
.025
.065
Legend
WS 100-YR
WS 50-YR
WS 7-30-2016
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

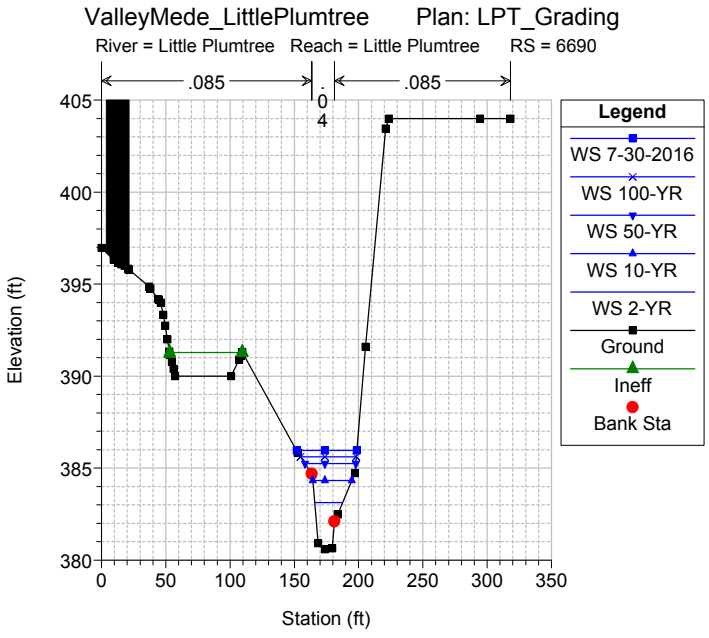

ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7400 BR Private Drive to School/Church
.025
.055
.065
Legend
WS 100-YR
WS 50-YR
WS 7-30-2016
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

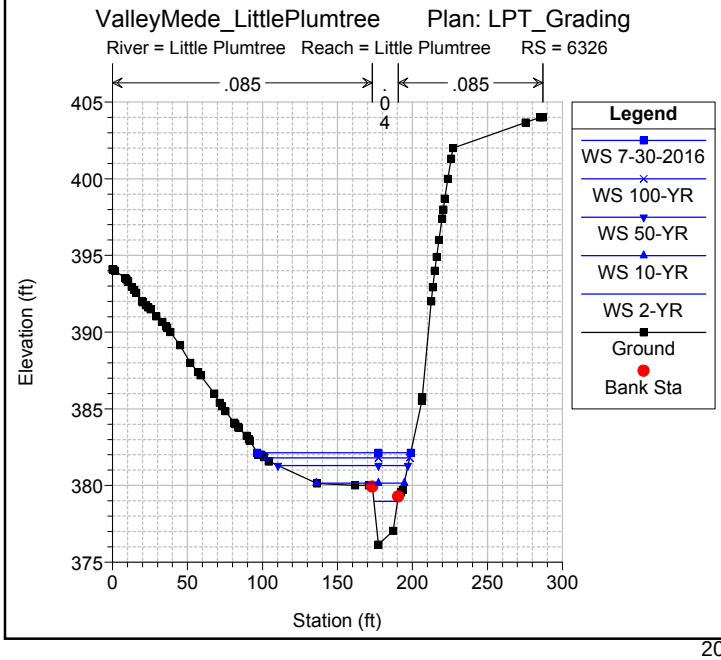

ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7358
.025
.055
.065
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7261
.025
.085
.04
.085
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 7059
.025
.055
.04
.085
.025
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 6890
.025
.085
.055
.04
.085
.025
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 6690
.085
.085
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Ineff
Bank Sta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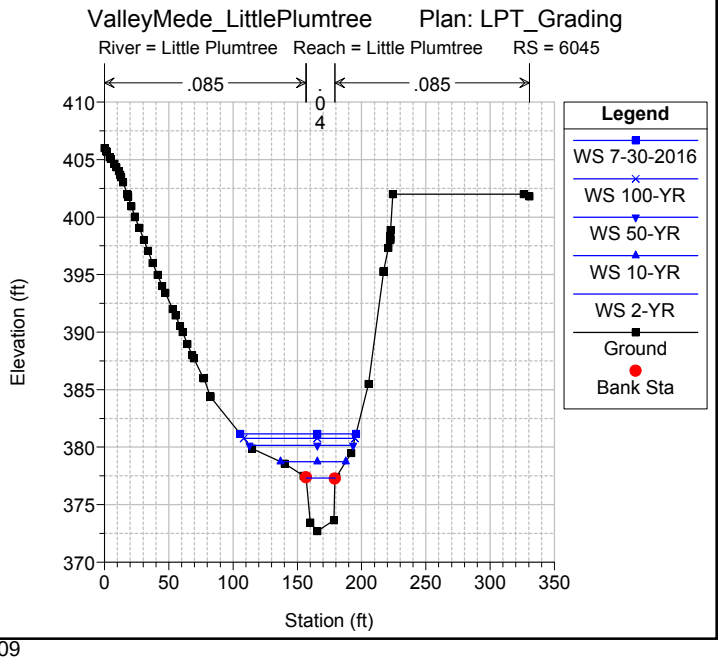
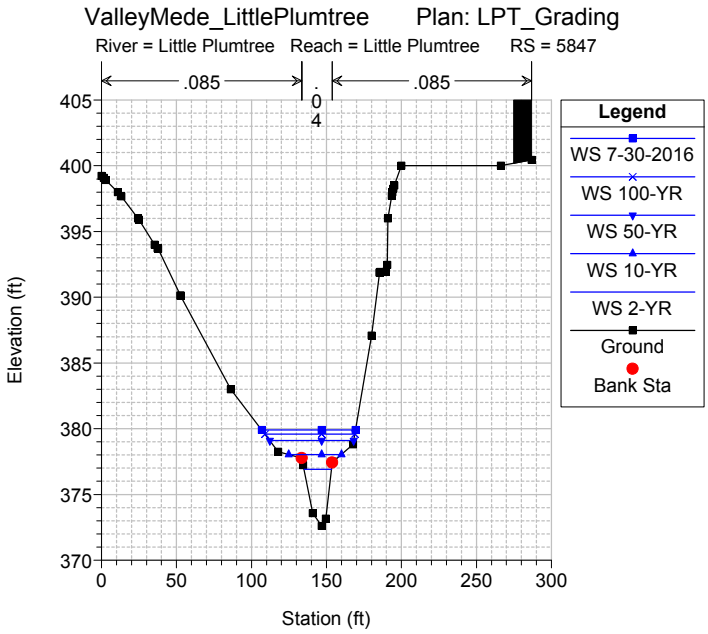
River = Little Plumtree Reach = Little Plumtree RS = 6326
.085
.085
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta


ValleyMede_LittlePlumtree Plan: LPT_Grading
River = Little Plumtree Reach = Little Plumtree RS = 6045
.085
.085
Elevation (ft)
Station (ft)
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta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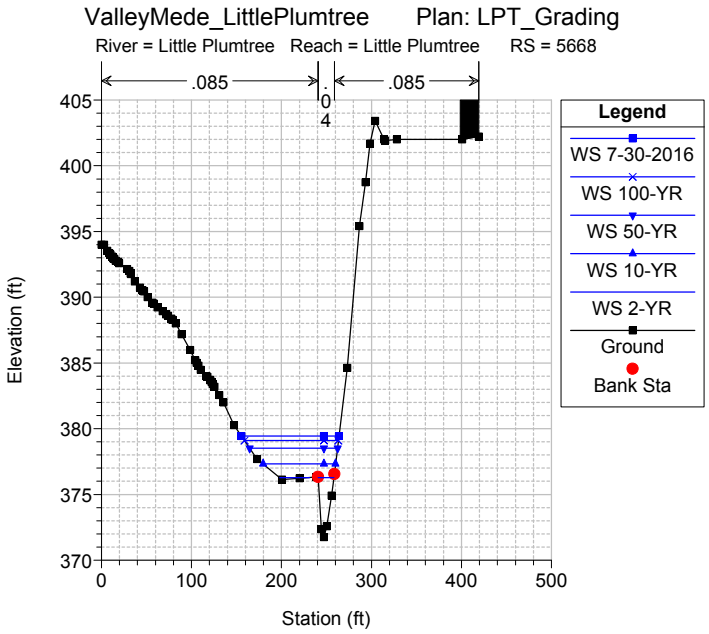
River = Little Plumtree Reach = Little Plumtree RS = 5847
.085
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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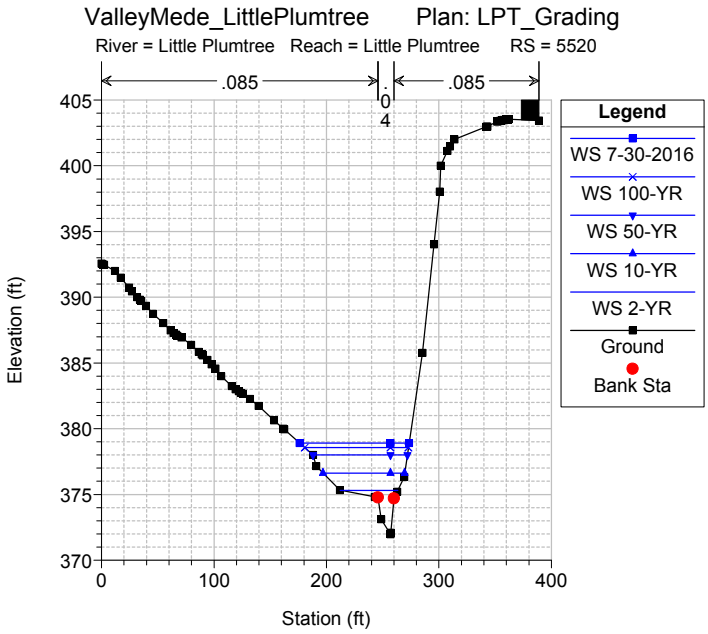
River = Little Plumtree Reach = Little Plumtree RS = 5668
.085
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 5520
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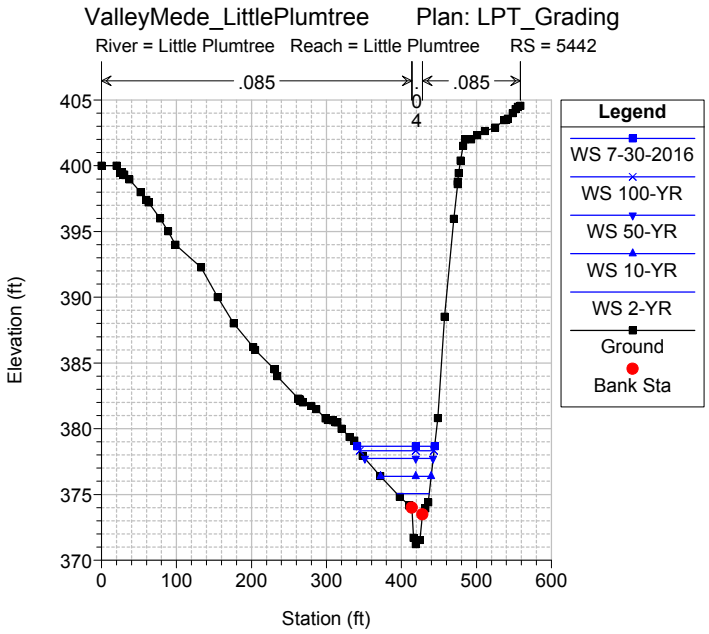
.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = Little Plumtree Reach = Little Plumtree RS = 5442
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.085
0.4
Legend
WS 7-30-2016
WS 100-YR
WS 50-YR
WS 10-YR
WS 2-YR
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
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PROJECT DATA
Project Title: ValleyMede_LittlePlumtree
Project File : ValleyMedeLittlePlumtree.prj
Run Date and Time: 1/10/2018 4:44:06 PM

Project in English units

PLAN DATA

Plan Title: LPT_Grading
Plan File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.p08

Geometry Title: Little Plumtree_V_Grading
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g07

Flow Title : Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Plan Description:
Channel grading downstream of the N. Chatham Rd. culvert and the culvert replacement at the School/Church with a bridge.

Plan Summary Information:

Number of:	Cross Sections	= 29	Multiple Openings	=	0
	Culverts	= 2	Inline Structures	=	0
	Bridges	= 1	Lateral Structures	=	2

Computational Information

Water surface calculation tolerance	= 0.01
Critical depth calculation tolerance	= 0.01
Maximum number of iterations	= 40
Maximum difference tolerance	= 0.3
Flow tolerance factor	= 0.001

Computation Options

Critical depth computed at all cross sections	
Conveyance Calculation Method:	At breaks in n values only
Friction Slope Method:	Program Selects Appropriate method
Computational Flow Regime:	Mixed Flow

FLOW DATA

Flow Title: Little Plumtree
Flow File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.f01

Flow Data (cfs)

River	Reach	RS	2-YR	10-YR	50-YR	100-YR	7-30-2016
Little Plumtree	Little Plumtree	9415	189	397	698	862	945
Little Plumtree	Little Plumtree	7645	190	403	741	927	1058

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Little Plumtree	Little Plumtree	2-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	10-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	50-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	100-YR	Critical	Normal S = 0.00278
Little Plumtree	Little Plumtree	7-30-2016	Critical	Normal S = 0.00278

GEOMETRY DATA

Geometry Title: Little Plumtree_V_Grading
Geometry File : i:\5635 - SHA OHD\49 - Valley Meade Flood Study\H&H\HEC-RAS\LittlePlumtree_201709\ValleyMedeLittlePlumtree.g07

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9415

INPUT
Description:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.12	26.24	402.8	37.49	401.11	45.42	400.62	48.26	399.66
57.81	396.45	62.4	396.28	68.31	398.25	73.47	399.97	90.46	400.81
104.93	402.16	119.34	403.65						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.075	45.42	.04	73.47	.075

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.42	73.47	133.08	132.78	133.29	.1	.3

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	400.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.		0.040	
W.S. Elev (ft)	399.85	Reach Len. (ft)	133.08	132.78	133.29
Crit W.S. (ft)	398.73	Flow Area (sq ft)		52.39	
E.G. Slope (ft/ft)	0.003815	Area (sq ft)		52.39	
Q Total (cfs)	189.00	Flow (cfs)		189.00	
Top Width (ft)	25.43	Top Width (ft)		25.43	
Vel Total (ft/s)	3.61	Avg. Vel. (ft/s)		3.61	
Max Chl Dpth (ft)	3.57	Hydr. Depth (ft)		2.06	
Conv. Total (cfs)	3059.8	Conv. (cfs)		3059.8	
Length Wtd. (ft)	132.78	Wetted Per. (ft)		26.57	
Min Ch El (ft)	396.28	Shear (lb/sq ft)		0.47	
Alpha	1.00	Stream Power (lb/ft s)		1.69	
Frctn Loss (ft)	0.42	Cum Volume (acre-ft)	0.46	3.78	0.08
C & E Loss (ft)	0.01	Cum SA (acres)	0.93	2.05	0.14

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	401.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.075	0.040	0.075
W.S. Elev (ft)	401.70	Reach Len. (ft)	133.08	132.78	133.29
Crit W.S. (ft)	399.74	Flow Area (sq ft)	7.77	103.27	26.47
E.G. Slope (ft/ft)	0.001740	Area (sq ft)	7.77	103.27	26.47
Q Total (cfs)	397.00	Flow (cfs)	4.83	370.35	21.82

Top Width (ft)	66.42	Top Width (ft)	11.85	28.05	26.52
Vel Total (ft/s)	2.89	Avg. Vel. (ft/s)	0.62	3.59	0.82
Max Chl Dpth (ft)	5.42	Hydr. Depth (ft)	0.66	3.68	1.00
Conv. Total (cfs)	9516.9	Conv. (cfs)	115.7	8878.1	523.1
Length Wtd. (ft)	132.82	Wetted Per. (ft)	11.91	29.33	26.58
Min Ch El (ft)	396.28	Shear (lb/sq ft)	0.07	0.38	0.11
Alpha	1.44	Stream Power (lb/ft s)	0.04	1.37	0.09
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	1.70	6.00	0.47
C & E Loss (ft)	0.01	Cum SA (acres)	1.93	2.20	0.54

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	402.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.075	0.040	0.075
W.S. Elev (ft)	402.59	Reach Len. (ft)	133.08	132.78	133.29
Crit W.S. (ft)	400.80	Flow Area (sq ft)	21.04	128.37	54.39
E.G. Slope (ft/ft)	0.002271	Area (sq ft)	21.04	128.37	54.39
Q Total (cfs)	698.00	Flow (cfs)	22.09	607.99	67.92
Top Width (ft)	81.51	Top Width (ft)	17.81	28.05	35.65
Vel Total (ft/s)	3.42	Avg. Vel. (ft/s)	1.05	4.74	1.25
Max Chl Dpth (ft)	6.31	Hydr. Depth (ft)	1.18	4.58	1.53
Conv. Total (cfs)	14646.9	Conv. (cfs)	463.5	12758.1	1425.3
Length Wtd. (ft)	132.85	Wetted Per. (ft)	17.93	29.33	35.76
Min Ch El (ft)	396.28	Shear (lb/sq ft)	0.17	0.62	0.22
Alpha	1.68	Stream Power (lb/ft s)	0.17	2.94	0.27
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	4.53	8.61	1.41
C & E Loss (ft)	0.01	Cum SA (acres)	3.02	2.26	1.40

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	403.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.075	0.040	0.075
W.S. Elev (ft)	402.97	Reach Len. (ft)	133.08	132.78	133.29
Crit W.S. (ft)	401.26	Flow Area (sq ft)	28.46	139.00	68.60
E.G. Slope (ft/ft)	0.002515	Area (sq ft)	28.46	139.00	68.60
Q Total (cfs)	862.00	Flow (cfs)	32.82	730.60	98.58
Top Width (ft)	89.98	Top Width (ft)	22.61	28.05	39.32
Vel Total (ft/s)	3.65	Avg. Vel. (ft/s)	1.15	5.26	1.44
Max Chl Dpth (ft)	6.69	Hydr. Depth (ft)	1.26	4.96	1.74
Conv. Total (cfs)	17187.1	Conv. (cfs)	654.4	14567.2	1965.5
Length Wtd. (ft)	132.86	Wetted Per. (ft)	22.76	29.33	39.44
Min Ch El (ft)	396.28	Shear (lb/sq ft)	0.20	0.74	0.27
Alpha	1.78	Stream Power (lb/ft s)	0.23	3.91	0.39
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	6.25	9.95	2.28
C & E Loss (ft)	0.02	Cum SA (acres)	3.80	2.29	1.89

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	403.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.075	0.040	0.075
W.S. Elev (ft)	403.14	Reach Len. (ft)	133.08	132.78	133.29
Crit W.S. (ft)	401.45	Flow Area (sq ft)	32.42	143.59	75.16
E.G. Slope (ft/ft)	0.002652	Area (sq ft)	32.42	143.59	75.16
Q Total (cfs)	945.00	Flow (cfs)	38.31	791.89	114.80
Top Width (ft)	94.82	Top Width (ft)	25.86	28.05	40.90
Vel Total (ft/s)	3.76	Avg. Vel. (ft/s)	1.18	5.51	1.53
Max Chl Dpth (ft)	6.86	Hydr. Depth (ft)	1.25	5.12	1.84
Conv. Total (cfs)	18350.8	Conv. (cfs)	744.0	15377.5	2229.2
Length Wtd. (ft)	132.87	Wetted Per. (ft)	26.01	29.33	41.04
Min Ch El (ft)	396.28	Shear (lb/sq ft)	0.21	0.81	0.30
Alpha	1.82	Stream Power (lb/ft s)	0.24	4.47	0.46
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	7.45	10.72	2.97
C & E Loss (ft)	0.02	Cum SA (acres)	4.24	2.30	2.30

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 9282

INPUT

Description:

Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	35.14	406	35.66	405.94	37.16	405.8	38.48	405.69
39.65	405.61	40.74	405.54	41.04	405.53	43.06	405.42	44.88	405.36
45.26	405.34	49.17	405.25	52.19	405.14	55.17	405.08	56.39	405.02
57.09	404.98	57.75	404.98	60.06	404.81	61.67	404.8	62.71	404.79
69.47	404.07	69.52	404.06	69.61	404.06	70.1	404	73.98	403.56
74.29	403.54	74.75	403.51	76.65	403.33	77.5	403.29	81.52	402.95
87.95	402.58	88.09	402.57	88.21	402.57	118.53	401.16	134.44	399.95
137.69	399.03	137.7	399.03	138.85	398.71	142.58	397.27	143.65	395.11
150.75	395.34	151.63	396.77	158.22	398.18	161.45	398.87	170.55	399.65
181.15	401.18	190.16	401.93	209.71	402.66	209.76	402.66	210.1	402.67
210.35	402.68	210.6	402.68	213.79	402.78	216.31	402.85	218.75	402.92
255.28	404	261.74	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	138.85	.04	161.45	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
138.85	161.45	61.4	57.86	54.02	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	84.3	410

CROSS SECTION OUTPUT Profile #2-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	399.63	Element			
Vel Head (ft)	0.16	Wt. n-Val.	0.065	0.040	0.065
W.S. Elev (ft)	399.47	Reach Len. (ft)	61.40	57.86	54.02
Crit W.S. (ft)	397.90	Flow Area (sq ft)	1.03	58.32	2.08
E.G. Slope (ft/ft)	0.002448	Area (sq ft)	1.03	58.32	2.08
Q Total (cfs)	189.00	Flow (cfs)	0.60	187.35	1.05
Top Width (ft)	32.28	Top Width (ft)	2.71	22.60	6.97
Vel Total (ft/s)	3.08	Avg. Vel. (ft/s)	0.58	3.21	0.50
Max Chl Dpth (ft)	4.36	Hydr. Depth (ft)	0.38	2.58	0.30
Conv. Total (cfs)	3820.2	Conv. (cfs)	12.1	3786.9	21.2
Length Wtd. (ft)	57.85	Wetted Per. (ft)	2.81	25.23	7.00
Min Ch El (ft)	395.11	Shear (lb/sq ft)	0.06	0.35	0.05
Alpha	1.08	Stream Power (lb/ft s)	0.03	1.13	0.02
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	0.46	3.61	0.08
C & E Loss (ft)	0.02	Cum SA (acres)	0.92	1.98	0.13

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	401.68	Element			
Vel Head (ft)	0.15	Wt. n-Val.	0.065	0.040	0.065
W.S. Elev (ft)	401.53	Reach Len. (ft)	61.40	57.86	54.02
Crit W.S. (ft)	399.03	Flow Area (sq ft)	26.81	105.02	33.31
E.G. Slope (ft/ft)	0.001166	Area (sq ft)	26.81	105.02	33.31
Q Total (cfs)	397.00	Flow (cfs)	20.05	344.70	32.25
Top Width (ft)	74.91	Top Width (ft)	28.36	22.60	23.95
Vel Total (ft/s)	2.40	Avg. Vel. (ft/s)	0.75	3.28	0.97
Max Chl Dpth (ft)	6.42	Hydr. Depth (ft)	0.95	4.65	1.39
Conv. Total (cfs)	11625.9	Conv. (cfs)	587.2	10094.2	944.5
Length Wtd. (ft)	57.78	Wetted Per. (ft)	28.59	25.23	24.11
Min Ch El (ft)	395.11	Shear (lb/sq ft)	0.07	0.30	0.10
Alpha	1.64	Stream Power (lb/ft s)	0.05	0.99	0.10
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	1.65	5.68	0.38
C & E Loss (ft)	0.01	Cum SA (acres)	1.87	2.12	0.47

CROSS SECTION OUTPUT Profile #50-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	402.62	Element			
Vel Head (ft)	0.26	Wt. n-Val.	0.065	0.040	0.065
W.S. Elev (ft)	402.35	Reach Len. (ft)	61.40	57.86	54.02
Crit W.S. (ft)	400.09	Flow Area (sq ft)	57.31	123.56	58.33
E.G. Slope (ft/ft)	0.001800	Area (sq ft)	57.31	123.56	58.33
Q Total (cfs)	698.00	Flow (cfs)	64.12	561.46	72.42
Top Width (ft)	108.67	Top Width (ft)	46.00	22.60	40.07
Vel Total (ft/s)	2.92	Avg. Vel. (ft/s)	1.12	4.54	1.24
Max Chl Dpth (ft)	7.24	Hydr. Depth (ft)	1.25	5.47	1.46

Conv. Total (cfs)	16454.1	Conv. (cfs)	1511.5	13235.4	1707.3
Length Wtd. (ft)	57.78	Wetted Per. (ft)	46.25	25.23	40.25
Min Ch El (ft)	395.11	Shear (lb/sq ft)	0.14	0.55	0.16
Alpha	1.98	Stream Power (lb/ft s)	0.16	2.50	0.20
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	4.41	8.22	1.24
C & E Loss (ft)	0.00	Cum SA (acres)	2.92	2.18	1.28

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	403.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.065	0.040	0.065
W.S. Elev (ft)	402.71	Reach Len. (ft)	61.40	57.86	54.02
Crit W.S. (ft)	400.61	Flow Area (sq ft)	74.91	131.56	74.20
E.G. Slope (ft/ft)	0.002049	Area (sq ft)	74.91	131.56	74.20
Q Total (cfs)	862.00	Flow (cfs)	97.18	665.23	99.59
Top Width (ft)	125.78	Top Width (ft)	53.13	22.60	50.05
Vel Total (ft/s)	3.07	Avg. Vel. (ft/s)	1.30	5.06	1.34
Max Chl Dpth (ft)	7.60	Hydr. Depth (ft)	1.41	5.82	1.48
Conv. Total (cfs)	19040.8	Conv. (cfs)	2146.6	14694.3	2200.0
Length Wtd. (ft)	57.76	Wetted Per. (ft)	53.38	25.23	50.24
Min Ch El (ft)	395.11	Shear (lb/sq ft)	0.18	0.67	0.19
Alpha	2.13	Stream Power (lb/ft s)	0.23	3.37	0.25
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	6.09	9.54	2.06
C & E Loss (ft)	0.00	Cum SA (acres)	3.68	2.21	1.75

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	403.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.065	0.040	0.065
W.S. Elev (ft)	402.86	Reach Len. (ft)	61.40	57.86	54.02
Crit W.S. (ft)	400.84	Flow Area (sq ft)	83.24	135.03	82.29
E.G. Slope (ft/ft)	0.002166	Area (sq ft)	83.24	135.03	82.29
Q Total (cfs)	945.00	Flow (cfs)	116.91	714.22	113.87
Top Width (ft)	132.43	Top Width (ft)	54.55	22.60	55.28
Vel Total (ft/s)	3.14	Avg. Vel. (ft/s)	1.40	5.29	1.38
Max Chl Dpth (ft)	7.75	Hydr. Depth (ft)	1.53	5.97	1.49
Conv. Total (cfs)	20305.7	Conv. (cfs)	2512.1	15346.7	2446.9
Length Wtd. (ft)	57.76	Wetted Per. (ft)	54.88	25.23	55.47
Min Ch El (ft)	395.11	Shear (lb/sq ft)	0.21	0.72	0.20
Alpha	2.19	Stream Power (lb/ft s)	0.29	3.83	0.28
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	7.27	10.29	2.73
C & E Loss (ft)	0.00	Cum SA (acres)	4.12	2.23	2.16

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9224

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.82	402.69
143.12	402.75	163.4	402.09	174.73	401.46	181.84	399.73	181.86	399.72
187.51	395.32	196.08	395.12	197.79	396.62	203.28	397.38	203.29	397.39
203.77	397.45	211.36	399.8	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	211.36	.065

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
181.84 211.36 128.56 130.35 131.84 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	168.9	401	F
220	321.72	401	F

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	399.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.040	
W.S. Elev (ft)	399.39	Reach Len. (ft)	128.56	130.35	131.84
Crit W.S. (ft)	397.47	Flow Area (sq ft)		72.56	
E.G. Slope (ft/ft)	0.001519	Area (sq ft)		72.56	
Q Total (cfs)	189.00	Flow (cfs)		189.00	
Top Width (ft)	27.75	Top Width (ft)		27.75	
Vel Total (ft/s)	2.60	Avg. Vel. (ft/s)		2.60	
Max Chl Dpth (ft)	4.27	Hydr. Depth (ft)		2.61	
Conv. Total (cfs)	4849.6	Conv. (cfs)		4849.6	
Length Wtd. (ft)	130.35	Wetted Per. (ft)		30.07	
Min Ch El (ft)	395.12	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.60	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.46	3.53	0.08
C & E Loss (ft)		Cum SA (acres)	0.92	1.94	0.12

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	401.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.065	0.040	0.065
W.S. Elev (ft)	401.49	Reach Len. (ft)	128.56	130.35	131.84
Crit W.S. (ft)	398.46	Flow Area (sq ft)	6.37	134.18	12.27
E.G. Slope (ft/ft)	0.000892	Area (sq ft)	6.37	134.18	12.27
Q Total (cfs)	397.00	Flow (cfs)	3.78	386.92	6.30
Top Width (ft)	55.87	Top Width (ft)	7.63	29.52	18.72
Vel Total (ft/s)	2.60	Avg. Vel. (ft/s)	0.59	2.88	0.51
Max Chl Dpth (ft)	6.37	Hydr. Depth (ft)	0.83	4.55	0.66
Conv. Total (cfs)	13293.8	Conv. (cfs)	126.6	12956.2	211.0
Length Wtd. (ft)	130.35	Wetted Per. (ft)	7.84	32.02	18.81
Min Ch El (ft)	395.12	Shear (lb/sq ft)	0.05	0.23	0.04
Alpha	1.20	Stream Power (lb/ft s)	0.03	0.67	0.02
Frctn Loss (ft)		Cum Volume (acre-ft)	1.63	5.53	0.35
C & E Loss (ft)		Cum SA (acres)	1.84	2.09	0.44

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	402.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.065	0.040	0.065
W.S. Elev (ft)	402.26	Reach Len. (ft)	128.56	130.35	131.84
Crit W.S. (ft)	399.49	Flow Area (sq ft)	17.88	157.05	41.05
E.G. Slope (ft/ft)	0.001516	Area (sq ft)	17.88	157.05	41.05
Q Total (cfs)	698.00	Flow (cfs)	13.07	655.83	29.11
Top Width (ft)	110.94	Top Width (ft)	23.79	29.52	57.63
Vel Total (ft/s)	3.23	Avg. Vel. (ft/s)	0.73	4.18	0.71
Max Chl Dpth (ft)	7.14	Hydr. Depth (ft)	0.75	5.32	0.71
Conv. Total (cfs)	17926.6	Conv. (cfs)	335.6	16843.5	747.5
Length Wtd. (ft)	130.35	Wetted Per. (ft)	24.02	32.02	57.73
Min Ch El (ft)	395.12	Shear (lb/sq ft)	0.07	0.46	0.07
Alpha	1.57	Stream Power (lb/ft s)	0.05	1.94	0.05
Frctn Loss (ft)		Cum Volume (acre-ft)	4.35	8.04	1.18
C & E Loss (ft)		Cum SA (acres)	2.88	2.15	1.22

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	402.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.065	0.040	0.065
W.S. Elev (ft)	402.60	Reach Len. (ft)	128.56	130.35	131.84
Crit W.S. (ft)	399.93	Flow Area (sq ft)	33.74	167.02	61.98
E.G. Slope (ft/ft)	0.001749	Area (sq ft)	33.74	167.02	61.98
Q Total (cfs)	862.00	Flow (cfs)	24.96	780.52	56.52
Top Width (ft)	158.25	Top Width (ft)	62.31	29.52	66.42
Vel Total (ft/s)	3.28	Avg. Vel. (ft/s)	0.74	4.67	0.91

Max Chl Dpth (ft)	7.48	Hydr. Depth (ft)	0.54	5.66	0.93
Conv. Total (cfs)	20609.8	Conv. (cfs)	596.8	18661.6	1351.5
Length Wtd. (ft)	130.35	Wetted Per. (ft)	62.56	32.02	66.53
Min Ch El (ft)	395.12	Shear (lb/sq ft)	0.06	0.57	0.10
Alpha	1.84	Stream Power (lb/ft s)	0.04	2.66	0.09
Frctn Loss (ft)		Cum Volume (acre-ft)	6.01	9.34	1.98
C & E Loss (ft)		Cum SA (acres)	3.60	2.18	1.68

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	403.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.	0.065	0.040	0.065
W.S. Elev (ft)	402.75	Reach Len. (ft)	128.56	130.35	131.84
Crit W.S. (ft)	400.14	Flow Area (sq ft)	44.08	171.33	71.96
E.G. Slope (ft/ft)	0.001859	Area (sq ft)	44.08	171.33	71.96
Q Total (cfs)	945.00	Flow (cfs)	33.38	839.60	72.02
Top Width (ft)	184.08	Top Width (ft)	84.33	29.52	70.23
Vel Total (ft/s)	3.29	Avg. Vel. (ft/s)	0.76	4.90	1.00
Max Chl Dpth (ft)	7.63	Hydr. Depth (ft)	0.52	5.80	1.02
Conv. Total (cfs)	21915.9	Conv. (cfs)	774.1	19471.6	1670.2
Length Wtd. (ft)	130.35	Wetted Per. (ft)	84.59	32.02	70.34
Min Ch El (ft)	395.12	Shear (lb/sq ft)	0.06	0.62	0.12
Alpha	1.98	Stream Power (lb/ft s)	0.05	3.04	0.12
Frctn Loss (ft)		Cum Volume (acre-ft)	7.18	10.09	2.63
C & E Loss (ft)		Cum SA (acres)	4.02	2.19	2.08

CULVERT

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 9100

INPUT
Description: Ramblewood and N Chatham
Distance from Upstream XS =   38
Deck/Roadway Width   =   59
Weir Coefficient   =   2.6
Upstream Deck/Roadway Coordinates
    num=   2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
170	401	220	401

Upstream Bridge Cross Section Data
Station Elevation Data   num=   74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.09	4.04	404	32.8	404	33.47	403.96	36.52	403.93
36.63	403.93	44.09	403.81	47.88	403.76	48.22	403.74	51.57	403.71
53.11	403.62	61.28	403.54	61.9	403.5	66.45	403.44	66.84	403.41
67.26	403.39	71.02	403.32	71.47	403.29	71.97	403.28	72.49	403.26
79.5	403.11	80.09	403.1	82.35	403.07	83.55	403.05	85.7	403.01
86.96	402.97	88.3	402.95	88.96	402.95	92.83	402.8	95.73	402.8
97.28	402.74	98.26	402.73	100.66	402.68	105.32	402.59	106.12	402.57
106.8	402.55	111.4	402.44	111.87	402.42	112.4	402.4	114.75	402.38
115.22	402.36	115.42	402.34	118.6	402.3	129.62	402.3	133.82	402.69
143.12	402.75	163.4	402.09	174.73	401.46	181.84	399.73	181.86	399.72
187.51	395.32	196.08	395.12	197.79	396.62	203.28	397.38	203.29	397.39
203.77	397.45	211.36	399.8	220.8	401.03	233.33	401.65	233.48	401.66
234.16	401.67	234.38	401.67	253.57	402	261.14	402	261.73	402.01
262.76	402.03	263.67	402.06	283.21	402.81	291.42	403.12	295.82	403.3
299.88	403.45	311.32	403.92	313.45	404	321.72	404		

Manning's n Values   num=   3

Sta	n Val	Sta	n Val	Sta	n Val
0	.065	181.84	.04	211.36	.065

Bank Sta: Left   Right   Coeff Contr.   Expan.
        181.84 211.36   .3   .5
Ineffective Flow   num=   2

Sta L	Sta R	Elev	Permanent
0	168.9	401	F
220	321.72	401	F

Downstream Deck/Roadway Coordinates

```
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     100     401             210     401

Downstream Bridge Cross Section Data
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     404   51.12     404   73.72  402.14   74.58  402.06   74.68  402.06
   74.73  402.05    74.8  402.05   74.85  402.04   84.11  401.29   94.67   400.9
   95.13  400.79   103.9  401.19  116.56  401.37  121.51  401.23  133.12  400.48
  139.21  397.91  139.64   397.7  145.48  394.82  155.07   394.9  161.53   398.9
  161.54   398.9  162.31  399.38  169.42  400.29  184.45  400.51  198.05  400.61
  215.34  401.69  221.16     402  228.05  402.64  229.72  402.74  231.21  402.87
  232.43  402.97  234.41  403.11  235.31  403.17  237.42  403.31  244.27  403.66
  244.61  403.68   244.9   403.7  250.59     404  250.91  404.01  250.94  404.02
  256.32  404.26  256.52  404.26  257.04  404.28  261.82   404.5  273.83  405.17
  276.99  405.33  279.05  405.48  281.29  405.64  283.55  405.76   286.4     406
  288.12  406.13  288.52  406.16  293.59  406.53

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .065   94.67    .025  121.51    .055  139.64    .016  161.53    .055
  169.42    .025  198.05    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        139.64  161.53             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     138     398       F
     162  293.59     398       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     6.1    41.7     410

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  8      89     .013     .013        0                  .4                1
Upstream   Elevation =  395.73
           Centerline Station =  193
Downstream Elevation =  395.48
           Centerline Station =  150.5

CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)        189.00    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          8.21
  Q Barrel (cfs)            189.00    Culv Vel DS (ft/s)          8.47
  E.G. US. (ft)             399.50    Culv Inv El Up (ft)       395.73
  W.S. US. (ft)             399.39    Culv Inv El Dn (ft)       395.48
  E.G. DS (ft)              397.65    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              396.86    Culv Exit Loss (ft)         1.18
  Delta EG (ft)               1.85    Culv Entr Loss (ft)         0.42
  Delta WS (ft)               2.53    Q Weir (cfs)
  E.G. IC (ft)              399.32    Weir Sta Lft (ft)
  E.G. OC (ft)              399.50    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        398.03    Weir Max Depth (ft)
  Culv WS Outlet (ft)       397.71    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         2.30    Weir Flow Area (sq ft)
  Culv Crt Depth (ft)         2.23    Min El Weir Flow (ft)     401.01
```

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	336.34	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	9.80
Q Barrel (cfs)	336.34	Culv Vel DS (ft/s)	10.27
E.G. US. (ft)	401.62	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	401.49	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	399.22	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	398.51	Culv Exit Loss (ft)	1.17
Delta EG (ft)	2.40	Culv Entr Loss (ft)	0.96
Delta WS (ft)	2.98	Q Weir (cfs)	60.66
E.G. IC (ft)	401.62	Weir Sta Lft (ft)	172.05
E.G. OC (ft)	401.47	Weir Sta Rgt (ft)	232.50
Culvert Control	Inlet	Weir Submerg	0.00
Culv WS Inlet (ft)	399.16	Weir Max Depth (ft)	0.68
Culv WS Outlet (ft)	398.76	Weir Avg Depth (ft)	0.52
Culv Nml Depth (ft)	3.45	Weir Flow Area (sq ft)	31.22
Culv Crt Depth (ft)	3.28	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	360.06	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	9.00
Q Barrel (cfs)	360.06	Culv Vel DS (ft/s)	9.00
E.G. US. (ft)	402.52	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.26	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	401.13	Culv Frctn Ls (ft)	0.34
W.S. DS (ft)	400.41	Culv Exit Loss (ft)	0.54
Delta EG (ft)	1.39	Culv Entr Loss (ft)	0.50
Delta WS (ft)	1.85	Q Weir (cfs)	337.94
E.G. IC (ft)	402.47	Weir Sta Lft (ft)	107.77
E.G. OC (ft)	402.52	Weir Sta Rgt (ft)	275.83
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	1.60
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	0.82
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	122.64
Culv Crt Depth (ft)	3.43	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	294.88	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	7.37
Q Barrel (cfs)	294.88	Culv Vel DS (ft/s)	7.37
E.G. US. (ft)	402.91	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.60	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	402.07	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	401.50	Culv Exit Loss (ft)	0.27
Delta EG (ft)	0.84	Culv Entr Loss (ft)	0.34
Delta WS (ft)	1.10	Q Weir (cfs)	567.12
E.G. IC (ft)	402.74	Weir Sta Lft (ft)	89.87
E.G. OC (ft)	402.91	Weir Sta Rgt (ft)	285.99
Culvert Control	Outlet	Weir Submerg	0.15
Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	1.99
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	0.97
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	190.70
Culv Crt Depth (ft)	3.00	Min El Weir Flow (ft)	401.01

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	258.48	Culv Full Len (ft)	89.00
# Barrels	1	Culv Vel US (ft/s)	6.46
Q Barrel (cfs)	258.48	Culv Vel DS (ft/s)	6.46
E.G. US. (ft)	403.08	Culv Inv El Up (ft)	395.73
W.S. US. (ft)	402.75	Culv Inv El Dn (ft)	395.48
E.G. DS (ft)	402.47	Culv Frctn Ls (ft)	0.18
W.S. DS (ft)	402.00	Culv Exit Loss (ft)	0.18
Delta EG (ft)	0.62	Culv Entr Loss (ft)	0.26
Delta WS (ft)	0.75	Q Weir (cfs)	686.52
E.G. IC (ft)	402.85	Weir Sta Lft (ft)	82.03
E.G. OC (ft)	403.08	Weir Sta Rgt (ft)	290.21
Culvert Control	Outlet	Weir Submerg	0.31

Culv WS Inlet (ft)	399.73	Weir Max Depth (ft)	2.15
Culv WS Outlet (ft)	399.48	Weir Avg Depth (ft)	1.07
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	222.89
Culv Crt Depth (ft)	2.75	Min El Weir Flow (ft)	401.01

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9094

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404	51.12	404	73.72	402.14	74.58	402.06	74.68	402.06
74.73	402.05	74.8	402.05	74.85	402.04	84.11	401.29	94.67	400.9
95.13	400.79	103.9	401.19	116.56	401.37	121.51	401.23	133.12	400.48
139.21	397.91	139.64	397.7	145.48	394.82	155.07	394.9	161.53	398.9
161.54	398.9	162.31	399.38	169.42	400.29	184.45	400.51	198.05	400.61
215.34	401.69	221.16	402	228.05	402.64	229.72	402.74	231.21	402.87
232.43	402.97	234.41	403.11	235.31	403.17	237.42	403.31	244.27	403.66
244.61	403.68	244.9	403.7	250.59	404	250.91	404.01	250.94	404.02
256.32	404.26	256.52	404.26	257.04	404.28	261.82	404.5	273.83	405.17
276.99	405.33	279.05	405.48	281.29	405.64	283.55	405.76	286.4	406
288.12	406.13	288.52	406.16	293.59	406.53				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	94.67	.025	121.51	.055	139.64	.016	161.53	.055
169.42	.025	198.05	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
139.64	161.53	57.37	60.69	64.17	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	138	398	F
162	293.59	398	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
6.1	41.7	410

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	397.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.		0.016	
W.S. Elev (ft)	396.86	Reach Len. (ft)	57.37	60.69	64.17
Crit W.S. (ft)	396.86	Flow Area (sq ft)		26.57	
E.G. Slope (ft/ft)	0.003475	Area (sq ft)		26.57	
Q Total (cfs)	189.00	Flow (cfs)		189.00	
Top Width (ft)	16.91	Top Width (ft)		16.91	
Vel Total (ft/s)	7.11	Avg. Vel. (ft/s)		7.11	
Max Chl Dpth (ft)	2.04	Hydr. Depth (ft)		1.57	
Conv. Total (cfs)	3206.1	Conv. (cfs)		3206.1	
Length Wtd. (ft)	60.69	Wetted Per. (ft)		17.94	
Min Ch El (ft)	394.82	Shear (lb/sq ft)		0.32	
Alpha	1.00	Stream Power (lb/ft s)		2.29	
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	0.46	3.46	0.08
C & E Loss (ft)	0.08	Cum SA (acres)	0.92	1.88	0.12

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	399.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.055	0.016	
W.S. Elev (ft)	398.51	Reach Len. (ft)	57.37	60.69	64.17
Crit W.S. (ft)	397.92	Flow Area (sq ft)	0.73	58.69	
E.G. Slope (ft/ft)	0.001515	Area (sq ft)	0.73	58.69	
Q Total (cfs)	397.00	Flow (cfs)	0.39	396.61	
Top Width (ft)	23.12	Top Width (ft)	1.85	21.26	
Vel Total (ft/s)	6.68	Avg. Vel. (ft/s)	0.53	6.76	
Max Chl Dpth (ft)	3.69	Hydr. Depth (ft)	0.39	2.76	
Conv. Total (cfs)	10199.3	Conv. (cfs)	10.0	10189.3	
Length Wtd. (ft)	60.69	Wetted Per. (ft)	2.02	22.96	
Min Ch El (ft)	394.82	Shear (lb/sq ft)	0.03	0.24	
Alpha	1.02	Stream Power (lb/ft s)	0.02	1.63	
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	1.63	5.35	0.35
C & E Loss (ft)	0.19	Cum SA (acres)	1.83	2.01	0.41

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	401.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.055	0.016	0.054
W.S. Elev (ft)	400.41	Reach Len. (ft)	57.37	60.69	64.17
Crit W.S. (ft)	399.00	Flow Area (sq ft)	8.54	100.20	5.62
E.G. Slope (ft/ft)	0.000798	Area (sq ft)	8.54	100.20	5.62
Q Total (cfs)	698.00	Flow (cfs)	7.51	687.49	3.00
Top Width (ft)	44.55	Top Width (ft)	6.36	21.89	16.29
Vel Total (ft/s)	6.10	Avg. Vel. (ft/s)	0.88	6.86	0.53
Max Chl Dpth (ft)	5.59	Hydr. Depth (ft)	1.34	4.58	0.35
Conv. Total (cfs)	24703.4	Conv. (cfs)	265.8	24331.3	106.3
Length Wtd. (ft)	60.69	Wetted Per. (ft)	6.92	23.70	16.49
Min Ch El (ft)	394.82	Shear (lb/sq ft)	0.06	0.21	0.02
Alpha	1.25	Stream Power (lb/ft s)	0.05	1.45	0.01
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	4.35	7.64	1.18
C & E Loss (ft)	0.35	Cum SA (acres)	2.83	2.07	1.11

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	402.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.048	0.016	0.033
W.S. Elev (ft)	401.50	Reach Len. (ft)	57.37	60.69	64.17
Crit W.S. (ft)	399.51	Flow Area (sq ft)	36.06	123.94	49.21
E.G. Slope (ft/ft)	0.000513	Area (sq ft)	36.06	123.94	49.21
Q Total (cfs)	862.00	Flow (cfs)	22.67	785.64	53.69
Top Width (ft)	130.71	Top Width (ft)	58.09	21.89	50.73
Vel Total (ft/s)	4.12	Avg. Vel. (ft/s)	0.63	6.34	1.09
Max Chl Dpth (ft)	6.68	Hydr. Depth (ft)	0.62	5.66	0.97
Conv. Total (cfs)	38048.9	Conv. (cfs)	1000.6	34678.2	2370.1
Length Wtd. (ft)	60.76	Wetted Per. (ft)	58.72	23.70	50.95
Min Ch El (ft)	394.82	Shear (lb/sq ft)	0.02	0.17	0.03
Alpha	2.16	Stream Power (lb/ft s)	0.01	1.06	0.03
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	6.01	8.78	1.98
C & E Loss (ft)	0.47	Cum SA (acres)	3.42	2.10	1.50

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than

1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	402.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.	0.043	0.016	0.033
W.S. Elev (ft)	402.00	Reach Len. (ft)	57.37	60.69	64.17
Crit W.S. (ft)	399.74	Flow Area (sq ft)	66.60	134.87	76.66
E.G. Slope (ft/ft)	0.000404	Area (sq ft)	66.60	134.87	76.66
Q Total (cfs)	945.00	Flow (cfs)	52.15	802.53	90.31
Top Width (ft)	145.71	Top Width (ft)	64.25	21.89	59.57
Vel Total (ft/s)	3.40	Avg. Vel. (ft/s)	0.78	5.95	1.18
Max Chl Dpth (ft)	7.18	Hydr. Depth (ft)	1.04	6.16	1.29
Conv. Total (cfs)	47010.0	Conv. (cfs)	2594.4	39922.8	4492.7
Length Wtd. (ft)	60.77	Wetted Per. (ft)	64.91	23.70	59.81
Min Ch El (ft)	394.82	Shear (lb/sq ft)	0.03	0.14	0.03
Alpha	2.62	Stream Power (lb/ft s)	0.02	0.85	0.04
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	7.18	9.45	2.63
C & E Loss (ft)	0.47	Cum SA (acres)	3.80	2.11	1.88

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 9033

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404	54.52	404	73.75	402.26	75.58	402.09	75.64	402.08
75.71	402.08	75.76	402.07	91.39	400.68	91.77	400.49	102.07	400.62
111.47	400.85	112.04	401.3	118.01	401.21	126.27	399.38	131.85	396.43
131.86	396.42	132.13	396.28	135.54	394.33	143.52	394.25	146.97	396.1
151.92	398.65	152.18	398.79	157.76	399.84	162.63	400.24	168.26	400.49
168.8	400.26	177.99	400.05	187.01	399.75	187.54	400.09	195.78	400.92
195.83	400.93	196.85	401.14	210.93	404	212.97	404.31	215.23	404.58
220.35	405.21	226.57	406	263.3	406	266.2	406.17		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	91.39	.025	118.01	.055	132.13	.016	146.97	.055
162.63	.025	187.54	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
132.13	146.97	96.95	94.72	92.33	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
222.5	266.2	410	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
12.8	42.2	410

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	397.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.04	Wt. n-Val.		0.016	0.055
W.S. Elev (ft)	396.28	Reach Len. (ft)	96.95	94.72	92.33
Crit W.S. (ft)	396.45	Flow Area (sq ft)		23.06	0.03
E.G. Slope (ft/ft)	0.004712	Area (sq ft)	0.00	23.06	0.03
Q Total (cfs)	189.00	Flow (cfs)		188.99	0.01
Top Width (ft)	15.20	Top Width (ft)		14.84	0.36
Vel Total (ft/s)	8.18	Avg. Vel. (ft/s)		8.19	0.35

Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)		1.55	0.09
Conv. Total (cfs)	2753.4	Conv. (cfs)		2753.2	0.2
Length Wtd. (ft)	94.72	Wetted Per. (ft)		15.82	0.40
Min Ch El (ft)	394.25	Shear (lb/sq ft)		0.43	0.02
Alpha	1.00	Stream Power (lb/ft s)		3.51	0.01
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	0.46	3.43	0.08
C & E Loss (ft)	0.05	Cum SA (acres)	0.92	1.85	0.12

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	398.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.35	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	397.56	Reach Len. (ft)	96.95	94.72	92.33
Crit W.S. (ft)	397.56	Flow Area (sq ft)	1.54	41.98	2.06
E.G. Slope (ft/ft)	0.002770	Area (sq ft)	1.54	41.98	2.06
Q Total (cfs)	397.00	Flow (cfs)	1.50	393.31	2.20
Top Width (ft)	20.08	Top Width (ft)	2.41	14.84	2.83
Vel Total (ft/s)	8.71	Avg. Vel. (ft/s)	0.97	9.37	1.06
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)	0.64	2.83	0.73
Conv. Total (cfs)	7542.5	Conv. (cfs)	28.4	7472.4	41.7
Length Wtd. (ft)	94.72	Wetted Per. (ft)	2.73	15.82	3.18
Min Ch El (ft)	394.25	Shear (lb/sq ft)	0.10	0.46	0.11
Alpha	1.15	Stream Power (lb/ft s)	0.09	4.30	0.12
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	1.63	5.28	0.35
C & E Loss (ft)	0.01	Cum SA (acres)	1.82	1.99	0.41

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	400.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.90	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	398.81	Reach Len. (ft)	96.95	94.72	92.33
Crit W.S. (ft)	398.81	Flow Area (sq ft)	6.04	60.53	7.12
E.G. Slope (ft/ft)	0.002436	Area (sq ft)	6.04	60.53	7.12
Q Total (cfs)	698.00	Flow (cfs)	8.66	678.66	10.68
Top Width (ft)	24.92	Top Width (ft)	4.78	14.84	5.31
Vel Total (ft/s)	9.47	Avg. Vel. (ft/s)	1.43	11.21	1.50
Max Chl Dpth (ft)	4.56	Hydr. Depth (ft)	1.26	4.08	1.34
Conv. Total (cfs)	14142.6	Conv. (cfs)	175.5	13750.7	216.4
Length Wtd. (ft)	94.71	Wetted Per. (ft)	5.41	15.82	5.96
Min Ch El (ft)	394.25	Shear (lb/sq ft)	0.17	0.58	0.18
Alpha	1.36	Stream Power (lb/ft s)	0.24	6.52	0.27
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	4.34	7.52	1.17
C & E Loss (ft)	0.03	Cum SA (acres)	2.82	2.05	1.09

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	401.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.12	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	399.43	Reach Len. (ft)	96.95	94.72	92.33
Crit W.S. (ft)	399.43	Flow Area (sq ft)	9.37	69.75	11.44
E.G. Slope (ft/ft)	0.002273	Area (sq ft)	9.37	69.75	11.44
Q Total (cfs)	862.00	Flow (cfs)	14.86	830.25	16.88
Top Width (ft)	29.53	Top Width (ft)	6.08	14.84	8.61
Vel Total (ft/s)	9.52	Avg. Vel. (ft/s)	1.59	11.90	1.48
Max Chl Dpth (ft)	5.18	Hydr. Depth (ft)	1.54	4.70	1.33
Conv. Total (cfs)	18079.4	Conv. (cfs)	311.8	17413.5	354.1
Length Wtd. (ft)	94.71	Wetted Per. (ft)	6.86	15.82	9.32
Min Ch El (ft)	394.25	Shear (lb/sq ft)	0.19	0.63	0.17
Alpha	1.51	Stream Power (lb/ft s)	0.31	7.45	0.26
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	5.98	8.64	1.93
C & E Loss (ft)	0.03	Cum SA (acres)	3.38	2.08	1.46

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	401.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.02	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	399.94	Reach Len. (ft)	96.95	94.72	92.33
Crit W.S. (ft)	399.75	Flow Area (sq ft)	13.05	77.31	17.10
E.G. Slope (ft/ft)	0.001904	Area (sq ft)	13.05	77.31	17.10
Q Total (cfs)	945.00	Flow (cfs)	19.42	902.07	23.51
Top Width (ft)	41.17	Top Width (ft)	8.38	14.84	17.95
Vel Total (ft/s)	8.79	Avg. Vel. (ft/s)	1.49	11.67	1.37
Max Chl Dpth (ft)	5.69	Hydr. Depth (ft)	1.56	5.21	0.95
Conv. Total (cfs)	21655.6	Conv. (cfs)	445.0	20672.0	538.7
Length Wtd. (ft)	94.67	Wetted Per. (ft)	9.21	15.82	18.76
Min Ch El (ft)	394.25	Shear (lb/sq ft)	0.17	0.58	0.11
Alpha	1.68	Stream Power (lb/ft s)	0.25	6.78	0.15
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	7.13	9.30	2.56
C & E Loss (ft)	0.20	Cum SA (acres)	3.75	2.09	1.82

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8938

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406.83	25.54	406	68.91	406	69.17	405.97	69.26	405.96
74.09	405.46	76.78	405.18	79.77	404.86	87.76	404	88.56	403.9
90.95	403.6	99.23	402.55	100.92	402.33	101.42	402.26	107.11	401.8
107.69	401.77	107.71	401.77	107.8	401.76	107.85	401.76	120.05	400.14
126.04	399.87	126.55	399.66	135.93	399.95	144.47	400.28	145.09	400.64
151.45	400.71	160.73	398.11	162.66	397.11	162.67	397.11	165.14	395.84
168.52	394	176.28	393.85	179.62	395.83	182.69	396.99	187.03	398.62
195.68	399.85	201.07	400.07	201.66	399.8	209.6	399.64	220.7	399.42
221.2	399.78	228.33	399.83	228.38	399.84	229.28	399.98	241.94	402
244.19	402.33	245.2	402.41	256.53	403.57	260.47	404	263.82	404.49

264.1	404.5	265.84	404.75	266.21	404.74	266.51	404.74	269.44	405.12
281.2	406	307.11	406						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	120.05	.025	151.45	.055	165.14	.016	179.62	.055
195.68	.025	221.2	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
165.14	179.62	163.23	161.92	160.75	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
273.6	306.99	410	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
14.5	53.7	410

CROSS SECTION OUTPUT Profile #2-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	396.99	Element			
Vel Head (ft)	0.95	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	396.03	Reach Len. (ft)	163.23	161.92	160.75
Crit W.S. (ft)	396.12	Flow Area (sq ft)	0.04	24.12	0.06
E.G. Slope (ft/ft)	0.003944	Area (sq ft)	0.04	24.12	0.06
Q Total (cfs)	189.00	Flow (cfs)	0.01	188.97	0.02
Top Width (ft)	15.40	Top Width (ft)	0.38	14.48	0.54
Vel Total (ft/s)	7.81	Avg. Vel. (ft/s)	0.33	7.83	0.35
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	0.10	1.67	0.10
Conv. Total (cfs)	3009.7	Conv. (cfs)	0.2	3009.2	0.3
Length Wtd. (ft)	161.92	Wetted Per. (ft)	0.42	15.49	0.58
Min Ch El (ft)	393.85	Shear (lb/sq ft)	0.02	0.38	0.02
Alpha	1.01	Stream Power (lb/ft s)	0.01	3.00	0.01
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	0.46	3.38	0.08
C & E Loss (ft)	0.03	Cum SA (acres)	0.92	1.82	0.12

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the
water surface that had the least amount of error between computed and assumed values.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	398.62	Element			
Vel Head (ft)	1.49	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	397.13	Reach Len. (ft)	163.23	161.92	160.75
Crit W.S. (ft)	397.25	Flow Area (sq ft)	1.61	39.92	2.22
E.G. Slope (ft/ft)	0.003180	Area (sq ft)	1.61	39.92	2.22
Q Total (cfs)	397.00	Flow (cfs)	1.68	392.90	2.42
Top Width (ft)	20.42	Top Width (ft)	2.51	14.48	3.43
Vel Total (ft/s)	9.08	Avg. Vel. (ft/s)	1.05	9.84	1.09
Max Chl Dpth (ft)	3.27	Hydr. Depth (ft)	0.64	2.76	0.65
Conv. Total (cfs)	7039.8	Conv. (cfs)	29.8	6967.1	42.9
Length Wtd. (ft)	161.92	Wetted Per. (ft)	2.82	15.49	3.67
Min Ch El (ft)	393.85	Shear (lb/sq ft)	0.11	0.51	0.12
Alpha	1.16	Stream Power (lb/ft s)	0.12	5.04	0.13
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	1.62	5.19	0.35
C & E Loss (ft)	0.06	Cum SA (acres)	1.82	1.95	0.40

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #50-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	400.43	Element			
Vel Head (ft)	2.17	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	398.27	Reach Len. (ft)	163.23	161.92	160.75
Crit W.S. (ft)	398.55	Flow Area (sq ft)	5.75	56.45	7.87
E.G. Slope (ft/ft)	0.002971	Area (sq ft)	5.75	56.45	7.87
Q Total (cfs)	698.00	Flow (cfs)	8.68	676.68	12.64
Top Width (ft)	25.92	Top Width (ft)	4.97	14.48	6.47
Vel Total (ft/s)	9.96	Avg. Vel. (ft/s)	1.51	11.99	1.61
Max Chl Dpth (ft)	4.42	Hydr. Depth (ft)	1.16	3.90	1.22

Conv. Total (cfs)	12806.0	Conv. (cfs)	159.2	12414.9	231.9
Length Wtd. (ft)	161.92	Wetted Per. (ft)	5.54	15.49	6.91
Min Ch El (ft)	393.85	Shear (lb/sq ft)	0.19	0.68	0.21
Alpha	1.40	Stream Power (lb/ft s)	0.29	8.10	0.34
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	4.33	7.40	1.15
C & E Loss (ft)	0.08	Cum SA (acres)	2.81	2.02	1.08

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	401.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.47	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	398.81	Reach Len. (ft)	163.23	161.92	160.75
Crit W.S. (ft)	399.17	Flow Area (sq ft)	8.99	64.35	11.88
E.G. Slope (ft/ft)	0.002868	Area (sq ft)	8.99	64.35	11.88
Q Total (cfs)	862.00	Flow (cfs)	14.60	827.14	20.26
Top Width (ft)	30.16	Top Width (ft)	6.92	14.48	8.77
Vel Total (ft/s)	10.11	Avg. Vel. (ft/s)	1.62	12.85	1.71
Max Chl Dpth (ft)	4.96	Hydr. Depth (ft)	1.30	4.44	1.36
Conv. Total (cfs)	16095.0	Conv. (cfs)	272.7	15444.1	378.3
Length Wtd. (ft)	161.92	Wetted Per. (ft)	7.57	15.49	9.29
Min Ch El (ft)	393.85	Shear (lb/sq ft)	0.21	0.74	0.23
Alpha	1.55	Stream Power (lb/ft s)	0.35	9.56	0.39
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	5.96	8.50	1.91
C & E Loss (ft)	0.09	Cum SA (acres)	3.37	2.05	1.44

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	401.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.35	Wt. n-Val.	0.050	0.016	0.046
W.S. Elev (ft)	400.26	Reach Len. (ft)	163.23	161.92	160.75
Crit W.S. (ft)	400.26	Flow Area (sq ft)	30.07	85.30	49.66
E.G. Slope (ft/ft)	0.001162	Area (sq ft)	30.07	85.30	49.66
Q Total (cfs)	945.00	Flow (cfs)	37.18	842.17	65.65
Top Width (ft)	102.76	Top Width (ft)	36.87	14.48	51.41
Vel Total (ft/s)	5.73	Avg. Vel. (ft/s)	1.24	9.87	1.32
Max Chl Dpth (ft)	6.41	Hydr. Depth (ft)	0.82	5.89	0.97
Conv. Total (cfs)	27717.7	Conv. (cfs)	1090.6	24701.6	1925.5
Length Wtd. (ft)	161.90	Wetted Per. (ft)	37.78	15.49	52.22
Min Ch El (ft)	393.85	Shear (lb/sq ft)	0.06	0.40	0.07
Alpha	2.65	Stream Power (lb/ft s)	0.07	3.94	0.09
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	7.08	9.13	2.49
C & E Loss (ft)	0.21	Cum SA (acres)	3.70	2.06	1.75

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8776

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.02	.32	404	48.65	404	62.12	402.5	66.46	402
80.78	400.01	80.88	400	80.94	399.99	83.05	399.69	85.75	399.3
85.97	399.27	86.02	399.26	94.56	398.79	95	398.66	104.7	398.95
112.97	399.21	113.61	399.61	119.65	399.47	128.08	397.38	132.67	395.23
133.23	394.97	136.73	393.04	144.47	392.95	148.08	394.88	152.66	396.57
152.67	396.58	156.39	397.95	164.19	398.93	169.62	399.23	170.14	399.01
178.25	398.86	189.11	398.71	206.52	402.51	206.57	402.53	206.77	402.6
206.99	402.68	207.26	402.78	208.93	403.39	216.05	406	217.54	406.42
223.17	408	228.58	408.88	230.19	409.09	233.25	409.56	237.39	410
260.55	410								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	94.56	.025	119.65	.055	133.23	.016	148.08	.055
164.19	.025	189.11	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
133.23	148.08	150.65	147.84	144.92	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
5.3	36.7	410	242.6	260.55	415

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	396.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.26	Wt. n-Val.		0.016	
W.S. Elev (ft)	394.87	Reach Len. (ft)	150.65	147.84	144.92
Crit W.S. (ft)	395.17	Flow Area (sq ft)		21.02	
E.G. Slope (ft/ft)	0.006300	Area (sq ft)		21.02	
Q Total (cfs)	189.00	Flow (cfs)		189.00	
Top Width (ft)	14.66	Top Width (ft)		14.66	
Vel Total (ft/s)	8.99	Avg. Vel. (ft/s)		8.99	
Max Chl Dpth (ft)	1.92	Hydr. Depth (ft)		1.43	
Conv. Total (cfs)	2381.2	Conv. (cfs)		2381.2	
Length Wtd. (ft)	147.84	Wetted Per. (ft)		15.61	
Min Ch El (ft)	392.95	Shear (lb/sq ft)		0.53	
Alpha	1.00	Stream Power (lb/ft s)		4.76	
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	0.46	3.29	0.08
C & E Loss (ft)	0.01	Cum SA (acres)	0.92	1.77	0.12

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	397.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.10	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	395.74	Reach Len. (ft)	150.65	147.84	144.92
Crit W.S. (ft)	396.28	Flow Area (sq ft)	0.64	33.95	1.01
E.G. Slope (ft/ft)	0.005680	Area (sq ft)	0.64	33.95	1.01
Q Total (cfs)	397.00	Flow (cfs)	0.65	395.23	1.12
Top Width (ft)	18.84	Top Width (ft)	1.66	14.85	2.34
Vel Total (ft/s)	11.15	Avg. Vel. (ft/s)	1.01	11.64	1.11
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	0.39	2.29	0.43
Conv. Total (cfs)	5267.9	Conv. (cfs)	8.6	5244.3	14.9
Length Wtd. (ft)	147.84	Wetted Per. (ft)	1.83	15.83	2.49
Min Ch El (ft)	392.95	Shear (lb/sq ft)	0.12	0.76	0.14
Alpha	1.08	Stream Power (lb/ft s)	0.13	8.85	0.16
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	1.62	5.06	0.34
C & E Loss (ft)	0.02	Cum SA (acres)	1.81	1.90	0.39

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	399.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.94	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	396.77	Reach Len. (ft)	150.65	147.84	144.92
Crit W.S. (ft)	397.57	Flow Area (sq ft)	3.47	49.23	4.85

E.G. Slope (ft/ft)	0.004926	Area (sq ft)	3.47	49.23	4.85
Q Total (cfs)	698.00	Flow (cfs)	5.76	683.74	8.50
Top Width (ft)	23.81	Top Width (ft)	3.85	14.85	5.11
Vel Total (ft/s)	12.13	Avg. Vel. (ft/s)	1.66	13.89	1.75
Max Chl Dpth (ft)	3.82	Hydr. Depth (ft)	0.90	3.32	0.95
Conv. Total (cfs)	9945.1	Conv. (cfs)	82.0	9742.0	121.1
Length Wtd. (ft)	147.84	Wetted Per. (ft)	4.25	15.83	5.45
Min Ch El (ft)	392.95	Shear (lb/sq ft)	0.25	0.96	0.27
Alpha	1.29	Stream Power (lb/ft s)	0.42	13.28	0.48
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	4.31	7.20	1.13
C & E Loss (ft)	0.04	Cum SA (acres)	2.80	1.96	1.06

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	400.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.33	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	397.25	Reach Len. (ft)	150.65	147.84	144.92
Crit W.S. (ft)	398.12	Flow Area (sq ft)	5.55	56.32	7.59
E.G. Slope (ft/ft)	0.004709	Area (sq ft)	5.55	56.32	7.59
Q Total (cfs)	862.00	Flow (cfs)	10.52	836.37	15.11
Top Width (ft)	26.13	Top Width (ft)	4.87	14.85	6.41
Vel Total (ft/s)	12.41	Avg. Vel. (ft/s)	1.89	14.85	1.99
Max Chl Dpth (ft)	4.30	Hydr. Depth (ft)	1.14	3.79	1.19
Conv. Total (cfs)	12561.5	Conv. (cfs)	153.4	12187.9	220.2
Length Wtd. (ft)	147.83	Wetted Per. (ft)	5.38	15.83	6.83
Min Ch El (ft)	392.95	Shear (lb/sq ft)	0.30	1.05	0.33
Alpha	1.39	Stream Power (lb/ft s)	0.58	15.53	0.65
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	5.93	8.27	1.87
C & E Loss (ft)	0.04	Cum SA (acres)	3.34	1.99	1.41

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	400.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.44	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	397.51	Reach Len. (ft)	150.65	147.84	144.92
Crit W.S. (ft)	398.46	Flow Area (sq ft)	6.92	60.22	9.37
E.G. Slope (ft/ft)	0.004480	Area (sq ft)	6.92	60.22	9.37
Q Total (cfs)	945.00	Flow (cfs)	13.43	912.07	19.50
Top Width (ft)	27.65	Top Width (ft)	5.68	14.85	7.12
Vel Total (ft/s)	12.35	Avg. Vel. (ft/s)	1.94	15.15	2.08
Max Chl Dpth (ft)	4.56	Hydr. Depth (ft)	1.22	4.06	1.32
Conv. Total (cfs)	14119.1	Conv. (cfs)	200.7	13627.1	291.3
Length Wtd. (ft)	147.83	Wetted Per. (ft)	6.23	15.83	7.59
Min Ch El (ft)	392.95	Shear (lb/sq ft)	0.31	1.06	0.35
Alpha	1.45	Stream Power (lb/ft s)	0.60	16.11	0.72
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	7.01	8.86	2.38
C & E Loss (ft)	0.05	Cum SA (acres)	3.62	2.00	1.64

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8628

INPUT

Description:

Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400	43.24	400	67.19	398.75	67.49	398.74	67.73	398.73
68.24	398.7	68.32	398.69	68.41	398.69	68.68	398.67	68.77	398.67
85.99	397.88	92.07	397.58	92.45	397.4	102.08	397.51	110.87	397.66
111.48	398	117.04	397.75	126.38	395.5	129.16	394.42	130.11	394.05
133.66	391.99	141.81	392.03	145.69	394.2	149.16	395.59	151.61	396.57
162.06	397.95	167.53	398.25	167.98	397.98	177.17	397.66	186.26	397.42
186.67	397.61	193.56	398.98	193.62	399	193.64	399	196.35	399.64
206.39	402	212.11	403.16	216.57	404	219.52	404.54	220.37	404.68
222.85	405.11	224.3	405.34	225.44	405.53	227.17	405.78	227.52	405.83
228.81	406	230.99	406.22	232.36	406.33	232.68	406.36	235.09	406.54
237.05	406.66	237.73	406.69	238.84	406.74	239.66	406.76	241.98	406.81
242.96	406.84	244.55	406.85	245.61	406.87	247.83	406.87	249.36	406.86
249.93	406.85	251.39	406.82	252.48	406.8	254.7	406.71	255.71	406.68
257.9	406.57	260.13	406.42	260.76	406.39	261.31	406.36	262.94	406.24

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	92.07	.025	117.04	.055	130.11	.016	145.69	.055
162.06	.025	186.67	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
130.11	145.69	174.55	169.35	164.24	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
2.3	34.3	408	248.8	262.94	408

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	395.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.33	Wt. n-Val.		0.016	
W.S. Elev (ft)	393.81	Reach Len. (ft)	174.55	169.35	164.24
Crit W.S. (ft)	394.17	Flow Area (sq ft)		20.41	
E.G. Slope (ft/ft)	0.006848	Area (sq ft)		20.41	
Q Total (cfs)	189.00	Flow (cfs)		189.00	
Top Width (ft)	14.48	Top Width (ft)		14.48	
Vel Total (ft/s)	9.26	Avg. Vel. (ft/s)		9.26	
Max Chl Dpth (ft)	1.82	Hydr. Depth (ft)		1.41	
Conv. Total (cfs)	2283.9	Conv. (cfs)		2283.9	
Length Wtd. (ft)	169.35	Wetted Per. (ft)		15.44	
Min Ch El (ft)	391.99	Shear (lb/sq ft)		0.57	
Alpha	1.00	Stream Power (lb/ft s)		5.23	
Frctn Loss (ft)	1.11	Cum Volume (acre-ft)	0.46	3.22	0.08
C & E Loss (ft)	0.06	Cum SA (acres)	0.92	1.72	0.12

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	396.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.27	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	394.62	Reach Len. (ft)	174.55	169.35	164.24
Crit W.S. (ft)	395.26	Flow Area (sq ft)	0.41	32.75	0.22
E.G. Slope (ft/ft)	0.006924	Area (sq ft)	0.41	32.75	0.22
Q Total (cfs)	397.00	Flow (cfs)	0.38	396.45	0.16
Top Width (ft)	18.08	Top Width (ft)	1.46	15.58	1.04
Vel Total (ft/s)	11.89	Avg. Vel. (ft/s)	0.93	12.11	0.75
Max Chl Dpth (ft)	2.63	Hydr. Depth (ft)	0.28	2.10	0.21
Conv. Total (cfs)	4771.0	Conv. (cfs)	4.6	4764.4	2.0
Length Wtd. (ft)	169.35	Wetted Per. (ft)	1.56	16.70	1.12
Min Ch El (ft)	391.99	Shear (lb/sq ft)	0.11	0.85	0.08
Alpha	1.03	Stream Power (lb/ft s)	0.11	10.26	0.06
Frctn Loss (ft)	1.24	Cum Volume (acre-ft)	1.62	4.94	0.34
C & E Loss (ft)	0.06	Cum SA (acres)	1.80	1.85	0.39

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	398.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.31	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	395.53	Reach Len. (ft)	174.55	169.35	164.24
Crit W.S. (ft)	396.53	Flow Area (sq ft)	2.82	46.99	2.21
E.G. Slope (ft/ft)	0.006293	Area (sq ft)	2.82	46.99	2.21
Q Total (cfs)	698.00	Flow (cfs)	4.69	689.88	3.44

Top Width (ft)	22.76	Top Width (ft)	3.86	15.58	3.32
Vel Total (ft/s)	13.42	Avg. Vel. (ft/s)	1.66	14.68	1.55
Max Chl Dpth (ft)	3.54	Hydr. Depth (ft)	0.73	3.02	0.67
Conv. Total (cfs)	8798.8	Conv. (cfs)	59.1	8696.4	43.3
Length Wtd. (ft)	169.35	Wetted Per. (ft)	4.13	16.70	3.58
Min Ch El (ft)	391.99	Shear (lb/sq ft)	0.27	1.11	0.24
Alpha	1.18	Stream Power (lb/ft s)	0.45	16.23	0.38
Frctn Loss (ft)	1.27	Cum Volume (acre-ft)	4.30	7.04	1.12
C & E Loss (ft)	0.01	Cum SA (acres)	2.78	1.91	1.04

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	399.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.77	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	395.97	Reach Len. (ft)	174.55	169.35	164.24
Crit W.S. (ft)	397.12	Flow Area (sq ft)	4.90	53.79	3.90
E.G. Slope (ft/ft)	0.006027	Area (sq ft)	4.90	53.79	3.90
Q Total (cfs)	862.00	Flow (cfs)	8.99	845.84	7.17
Top Width (ft)	25.67	Top Width (ft)	5.67	15.58	4.41
Vel Total (ft/s)	13.77	Avg. Vel. (ft/s)	1.83	15.72	1.84
Max Chl Dpth (ft)	3.98	Hydr. Depth (ft)	0.86	3.45	0.88
Conv. Total (cfs)	11103.5	Conv. (cfs)	115.8	10895.4	92.4
Length Wtd. (ft)	169.35	Wetted Per. (ft)	6.00	16.70	4.76
Min Ch El (ft)	391.99	Shear (lb/sq ft)	0.31	1.21	0.31
Alpha	1.28	Stream Power (lb/ft s)	0.56	19.06	0.57
Frctn Loss (ft)	1.24	Cum Volume (acre-ft)	5.92	8.09	1.85
C & E Loss (ft)	0.02	Cum SA (acres)	3.32	1.94	1.39

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	400.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.96	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	396.19	Reach Len. (ft)	174.55	169.35	164.24
Crit W.S. (ft)	398.18	Flow Area (sq ft)	6.25	57.21	4.93
E.G. Slope (ft/ft)	0.005850	Area (sq ft)	6.25	57.21	4.93
Q Total (cfs)	945.00	Flow (cfs)	12.03	923.32	9.65
Top Width (ft)	27.12	Top Width (ft)	6.58	15.58	4.96
Vel Total (ft/s)	13.82	Avg. Vel. (ft/s)	1.93	16.14	1.96
Max Chl Dpth (ft)	4.20	Hydr. Depth (ft)	0.95	3.67	0.99
Conv. Total (cfs)	12355.7	Conv. (cfs)	157.3	12072.2	126.1
Length Wtd. (ft)	169.35	Wetted Per. (ft)	6.94	16.70	5.35
Min Ch El (ft)	391.99	Shear (lb/sq ft)	0.33	1.25	0.34
Alpha	1.33	Stream Power (lb/ft s)	0.63	20.19	0.66
Frctn Loss (ft)	1.22	Cum Volume (acre-ft)	6.99	8.66	2.36
C & E Loss (ft)	0.03	Cum SA (acres)	3.60	1.95	1.62

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 8459

INPUT
Description:
Station Elevation Data   num=   59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400	9.36	400	19.64	399.33	21.18	399.35	21.52	399.32
24.66	399.35	25.01	399.32	25.43	399.29	27.8	399.31	29.23	399.19
31.5	399.19	32.66	399.09	33.88	399	37.04	398.98	37.68	398.93
38.41	398.88	40.3	398.84	41.85	398.75	42.89	398.71	46.29	398.53
46.67	398.51	47.01	398.49	52.88	398.19	53.02	398.18	53.15	398.17
55.56	398.02	55.82	398	62.38	397.62	63.06	397.58	63.09	397.58
63.13	397.57	63.45	397.55	63.5	397.55	63.56	397.54	70.83	396.9
74.37	396.43	74.76	396.35	84.77	396.45	93.28	396.59	93.77	396.9
99.65	396.57	109.58	394.6	111.17	393.84	116.68	391.22	127.02	391.25
131.21	393.31	133.8	394.59	144.34	396.93	149.92	397.28	150.64	396.93
159.51	396.62	169.28	396.29	183.57	398.17	183.62	398.18	183.63	398.18
185.91	398.46	197.93	400	208.17	400	236.83	400.54		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	74.37	.025	99.65	.055	111.17	.016	131.21	.055
144.34	.025	169.28	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
111.17	131.21	130.02	130.06	129.9	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	31.8	405	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
225.5	236.83	405

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	393.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.		0.016	
W.S. Elev (ft)	392.86	Reach Len. (ft)	130.02	130.06	129.90
Crit W.S. (ft)	393.14	Flow Area (sq ft)		22.23	
E.G. Slope (ft/ft)	0.006229	Area (sq ft)		22.23	
Q Total (cfs)	189.00	Flow (cfs)		189.00	
Top Width (ft)	17.06	Top Width (ft)		17.06	
Vel Total (ft/s)	8.50	Avg. Vel. (ft/s)		8.50	
Max Chl Dpth (ft)	1.64	Hydr. Depth (ft)		1.30	
Conv. Total (cfs)	2394.6	Conv. (cfs)		2394.6	
Length Wtd. (ft)	130.06	Wetted Per. (ft)		17.80	
Min Ch El (ft)	391.22	Shear (lb/sq ft)		0.49	
Alpha	1.00	Stream Power (lb/ft s)		4.13	
Frctn Loss (ft)	0.73	Cum Volume (acre-ft)	0.46	3.14	0.08
C & E Loss (ft)	0.05	Cum SA (acres)	0.92	1.66	0.12

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	395.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.07	Wt. n-Val.		0.016	0.055
W.S. Elev (ft)	393.52	Reach Len. (ft)	130.02	130.06	129.90
Crit W.S. (ft)	394.10	Flow Area (sq ft)		34.41	0.05
E.G. Slope (ft/ft)	0.007670	Area (sq ft)		34.41	0.05
Q Total (cfs)	397.00	Flow (cfs)		396.98	0.02
Top Width (ft)	19.80	Top Width (ft)		19.37	0.43
Vel Total (ft/s)	11.52	Avg. Vel. (ft/s)		11.54	0.49
Max Chl Dpth (ft)	2.30	Hydr. Depth (ft)		1.78	0.11
Conv. Total (cfs)	4533.0	Conv. (cfs)		4532.8	0.3
Length Wtd. (ft)	130.06	Wetted Per. (ft)		20.37	0.48
Min Ch El (ft)	391.22	Shear (lb/sq ft)		0.81	0.05
Alpha	1.00	Stream Power (lb/ft s)		9.33	0.02
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	1.62	4.81	0.34
C & E Loss (ft)	0.14	Cum SA (acres)	1.80	1.78	0.38

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	397.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.40	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	394.16	Reach Len. (ft)	130.02	130.06	129.90
Crit W.S. (ft)	395.21	Flow Area (sq ft)	0.11	47.05	0.73
E.G. Slope (ft/ft)	0.008736	Area (sq ft)	0.11	47.05	0.73
Q Total (cfs)	698.00	Flow (cfs)	0.07	696.96	0.96
Top Width (ft)	22.42	Top Width (ft)	0.66	20.04	1.72
Vel Total (ft/s)	14.58	Avg. Vel. (ft/s)	0.69	14.81	1.32

Max Chl Dpth (ft)	2.94	Hydr. Depth (ft)	0.16	2.35	0.42
Conv. Total (cfs)	7467.9	Conv. (cfs)	0.8	7456.8	10.3
Length Wtd. (ft)	130.06	Wetted Per. (ft)	0.74	21.11	1.91
Min Ch El (ft)	391.22	Shear (lb/sq ft)	0.08	1.22	0.21
Alpha	1.03	Stream Power (lb/ft s)	0.05	18.01	0.27
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	4.30	6.85	1.11
C & E Loss (ft)	0.21	Cum SA (acres)	2.77	1.84	1.03

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	398.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.00	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	394.48	Reach Len. (ft)	130.02	130.06	129.90
Crit W.S. (ft)	395.74	Flow Area (sq ft)	0.43	53.51	1.38
E.G. Slope (ft/ft)	0.008653	Area (sq ft)	0.43	53.51	1.38
Q Total (cfs)	862.00	Flow (cfs)	0.47	859.27	2.26
Top Width (ft)	23.74	Top Width (ft)	1.34	20.04	2.37
Vel Total (ft/s)	15.58	Avg. Vel. (ft/s)	1.10	16.06	1.63
Max Chl Dpth (ft)	3.26	Hydr. Depth (ft)	0.32	2.67	0.58
Conv. Total (cfs)	9266.7	Conv. (cfs)	5.0	9237.3	24.3
Length Wtd. (ft)	130.06	Wetted Per. (ft)	1.48	21.11	2.64
Min Ch El (ft)	391.22	Shear (lb/sq ft)	0.16	1.37	0.28
Alpha	1.06	Stream Power (lb/ft s)	0.17	21.99	0.46
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	5.91	7.88	1.84
C & E Loss (ft)	0.22	Cum SA (acres)	3.31	1.87	1.38

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	398.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.25	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	394.64	Reach Len. (ft)	130.02	130.06	129.90
Crit W.S. (ft)	395.99	Flow Area (sq ft)	0.68	56.79	1.80
E.G. Slope (ft/ft)	0.008511	Area (sq ft)	0.68	56.79	1.80
Q Total (cfs)	945.00	Flow (cfs)	0.83	941.07	3.10
Top Width (ft)	24.68	Top Width (ft)	1.81	20.04	2.83
Vel Total (ft/s)	15.95	Avg. Vel. (ft/s)	1.22	16.57	1.72
Max Chl Dpth (ft)	3.42	Hydr. Depth (ft)	0.37	2.83	0.64
Conv. Total (cfs)	10243.2	Conv. (cfs)	8.9	10200.6	33.7
Length Wtd. (ft)	130.05	Wetted Per. (ft)	1.98	21.11	3.13
Min Ch El (ft)	391.22	Shear (lb/sq ft)	0.18	1.43	0.31
Alpha	1.08	Stream Power (lb/ft s)	0.22	23.69	0.53
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	6.98	8.43	2.35
C & E Loss (ft)	0.29	Cum SA (acres)	3.58	1.88	1.61

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8329

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	404.45	.1	404.44	10.11	404	11.46	403.88	12.95	403.74
23.76	402.76	32.08	402	49.55	400.47	55.09	400	63.11	399.38
68.27	398.99	69.9	398.87	74.31	398.54	76.69	398.38	77.2	398.34
77.57	398.32	78.2	398.29	81.68	398	89.2	397.56	91.32	397.42
102.6	396.76	105.56	396.59	106.64	396.53	110.81	396.35	111.74	396.34
112.73	396.21	114.11	396.05	114.19	396.05	114.63	396	120.71	396
123.02	395.96	125.61	395.91	125.66	395.91	145.26	395.65	156.65	395.61
164.77	395.63	165.48	396.09	171.49	395.76	181.7	393.87	184.07	392.66
184.08	392.65	188.11	390.6	199.42	390.59	204.09	392.91	204.1	392.92
205.9	393.81	215.33	395.81	220.73	396.05	221.25	395.7	231.82	395.42
240.94	395.26	241.45	395.36	245.66	395.51	245.71	395.51	250.67	396
286.88	396	288.42	396.08	290.22	396.18	290.58	396.19	292.31	396.28
292.84	396.29	311.28	397.09	313.1	397.11	313.59	397.13	315.42	397.14
315.88	397.16	354.04	398	363.84	398	390.19	399.04	413.91	400
415.45	400	418.67	400.26	421.83	400.42	424.26	400.59	428.97	400.87

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	171.49	.055	184.08	.016	204.09	.055	215.33	.025
241.45	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
184.08	204.09	163	162.96	163.01	.1	.3

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	393.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.		0.016	
W.S. Elev (ft)	392.25	Reach Len. (ft)	163.00	162.96	163.01
Crit W.S. (ft)	392.43	Flow Area (sq ft)		24.13	
E.G. Slope (ft/ft)	0.005056	Area (sq ft)		24.13	
Q Total (cfs)	189.00	Flow (cfs)		189.00	
Top Width (ft)	17.89	Top Width (ft)		17.89	
Vel Total (ft/s)	7.83	Avg. Vel. (ft/s)		7.83	
Max Chl Dpth (ft)	1.66	Hydr. Depth (ft)		1.35	
Conv. Total (cfs)	2658.1	Conv. (cfs)		2658.1	
Length Wtd. (ft)	162.96	Wetted Per. (ft)		18.67	
Min Ch El (ft)	390.59	Shear (lb/sq ft)		0.41	
Alpha	1.00	Stream Power (lb/ft s)		3.20	
Frctn Loss (ft)	0.39	Cum Volume (acre-ft)	0.46	3.07	0.08
C & E Loss (ft)	0.07	Cum SA (acres)	0.92	1.61	0.12

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	394.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.61	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	393.02	Reach Len. (ft)	163.00	162.96	163.01
Crit W.S. (ft)	393.39	Flow Area (sq ft)	0.13	38.96	0.01
E.G. Slope (ft/ft)	0.005296	Area (sq ft)	0.13	38.96	0.01
Q Total (cfs)	397.00	Flow (cfs)	0.08	396.92	0.00
Top Width (ft)	20.93	Top Width (ft)	0.71	20.01	0.21
Vel Total (ft/s)	10.15	Avg. Vel. (ft/s)	0.58	10.19	0.25
Max Chl Dpth (ft)	2.43	Hydr. Depth (ft)	0.18	1.95	0.05
Conv. Total (cfs)	5455.4	Conv. (cfs)	1.0	5454.4	0.0
Length Wtd. (ft)	162.96	Wetted Per. (ft)	0.80	21.05	0.24
Min Ch El (ft)	390.59	Shear (lb/sq ft)	0.05	0.61	0.02
Alpha	1.01	Stream Power (lb/ft s)	0.03	6.24	0.00
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	1.62	4.70	0.34
C & E Loss (ft)	0.09	Cum SA (acres)	1.80	1.72	0.38

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	396.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.72	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	393.70	Reach Len. (ft)	163.00	162.96	163.01
Crit W.S. (ft)	394.48	Flow Area (sq ft)	1.07	52.56	0.62
E.G. Slope (ft/ft)	0.006002	Area (sq ft)	1.07	52.56	0.62
Q Total (cfs)	698.00	Flow (cfs)	1.34	696.02	0.65
Top Width (ft)	23.64	Top Width (ft)	2.04	20.01	1.58
Vel Total (ft/s)	12.87	Avg. Vel. (ft/s)	1.25	13.24	1.04
Max Chl Dpth (ft)	3.11	Hydr. Depth (ft)	0.52	2.63	0.39
Conv. Total (cfs)	9009.9	Conv. (cfs)	17.3	8984.3	8.3
Length Wtd. (ft)	162.96	Wetted Per. (ft)	2.30	21.05	1.77

Min Ch El (ft)	390.59	Shear (lb/sq ft)	0.17	0.94	0.13
Alpha	1.06	Stream Power (lb/ft s)	0.22	12.39	0.14
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	4.30	6.71	1.11
C & E Loss (ft)	0.15	Cum SA (acres)	2.77	1.78	1.03

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	396.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.03	Wt. n-Val.	0.048	0.016	0.044
W.S. Elev (ft)	395.91	Reach Len. (ft)	163.00	162.96	163.01
Crit W.S. (ft)	395.01	Flow Area (sq ft)	25.81	96.80	27.14
E.G. Slope (ft/ft)	0.001063	Area (sq ft)	25.81	96.80	27.14
Q Total (cfs)	862.00	Flow (cfs)	24.25	810.64	27.11
Top Width (ft)	117.11	Top Width (ft)	54.81	20.01	42.29
Vel Total (ft/s)	5.76	Avg. Vel. (ft/s)	0.94	8.37	1.00
Max Chl Dpth (ft)	5.32	Hydr. Depth (ft)	0.47	4.84	0.64
Conv. Total (cfs)	26436.8	Conv. (cfs)	743.6	24861.7	831.4
Length Wtd. (ft)	162.97	Wetted Per. (ft)	55.37	21.05	42.82
Min Ch El (ft)	390.59	Shear (lb/sq ft)	0.03	0.31	0.04
Alpha	1.99	Stream Power (lb/ft s)	0.03	2.56	0.04
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	5.87	7.65	1.80
C & E Loss (ft)	0.20	Cum SA (acres)	3.23	1.81	1.31

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	397.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.038	0.016	0.041
W.S. Elev (ft)	396.29	Reach Len. (ft)	163.00	162.96	163.01
Crit W.S. (ft)	395.26	Flow Area (sq ft)	51.69	104.46	56.11
E.G. Slope (ft/ft)	0.000871	Area (sq ft)	51.69	104.46	56.11
Q Total (cfs)	945.00	Flow (cfs)	57.58	832.95	54.47
Top Width (ft)	180.79	Top Width (ft)	71.98	20.01	88.80
Vel Total (ft/s)	4.45	Avg. Vel. (ft/s)	1.11	7.97	0.97
Max Chl Dpth (ft)	5.70	Hydr. Depth (ft)	0.72	5.22	0.63
Conv. Total (cfs)	32025.1	Conv. (cfs)	1951.4	28227.7	1845.9
Length Wtd. (ft)	162.97	Wetted Per. (ft)	72.61	21.05	89.39
Min Ch El (ft)	390.59	Shear (lb/sq ft)	0.04	0.27	0.03
Alpha	2.83	Stream Power (lb/ft s)	0.04	2.15	0.03
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	6.90	8.19	2.26
C & E Loss (ft)	0.16	Cum SA (acres)	3.47	1.82	1.47

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8166

INPUT

Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	407.18	10.95	406.06	11.43	406	24.94	404	31.24	403.5
51.13	402	58.41	401.57	61.68	401.44	67.96	401.12	70.57	401.01
75.8	400.78	92.43	400	95.26	399.73	97.88	399.5	116.77	398.02
123.11	397.34	130.08	396.64	136.18	396	143.43	395.41	151.49	394.83
156.8	394.67	157.23	394.43	167.2	394.49	175.42	394.64	175.99	395.07
182.18	394.56	192.61	393.19	195.6	391.81	195.62	391.81	199.52	390.01
209.72	389.9	215.63	392.6	216.91	393.19	226.27	394.79	232.22	395.11
232.69	394.84	241.53	394.73	249.43	394.38	250.11	394.19	251.06	394.19
251.58	394.34	263.46	394.7	306.44	396	310.24	396.14	314.3	396.27
317.64	396.36	320.99	396.42	337.89	397.34	339.6	397.39	346.22	398
352.09	399.29	355.26	400	359.79	401.05	364.78	402.01	371.43	402.81
372.98	402.97	381.44	403.94	381.92	404	395.38	404.92	403.91	405.1
407.31	405.27	413.83	405.43	427.96	406	430.31	406	432.23	406.23
432.81	406.28	436.23	406.7	436.99	406.75	439.03	407	441.12	407.13
448.98	408	457.02	408	458.29	408.06	474.42	408.42		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	156.8	.025	182.18	.055	195.6	.016	215.63	.055
226.27	.025	251.58	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
195.6	215.63	156.55	156.02	156.27	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
439.1	474.42	410

CROSS SECTION OUTPUT Profile #2-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	392.71	Element			
Vel Head (ft)	0.46	Wt. n-Val.	0.055	0.016	
W.S. Elev (ft)	392.26	Reach Len. (ft)	156.55	156.02	156.27
Crit W.S. (ft)	391.86	Flow Area (sq ft)	0.22	34.83	
E.G. Slope (ft/ft)	0.001648	Area (sq ft)	0.22	34.83	
Q Total (cfs)	189.00	Flow (cfs)	0.08	188.92	
Top Width (ft)	20.25	Top Width (ft)	0.97	19.28	
Vel Total (ft/s)	5.39	Avg. Vel. (ft/s)	0.38	5.42	
Max Chl Dpth (ft)	2.36	Hydr. Depth (ft)	0.22	1.81	
Conv. Total (cfs)	4655.3	Conv. (cfs)	2.0	4653.3	
Length Wtd. (ft)	156.02	Wetted Per. (ft)	1.07	20.19	
Min Ch El (ft)	389.90	Shear (lb/sq ft)	0.02	0.18	
Alpha	1.01	Stream Power (lb/ft s)	0.01	0.96	
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	0.46	2.96	0.08
C & E Loss (ft)	0.04	Cum SA (acres)	0.92	1.54	0.12

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	394.18	Element			
Vel Head (ft)	0.67	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	393.52	Reach Len. (ft)	156.55	156.02	156.27
Crit W.S. (ft)	392.84	Flow Area (sq ft)	3.45	59.94	1.11
E.G. Slope (ft/ft)	0.001240	Area (sq ft)	3.45	59.94	1.11
Q Total (cfs)	397.00	Flow (cfs)	2.32	394.18	0.51
Top Width (ft)	28.70	Top Width (ft)	5.48	20.03	3.19
Vel Total (ft/s)	6.16	Avg. Vel. (ft/s)	0.67	6.58	0.46
Max Chl Dpth (ft)	3.62	Hydr. Depth (ft)	0.63	2.99	0.35
Conv. Total (cfs)	11275.0	Conv. (cfs)	65.8	11194.8	14.3
Length Wtd. (ft)	156.02	Wetted Per. (ft)	5.81	21.01	3.35
Min Ch El (ft)	389.90	Shear (lb/sq ft)	0.05	0.22	0.03
Alpha	1.13	Stream Power (lb/ft s)	0.03	1.45	0.01
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	1.61	4.52	0.34
C & E Loss (ft)	0.06	Cum SA (acres)	1.79	1.65	0.38

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross

sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	395.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.	0.042	0.016	0.043
W.S. Elev (ft)	395.22	Reach Len. (ft)	156.55	156.02	156.27
Crit W.S. (ft)	393.94	Flow Area (sq ft)	41.83	94.10	40.40
E.G. Slope (ft/ft)	0.000697	Area (sq ft)	41.83	94.10	40.40
Q Total (cfs)	698.00	Flow (cfs)	41.19	626.73	30.08
Top Width (ft)	134.72	Top Width (ft)	49.57	20.03	65.12
Vel Total (ft/s)	3.96	Avg. Vel. (ft/s)	0.98	6.66	0.74
Max Chl Dpth (ft)	5.32	Hydr. Depth (ft)	0.84	4.70	0.62
Conv. Total (cfs)	26444.4	Conv. (cfs)	1560.5	23744.2	1139.7
Length Wtd. (ft)	156.05	Wetted Per. (ft)	50.21	21.01	65.54
Min Ch El (ft)	389.90	Shear (lb/sq ft)	0.04	0.19	0.03
Alpha	2.55	Stream Power (lb/ft s)	0.04	1.30	0.02
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	4.21	6.43	1.03
C & E Loss (ft)	0.11	Cum SA (acres)	2.67	1.71	0.90

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	396.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.038	0.016	0.041
W.S. Elev (ft)	396.26	Reach Len. (ft)	156.55	156.02	156.27
Crit W.S. (ft)	395.01	Flow Area (sq ft)	99.80	114.80	125.18
E.G. Slope (ft/ft)	0.000374	Area (sq ft)	99.80	114.80	125.18
Q Total (cfs)	862.00	Flow (cfs)	112.63	639.64	109.73
Top Width (ft)	180.14	Top Width (ft)	61.86	20.03	98.24
Vel Total (ft/s)	2.54	Avg. Vel. (ft/s)	1.13	5.57	0.88
Max Chl Dpth (ft)	6.36	Hydr. Depth (ft)	1.61	5.73	1.27
Conv. Total (cfs)	44567.8	Conv. (cfs)	5823.3	33071.1	5673.4
Length Wtd. (ft)	156.08	Wetted Per. (ft)	62.55	21.01	98.67
Min Ch El (ft)	389.90	Shear (lb/sq ft)	0.04	0.13	0.03
Alpha	3.62	Stream Power (lb/ft s)	0.04	0.71	0.03
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	5.63	7.26	1.52
C & E Loss (ft)	0.16	Cum SA (acres)	3.01	1.74	1.05

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	396.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.	0.038	0.016	0.041
W.S. Elev (ft)	396.57	Reach Len. (ft)	156.55	156.02	156.27
Crit W.S. (ft)	395.30	Flow Area (sq ft)	119.86	121.14	158.08
E.G. Slope (ft/ft)	0.000336	Area (sq ft)	119.86	121.14	158.08
Q Total (cfs)	945.00	Flow (cfs)	139.88	662.82	142.30
Top Width (ft)	193.07	Top Width (ft)	64.88	20.03	108.17
Vel Total (ft/s)	2.37	Avg. Vel. (ft/s)	1.17	5.47	0.90
Max Chl Dpth (ft)	6.67	Hydr. Depth (ft)	1.85	6.05	1.46
Conv. Total (cfs)	51568.2	Conv. (cfs)	7633.1	36169.9	7765.2
Length Wtd. (ft)	156.09	Wetted Per. (ft)	65.58	21.01	108.60
Min Ch El (ft)	389.90	Shear (lb/sq ft)	0.04	0.12	0.03
Alpha	3.80	Stream Power (lb/ft s)	0.04	0.66	0.03
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	6.58	7.77	1.86

C & E Loss (ft)	0.11	Cum SA (acres)	3.22	1.75	1.10	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 8010

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.55	7.4	402.14	36.62	400	58.24	398	76.34	397.19
80.9	397.04	106.18	396	109.51	395.67	113.88	395.49	116.92	395.3
123.63	395.35	126.43	395.11	130.93	395.1	131.95	395.05	137.04	395.1
139.18	395.28	143.21	395.28	150.26	396	167.06	396	172.85	395.46
177.16	395.09	177.83	394.49	188.81	394.76	196.75	394.99	197.4	395.47
203.61	395.65	210.06	395.31	215.11	392.67	215.13	392.66	218.44	390.93
224.05	389.05	227.47	388.95	234.6	391.6	235.2	391.88	241.59	394.82
247.16	395.46	254.01	395.47	254.7	394.99	273.39	394.47	274.44	394.98
276.64	395.3	280.47	395.38	285.76	395.58	293.73	391.98	300.77	390
303.67	390	307.27	390.56	313.51	392	315.93	392.9	318.7	394
327.82	395.21	342.23	397.21	347.44	398	348.71	398.27	358.84	400
372.9	401.61	377.47	402	379.02	402.29	380.27	402.43	382.86	402.88
384.55	403.06	385.41	403.22	389.98	403.8	394.72	404.54	404.52	406
423.74	408	438.67	410	439.79	410	449.95	410.67	481.28	412.56

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	177.16	.025	210.06	.055	218.44	.016	234.6	.055
247.16	.025	280.47	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
218.44	234.6	48.73	88.82	110.46	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
285.69	330.5	395.58	F

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	392.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.81	Wt. n-Val.	0.055	0.016	
W.S. Elev (ft)	391.52	Reach Len. (ft)	48.73	88.82	110.46
Crit W.S. (ft)	391.52	Flow Area (sq ft)	0.33	26.06	
E.G. Slope (ft/ft)	0.003365	Area (sq ft)	0.33	26.06	14.95
Q Total (cfs)	189.00	Flow (cfs)	0.21	188.79	
Top Width (ft)	33.12	Top Width (ft)	1.13	15.94	16.05
Vel Total (ft/s)	7.16	Avg. Vel. (ft/s)	0.64	7.24	
Max Chl Dpth (ft)	2.57	Hydr. Depth (ft)	0.29	1.63	
Conv. Total (cfs)	3258.1	Conv. (cfs)	3.6	3254.5	
Length Wtd. (ft)	88.80	Wetted Per. (ft)	1.27	16.71	
Min Ch El (ft)	388.95	Shear (lb/sq ft)	0.05	0.33	
Alpha	1.02	Stream Power (lb/ft s)	0.04	2.37	
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	0.46	2.85	0.05
C & E Loss (ft)	0.23	Cum SA (acres)	0.91	1.47	0.09

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	393.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.29	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	392.57	Reach Len. (ft)	48.73	88.82	110.46
Crit W.S. (ft)	392.57	Flow Area (sq ft)	2.57	43.02	1.01
E.G. Slope (ft/ft)	0.002797	Area (sq ft)	2.57	43.02	36.67
Q Total (cfs)	397.00	Flow (cfs)	2.96	393.20	0.83
Top Width (ft)	44.00	Top Width (ft)	3.13	16.16	24.71
Vel Total (ft/s)	8.52	Avg. Vel. (ft/s)	1.15	9.14	0.82
Max Chl Dpth (ft)	3.62	Hydr. Depth (ft)	0.82	2.66	0.48
Conv. Total (cfs)	7506.9	Conv. (cfs)	56.0	7435.1	15.8
Length Wtd. (ft)	88.69	Wetted Per. (ft)	3.54	16.94	2.31
Min Ch El (ft)	388.95	Shear (lb/sq ft)	0.13	0.44	0.08
Alpha	1.14	Stream Power (lb/ft s)	0.15	4.05	0.06
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	1.60	4.33	0.27
C & E Loss (ft)	0.37	Cum SA (acres)	1.77	1.58	0.33

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	395.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.77	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	393.79	Reach Len. (ft)	48.73	88.82	110.46
Crit W.S. (ft)	393.79	Flow Area (sq ft)	7.84	62.80	5.21
E.G. Slope (ft/ft)	0.002364	Area (sq ft)	7.84	62.80	72.14
Q Total (cfs)	698.00	Flow (cfs)	12.07	679.12	6.81
Top Width (ft)	54.85	Top Width (ft)	5.48	16.16	33.22
Vel Total (ft/s)	9.20	Avg. Vel. (ft/s)	1.54	10.81	1.31
Max Chl Dpth (ft)	4.84	Hydr. Depth (ft)	1.43	3.89	1.09
Conv. Total (cfs)	14355.5	Conv. (cfs)	248.1	13967.3	140.1
Length Wtd. (ft)	88.57	Wetted Per. (ft)	6.18	16.94	5.24
Min Ch El (ft)	388.95	Shear (lb/sq ft)	0.19	0.55	0.15
Alpha	1.34	Stream Power (lb/ft s)	0.29	5.92	0.19
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	4.13	6.15	0.83
C & E Loss (ft)	0.51	Cum SA (acres)	2.57	1.64	0.73

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	396.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.99	Wt. n-Val.	0.055	0.016	0.055
W.S. Elev (ft)	394.37	Reach Len. (ft)	48.73	88.82	110.46
Crit W.S. (ft)	394.37	Flow Area (sq ft)	11.30	72.08	8.30
E.G. Slope (ft/ft)	0.002233	Area (sq ft)	11.30	72.08	92.70
Q Total (cfs)	862.00	Flow (cfs)	19.10	830.58	12.32
Top Width (ft)	61.76	Top Width (ft)	6.58	16.16	39.02
Vel Total (ft/s)	9.40	Avg. Vel. (ft/s)	1.69	11.52	1.49
Max Chl Dpth (ft)	5.42	Hydr. Depth (ft)	1.72	4.46	1.38
Conv. Total (cfs)	18240.3	Conv. (cfs)	404.1	17575.4	260.8
Length Wtd. (ft)	88.52	Wetted Per. (ft)	7.42	16.94	6.61
Min Ch El (ft)	388.95	Shear (lb/sq ft)	0.21	0.59	0.17
Alpha	1.45	Stream Power (lb/ft s)	0.36	6.83	0.26
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	5.43	6.92	1.13
C & E Loss (ft)	0.57	Cum SA (acres)	2.89	1.67	0.80

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	396.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.43	Wt. n-Val.	0.045	0.016	0.041
W.S. Elev (ft)	395.28	Reach Len. (ft)	48.73	88.82	110.46
Crit W.S. (ft)	395.28	Flow Area (sq ft)	31.32	86.77	26.47
E.G. Slope (ft/ft)	0.001317	Area (sq ft)	31.32	86.77	144.92
Q Total (cfs)	945.00	Flow (cfs)	43.11	868.81	33.08
Top Width (ft)	136.26	Top Width (ft)	45.09	16.16	75.00
Vel Total (ft/s)	6.54	Avg. Vel. (ft/s)	1.38	10.01	1.25
Max Chl Dpth (ft)	6.33	Hydr. Depth (ft)	0.69	5.37	0.80
Conv. Total (cfs)	26042.0	Conv. (cfs)	1187.9	23942.3	911.7
Length Wtd. (ft)	88.27	Wetted Per. (ft)	46.51	16.94	34.11
Min Ch El (ft)	388.95	Shear (lb/sq ft)	0.06	0.42	0.06
Alpha	2.16	Stream Power (lb/ft s)	0.08	4.22	0.08
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	6.31	7.40	1.31
C & E Loss (ft)	0.41	Cum SA (acres)	3.02	1.68	0.77

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7921

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.27	2.35	402.24	9.791	402.05	10.85	402	23.33	401.47
24.1	401.44	27.359	401.31	30.169	401.2	32.12	401.15	36.661	401.01
38.26	400.95	41.05	400.83	41.66	400.81	44.821	400.66	48.42	400.48
48.82	400.46	50.4	400.37	53.99	400.16	56.46	400	70.05	398.87
80.48	398	83.88	397.75	84.921	397.69	92.06	397.18	95.78	397
101.939	396.67	104.071	396.53	114.28	396	117.76	395.27	119.5	394.95
120.43	394.79	123.54	394.3	125.569	394	134.729	392.71	138.15	392.29
140.39	392	165.141	392	168.489	393.04	169.81	393.46	171.331	394
172.39	394.09	179.24	395.77	183.72	396.33	184.119	396.38	195.251	395.89
202.88	395.48	203.821	394.92	215.26	395.27	224.99	395.56	225.749	395.99
232.649	396.14	238.38	397.12	239.001	397.24	239.31	394.03	244.85	391.38
248.52	389.63	258.969	388.63	274.93	387.21	296.02	387.72	304.269	388.31
304.291	388.31	316.379	389.18	330.869	391.74	340.26	394.76	347.339	397.29
351.54	397.3	361.79	398.12	375.83	398.18	383.29	398.14	384.03	397.63
396.439	397.32	411.59	396.99	412.44	397.58	415.27	397.7	420.29	397.87
432.07	398.45								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	202.88	.025	232.649	.055	248.52	.016	316.379	.075
375.83	.025	420.29	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
248.52	316.379	168.2	186.1	189.78	.3	.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
107.24	184.19	396.379	F
184.19	247.999	397.12	F
317	432.07	397.12	F

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	389.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.055	0.016	0.075
W.S. Elev (ft)	389.95	Reach Len. (ft)	168.20	186.10	189.78
Crit W.S. (ft)	388.55	Flow Area (sq ft)	0.10	123.66	0.44
E.G. Slope (ft/ft)	0.000122	Area (sq ft)	0.10	123.66	1.66
Q Total (cfs)	189.00	Flow (cfs)	0.01	188.91	0.08
Top Width (ft)	72.86	Top Width (ft)	0.66	67.86	4.33
Vel Total (ft/s)	1.52	Avg. Vel. (ft/s)	0.09	1.53	0.17
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)	0.19	1.82	0.71
Conv. Total (cfs)	17112.8	Conv. (cfs)	0.8	17105.1	6.9
Length Wtd. (ft)	186.10	Wetted Per. (ft)	0.58	68.03	0.63

Min Ch El (ft)	387.21	Shear (lb/sq ft)	0.00	0.01	0.01
Alpha	1.01	Stream Power (lb/ft s)	0.00	0.02	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	0.46	2.70	0.03
C & E Loss (ft)		Cum SA (acres)	0.91	1.39	0.07

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	391.33	Element			
Vel Head (ft)	0.05	Wt. n-Val.	0.055	0.016	0.075
W.S. Elev (ft)	391.28	Reach Len. (ft)	168.20	186.10	189.78
Crit W.S. (ft)	389.09	Flow Area (sq ft)	0.79	213.94	1.27
E.G. Slope (ft/ft)	0.000086	Area (sq ft)	2.84	213.94	12.44
Q Total (cfs)	397.00	Flow (cfs)	0.25	396.38	0.37
Top Width (ft)	83.18	Top Width (ft)	3.45	67.86	11.87
Vel Total (ft/s)	1.84	Avg. Vel. (ft/s)	0.31	1.85	0.29
Max Chl Dpth (ft)	4.07	Hydr. Depth (ft)	1.52	3.15	2.04
Conv. Total (cfs)	42714.6	Conv. (cfs)	26.5	42648.2	40.0
Length Wtd. (ft)	186.10	Wetted Per. (ft)	0.58	68.03	0.63
Min Ch El (ft)	387.21	Shear (lb/sq ft)	0.01	0.02	0.01
Alpha	1.01	Stream Power (lb/ft s)	0.00	0.03	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	1.60	4.07	0.21
C & E Loss (ft)		Cum SA (acres)	1.77	1.50	0.28

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #50-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	393.08	Element			
Vel Head (ft)	0.07	Wt. n-Val.	0.055	0.016	0.075
W.S. Elev (ft)	393.01	Reach Len. (ft)	168.20	186.10	189.78
Crit W.S. (ft)	389.61	Flow Area (sq ft)	1.70	331.50	2.34
E.G. Slope (ft/ft)	0.000062	Area (sq ft)	42.56	331.50	39.43
Q Total (cfs)	698.00	Flow (cfs)	0.74	696.38	0.88
Top Width (ft)	129.15	Top Width (ft)	42.85	67.86	18.44
Vel Total (ft/s)	2.08	Avg. Vel. (ft/s)	0.44	2.10	0.37
Max Chl Dpth (ft)	5.80	Hydr. Depth (ft)	3.25	4.89	3.77
Conv. Total (cfs)	88694.1	Conv. (cfs)	94.0	88488.7	111.4
Length Wtd. (ft)	186.10	Wetted Per. (ft)	0.58	68.03	0.63
Min Ch El (ft)	387.21	Shear (lb/sq ft)	0.01	0.02	0.01
Alpha	1.02	Stream Power (lb/ft s)	0.00	0.04	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	4.10	5.75	0.69
C & E Loss (ft)		Cum SA (acres)	2.55	1.56	0.66

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #100-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	393.96	Element			
Vel Head (ft)	0.07	Wt. n-Val.	0.055	0.016	0.075
W.S. Elev (ft)	393.89	Reach Len. (ft)	168.20	186.10	189.78
Crit W.S. (ft)	389.84	Flow Area (sq ft)	2.15	391.11	2.89
E.G. Slope (ft/ft)	0.000054	Area (sq ft)	84.93	391.11	56.83
Q Total (cfs)	862.00	Flow (cfs)	1.03	859.80	1.16
Top Width (ft)	142.58	Top Width (ft)	53.55	67.86	21.17
Vel Total (ft/s)	2.18	Avg. Vel. (ft/s)	0.48	2.20	0.40
Max Chl Dpth (ft)	6.68	Hydr. Depth (ft)	4.13	5.76	4.65
Conv. Total (cfs)	116865.3	Conv. (cfs)	139.9	116567.5	157.9
Length Wtd. (ft)	186.10	Wetted Per. (ft)	0.58	68.03	0.63
Min Ch El (ft)	387.21	Shear (lb/sq ft)	0.01	0.02	0.02
Alpha	1.02	Stream Power (lb/ft s)	0.01	0.04	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	5.38	6.45	0.94
C & E Loss (ft)		Cum SA (acres)	2.85	1.58	0.73

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	394.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.055	0.016	0.075
W.S. Elev (ft)	394.34	Reach Len. (ft)	168.20	186.10	189.78
Crit W.S. (ft)	389.94	Flow Area (sq ft)	2.39	421.83	3.17
E.G. Slope (ft/ft)	0.000051	Area (sq ft)	110.57	421.83	66.73
Q Total (cfs)	945.00	Flow (cfs)	1.19	942.50	1.31
Top Width (ft)	149.79	Top Width (ft)	59.36	67.86	22.57
Vel Total (ft/s)	2.21	Avg. Vel. (ft/s)	0.50	2.23	0.41
Max Chl Dpth (ft)	7.13	Hydr. Depth (ft)	4.59	6.22	5.10
Conv. Total (cfs)	132575.1	Conv. (cfs)	166.4	132224.4	184.3
Length Wtd. (ft)	186.10	Wetted Per. (ft)	0.58	68.03	0.63
Min Ch El (ft)	387.21	Shear (lb/sq ft)	0.01	0.02	0.02
Alpha	1.02	Stream Power (lb/ft s)	0.01	0.04	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	6.23	6.88	1.05
C & E Loss (ft)		Cum SA (acres)	2.96	1.60	0.65

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CULVERT

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7800

INPUT
Description: N Chatham
Distance from Upstream XS = 26.8
Deck/Roadway Width = 53.5
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
238.39	397.12	347.339	397.29

Upstream Bridge Cross Section Data
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	402.27	2.35	402.24	9.791	402.05	10.85	402	23.33	401.47
24.1	401.44	27.359	401.31	30.169	401.2	32.12	401.15	36.661	401.01
38.26	400.95	41.05	400.83	41.66	400.81	44.821	400.66	48.42	400.48
48.82	400.46	50.4	400.37	53.99	400.16	56.46	400	70.05	398.87
80.48	398	83.88	397.75	84.921	397.69	92.06	397.18	95.78	397
101.939	396.67	104.071	396.53	114.28	396	117.76	395.27	119.5	394.95
120.43	394.79	123.54	394.3	125.569	394	134.729	392.71	138.15	392.29
140.39	392	165.141	392	168.489	393.04	169.81	393.46	171.331	394
172.39	394.09	179.24	395.77	183.72	396.33	184.119	396.38	195.251	395.89
202.88	395.48	203.821	394.92	215.26	395.27	224.99	395.56	225.749	395.99
232.649	396.14	238.38	397.12	239.001	397.24	239.31	394.03	244.85	391.38
248.52	389.63	258.969	388.63	274.93	387.21	296.02	387.72	304.269	388.31
304.291	388.31	316.379	389.18	330.869	391.74	340.26	394.76	347.339	397.29
351.54	397.3	361.79	398.12	375.83	398.18	383.29	398.14	384.03	397.63
396.439	397.32	411.59	396.99	412.44	397.58	415.27	397.7	420.29	397.87
432.07	398.45								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	202.88	.025	232.649	.055	248.52	.016	316.379	.075
375.83	.025	420.29	.065						

Bank Sta: Left	Right	Coeff Contr.	Expan.
248.52	316.379	.3	.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
107.24	184.19	396.379	F
184.19	247.999	397.12	F
317	432.07	397.12	F

```
Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   62.45  396.84          215.18  395.36

Downstream Bridge Cross Section Data
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   396.3  17.789  396.58  44.541  396.75   56.45  397.15   62.45  396.84
  74.231  392.93   81.72  390.86   91.42  389.84 100.099  389.46 100.109  389.46
  111.61  388.95  133.43  388.16  148.98  387.75 150.921   386.4  159.56  386.53
  161.02  387.98  166.33  387.83  177.83  388.51  179.97  388.75  186.19  389.45
  198.02  393.01  215.18  395.36  227.49   394.9 228.299  394.28 238.979  394.39
 254.491   394.4 272.221  394.34 289.779  393.96     306  393.51  306.75  394.09
  309.11  394.26  310.38  394.33  310.44  394.34  310.51  394.34 324.131  394.65
 362.239     396  364.63  396.25  381.06     398  387.94  398.65  402.16     400

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .075  133.43     .04  177.83    .055  227.49    .025  310.38    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        133.43  215.18            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     130  395.36       F
     179  402.16  395.36       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #1     Pipe Arch     6.5    9.23
FHWA Chart # 36- 31 inch corner radius; Corrugated metal
FHWA Scale # 2 - No bevels
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                12     110     .024     .024        0                  .9                1
Upstream   Elevation =  387.69
           Centerline Station =  274
Downstream Elevation =  387.21
           Centerline Station =  150

Culvert Name     Shape      Rise    Span
Culvert #2     Pipe Arch     6.5    9.23
FHWA Chart # 36- 31 inch corner radius; Corrugated metal
FHWA Scale # 2 - No bevels
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                12     110     .024     .024        0                  .9                1
Upstream   Elevation =  387.1
           Centerline Station =  284
Downstream Elevation =  386.26
           Centerline Station =  160

CULVERT OUTPUT  Profile #2-YR  Culv Group:  Culvert #1

  Q Culv Group (cfs)         78.48    Culv Full Len (ft)
  # Barrels                     1     Culv Vel US (ft/s)          3.57
  Q Barrel (cfs)             78.48    Culv Vel DS (ft/s)          2.99
  E.G. US. (ft)             389.98    Culv Inv El Up (ft)       387.69
  W.S. US. (ft)             389.95    Culv Inv El Dn (ft)       387.21
  E.G. DS (ft)              389.55    Culv Frctn Ls (ft)          0.00
  W.S. DS (ft)              389.48    Culv Exit Loss (ft)         0.06
  Delta EG (ft)               0.43    Culv Entr Loss (ft)         0.18
  Delta WS (ft)               0.47    Q Weir (cfs)
  E.G. IC (ft)              389.51    Weir Sta Lft (ft)
```

E.G. OC (ft)	389.99	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.62	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.48	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.62	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.32	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #1

Q Culv Group (cfs)	176.06	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.21
Q Barrel (cfs)	176.06	Culv Vel DS (ft/s)	4.80
E.G. US. (ft)	391.33	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	391.28	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	390.44	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	390.28	Culv Exit Loss (ft)	0.20
Delta EG (ft)	0.89	Culv Entr Loss (ft)	0.38
Delta WS (ft)	1.00	Q Weir (cfs)	
E.G. IC (ft)	390.65	Weir Sta Lft (ft)	
E.G. OC (ft)	391.34	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.54	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.28	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.61	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.00	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #1

Q Culv Group (cfs)	324.96	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	6.73
Q Barrel (cfs)	324.96	Culv Vel DS (ft/s)	6.72
E.G. US. (ft)	393.08	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	393.01	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	391.54	Culv Frctn Ls (ft)	0.34
W.S. DS (ft)	391.28	Culv Exit Loss (ft)	0.44
Delta EG (ft)	1.54	Culv Entr Loss (ft)	0.63
Delta WS (ft)	1.73	Q Weir (cfs)	
E.G. IC (ft)	392.16	Weir Sta Lft (ft)	
E.G. OC (ft)	393.09	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.28	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.02	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.97	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #1

Q Culv Group (cfs)	407.19	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.57
Q Barrel (cfs)	407.19	Culv Vel DS (ft/s)	7.78
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	393.89	Culv Inv El Dn (ft)	387.21
E.G. DS (ft)	391.98	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	391.66	Culv Exit Loss (ft)	0.62
Delta EG (ft)	1.98	Culv Entr Loss (ft)	0.80
Delta WS (ft)	2.23	Q Weir (cfs)	
E.G. IC (ft)	392.92	Weir Sta Lft (ft)	
E.G. OC (ft)	393.98	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	392.29	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.66	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.99	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.26	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #1

Q Culv Group (cfs)	447.66	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.94
Q Barrel (cfs)	447.66	Culv Vel DS (ft/s)	8.26
E.G. US. (ft)	394.42	Culv Inv El Up (ft)	387.69
W.S. US. (ft)	394.34	Culv Inv El Dn (ft)	387.21

E.G. DS (ft)	392.20	Culv Frctn Ls (ft)	0.18
W.S. DS (ft)	391.85	Culv Exit Loss (ft)	0.71
Delta EG (ft)	2.22	Culv Entr Loss (ft)	0.88
Delta WS (ft)	2.49	Q Weir (cfs)	
E.G. IC (ft)	393.32	Weir Sta Lft (ft)	
E.G. OC (ft)	394.42	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	392.56	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.85	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	5.81	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.45	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #2-YR Culv Group: Culvert #2

Q Culv Group (cfs)	110.52	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	3.92
Q Barrel (cfs)	110.52	Culv Vel DS (ft/s)	2.85
E.G. US. (ft)	389.98	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	389.95	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	389.55	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	389.48	Culv Exit Loss (ft)	0.05
Delta EG (ft)	0.43	Culv Entr Loss (ft)	0.22
Delta WS (ft)	0.47	Q Weir (cfs)	
E.G. IC (ft)	389.31	Weir Sta Lft (ft)	
E.G. OC (ft)	389.98	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	389.52	Weir Max Depth (ft)	
Culv WS Outlet (ft)	389.48	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.68	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.58	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #10-YR Culv Group: Culvert #2

Q Culv Group (cfs)	220.94	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.53
Q Barrel (cfs)	220.94	Culv Vel DS (ft/s)	4.62
E.G. US. (ft)	391.33	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	391.28	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	390.44	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	390.28	Culv Exit Loss (ft)	0.17
Delta EG (ft)	0.89	Culv Entr Loss (ft)	0.43
Delta WS (ft)	1.00	Q Weir (cfs)	
E.G. IC (ft)	390.54	Weir Sta Lft (ft)	
E.G. OC (ft)	391.32	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	390.42	Weir Max Depth (ft)	
Culv WS Outlet (ft)	390.28	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.53	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.30	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #50-YR Culv Group: Culvert #2

Q Culv Group (cfs)	373.04	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.06
Q Barrel (cfs)	373.04	Culv Vel DS (ft/s)	6.46
E.G. US. (ft)	393.08	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	393.01	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	391.54	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	391.28	Culv Exit Loss (ft)	0.39
Delta EG (ft)	1.54	Culv Entr Loss (ft)	0.70
Delta WS (ft)	1.73	Q Weir (cfs)	
E.G. IC (ft)	392.00	Weir Sta Lft (ft)	
E.G. OC (ft)	393.07	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	391.60	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.28	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.60	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.22	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #100-YR Culv Group: Culvert #2

Q Culv Group (cfs)	454.81	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	7.88
Q Barrel (cfs)	454.81	Culv Vel DS (ft/s)	7.44
E.G. US. (ft)	393.96	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	393.89	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	391.98	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	391.66	Culv Exit Loss (ft)	0.54
Delta EG (ft)	1.98	Culv Entr Loss (ft)	0.87
Delta WS (ft)	2.23	Q Weir (cfs)	
E.G. IC (ft)	392.79	Weir Sta Lft (ft)	
E.G. OC (ft)	393.95	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	392.11	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.66	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.23	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.49	Min El Weir Flow (ft)	396.38

CULVERT OUTPUT Profile #7-30-2016 Culv Group: Culvert #2

Q Culv Group (cfs)	497.34	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	8.25
Q Barrel (cfs)	497.34	Culv Vel DS (ft/s)	7.93
E.G. US. (ft)	394.42	Culv Inv El Up (ft)	387.10
W.S. US. (ft)	394.34	Culv Inv El Dn (ft)	386.26
E.G. DS (ft)	392.20	Culv Frctn Ls (ft)	0.00
W.S. DS (ft)	391.85	Culv Exit Loss (ft)	0.63
Delta EG (ft)	2.22	Culv Entr Loss (ft)	0.95
Delta WS (ft)	2.49	Q Weir (cfs)	
E.G. IC (ft)	393.21	Weir Sta Lft (ft)	
E.G. OC (ft)	394.41	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	392.40	Weir Max Depth (ft)	
Culv WS Outlet (ft)	391.85	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.58	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.71	Min El Weir Flow (ft)	396.38

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7735

INPUT
Description:
Station Elevation Data   num=   40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.3	17.789	396.58	44.541	396.75	56.45	397.15	62.45	396.84
74.231	392.93	81.72	390.86	91.42	389.84	100.099	389.46	100.109	389.46
111.61	388.95	133.43	388.16	148.98	387.75	150.921	386.4	159.56	386.53
161.02	387.98	166.33	387.83	177.83	388.51	179.97	388.75	186.19	389.45
198.02	393.01	215.18	395.36	227.49	394.9	228.299	394.28	238.979	394.39
254.491	394.4	272.221	394.34	289.779	393.96	306	393.51	306.75	394.09
309.11	394.26	310.38	394.33	310.44	394.34	310.51	394.34	324.131	394.65
362.239	396	364.63	396.25	381.06	398	387.94	398.65	402.16	400

Manning's n Values   num=   5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.075	133.43	.04	177.83	.055	227.49	.025	310.38	.065

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
133.43	215.18	142.82	90.04	69.09	.3	.5

Ineffective Flow   num=   2

Sta L	Sta R	Elev	Permanent
0	130	395.36	F
179	402.16	395.36	F

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	389.55	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.08	Wt. n-Val.	0.075	0.040		
W.S. Elev (ft)	389.48	Reach Len. (ft)	142.82	90.04	69.09	
Crit W.S. (ft)	388.48	Flow Area (sq ft)	4.30	81.98		
E.G. Slope (ft/ft)	0.001731	Area (sq ft)	23.22	85.08		

Q Total (cfs)	189.00	Flow (cfs)	4.12	184.88	
Top Width (ft)	86.54	Top Width (ft)	33.70	52.85	
Vel Total (ft/s)	2.19	Avg. Vel. (ft/s)	0.96	2.26	
Max Chl Dpth (ft)	3.08	Hydr. Depth (ft)	1.25	1.80	
Conv. Total (cfs)	4542.3	Conv. (cfs)	99.1	4443.2	
Length Wtd. (ft)	103.71	Wetted Per. (ft)	3.43	46.63	
Min Ch El (ft)	386.40	Shear (lb/sq ft)	0.14	0.19	
Alpha	1.04	Stream Power (lb/ft s)	0.13	0.43	
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	0.46	2.50	0.03
C & E Loss (ft)	0.02	Cum SA (acres)	0.85	1.13	0.06

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	390.44	Element			
Vel Head (ft)	0.16	Wt. n-Val.	0.075	0.040	
W.S. Elev (ft)	390.28	Reach Len. (ft)	142.82	90.04	69.09
Crit W.S. (ft)	389.00	Flow Area (sq ft)	7.04	118.39	
E.G. Slope (ft/ft)	0.002236	Area (sq ft)	56.17	128.37	
Q Total (cfs)	397.00	Flow (cfs)	10.65	386.35	
Top Width (ft)	101.65	Top Width (ft)	46.15	55.50	
Vel Total (ft/s)	3.16	Avg. Vel. (ft/s)	1.51	3.26	
Max Chl Dpth (ft)	3.88	Hydr. Depth (ft)	2.05	2.60	
Conv. Total (cfs)	8396.2	Conv. (cfs)	225.3	8171.0	
Length Wtd. (ft)	105.57	Wetted Per. (ft)	3.43	46.63	
Min Ch El (ft)	386.40	Shear (lb/sq ft)	0.29	0.35	
Alpha	1.04	Stream Power (lb/ft s)	0.43	1.16	
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	1.60	3.79	0.21
C & E Loss (ft)	0.02	Cum SA (acres)	1.67	1.23	0.25

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #50-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	391.54	Element			
Vel Head (ft)	0.26	Wt. n-Val.	0.075	0.040	
W.S. Elev (ft)	391.28	Reach Len. (ft)	142.82	90.04	69.09
Crit W.S. (ft)	389.60	Flow Area (sq ft)	10.49	164.22	
E.G. Slope (ft/ft)	0.002314	Area (sq ft)	106.86	185.86	
Q Total (cfs)	698.00	Flow (cfs)	21.06	676.94	
Top Width (ft)	112.08	Top Width (ft)	53.23	58.84	
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)	2.01	4.12	
Max Chl Dpth (ft)	4.88	Hydr. Depth (ft)	3.06	3.60	
Conv. Total (cfs)	14509.2	Conv. (cfs)	437.8	14071.4	
Length Wtd. (ft)	106.96	Wetted Per. (ft)	3.43	46.63	
Min Ch El (ft)	386.40	Shear (lb/sq ft)	0.44	0.51	
Alpha	1.04	Stream Power (lb/ft s)	0.89	2.10	
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	4.10	5.34	0.69
C & E Loss (ft)	0.00	Cum SA (acres)	2.36	1.28	0.62

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #100-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	391.98	Element			
Vel Head (ft)	0.32	Wt. n-Val.	0.075	0.040	
W.S. Elev (ft)	391.66	Reach Len. (ft)	142.82	90.04	69.09
Crit W.S. (ft)	389.87	Flow Area (sq ft)	11.79	181.52	
E.G. Slope (ft/ft)	0.002525	Area (sq ft)	127.33	208.43	
Q Total (cfs)	862.00	Flow (cfs)	26.74	835.26	
Top Width (ft)	114.71	Top Width (ft)	54.61	60.10	
Vel Total (ft/s)	4.46	Avg. Vel. (ft/s)	2.27	4.60	

Max Chl Dpth (ft)	5.26	Hydr. Depth (ft)	3.44	3.98	
Conv. Total (cfs)	17152.8	Conv. (cfs)	532.0	16620.8	
Length Wtd. (ft)	107.22	Wetted Per. (ft)	3.43	46.63	
Min Ch El (ft)	386.40	Shear (lb/sq ft)	0.54	0.61	
Alpha	1.04	Stream Power (lb/ft s)	1.23	2.82	
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	5.38	5.99	0.94
C & E Loss (ft)	0.01	Cum SA (acres)	2.64	1.31	0.68

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #7-30-2016

			Left OB	Channel	Right OB
E.G. Elev (ft)	392.20	Element			
Vel Head (ft)	0.35	Wt. n-Val.	0.075	0.040	
W.S. Elev (ft)	391.85	Reach Len. (ft)	142.82	90.04	69.09
Crit W.S. (ft)	390.00	Flow Area (sq ft)	12.44	190.15	
E.G. Slope (ft/ft)	0.002598	Area (sq ft)	137.75	219.89	
Q Total (cfs)	945.00	Flow (cfs)	29.66	915.34	
Top Width (ft)	116.03	Top Width (ft)	55.29	60.73	
Vel Total (ft/s)	4.66	Avg. Vel. (ft/s)	2.38	4.81	
Max Chl Dpth (ft)	5.45	Hydr. Depth (ft)	3.63	4.17	
Conv. Total (cfs)	18538.5	Conv. (cfs)	581.8	17956.8	
Length Wtd. (ft)	107.57	Wetted Per. (ft)	3.43	46.63	
Min Ch El (ft)	386.40	Shear (lb/sq ft)	0.59	0.66	
Alpha	1.04	Stream Power (lb/ft s)	1.40	3.18	
Frctn Loss (ft)	0.37	Cum Volume (acre-ft)	6.23	6.39	1.05
C & E Loss (ft)	0.00	Cum SA (acres)	2.74	1.32	0.60

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

LATERAL STRUCTURE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7717

INPUT
Description: N Chatham Overflow
Lateral structure position = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width = 2
Weir Coefficient = 2
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-50	395.36	39.54	393.75	124.15	392.21	186.01	391.2	247	390.9

Weir crest shape = Broad Crested

LATERAL STRUCTURE OUTPUT Profile #2-YR Lateral Structure

E.G. US. (ft)	389.55	Weir Sta US (ft)	
W.S. US. (ft)	389.47	Weir Sta DS (ft)	
E.G. DS (ft)	387.12	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	386.84	Wr Top Wdth (ft)	
Q US (cfs)	189.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	190.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			

Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #10-YR Lateral Structure

E.G. US. (ft)	390.44	Weir Sta US (ft)	
W.S. US. (ft)	390.27	Weir Sta DS (ft)	
E.G. DS (ft)	388.44	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	387.96	Wr Top Wdth (ft)	
Q US (cfs)	397.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	403.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #50-YR Lateral Structure

E.G. US. (ft)	391.54	Weir Sta US (ft)	
W.S. US. (ft)	391.28	Weir Sta DS (ft)	
E.G. DS (ft)	390.51	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.06	Wr Top Wdth (ft)	
Q US (cfs)	698.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	741.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Lateral Structure

E.G. US. (ft)	391.98	Weir Sta US (ft)	
W.S. US. (ft)	391.66	Weir Sta DS (ft)	
E.G. DS (ft)	390.84	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	390.18	Wr Top Wdth (ft)	
Q US (cfs)	862.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	927.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			

Breach SSL (ft)	
Breach SSR (ft)	

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Lateral Structure

E.G. US. (ft)	392.20	Weir Sta US (ft)	
W.S. US. (ft)	391.85	Weir Sta DS (ft)	
E.G. DS (ft)	390.91	Min El Weir Flow (ft)	390.90
W.S. DS (ft)	389.90	Wr Top Wdth (ft)	
Q US (cfs)	945.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	1058.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7645

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.02	4.94	394	10.64	393.74	10.96	393.73	15.06	393.54
15.59	393.52	17.34	393.44	18.71	393.39	49.35	392.967	57.1	392.86
66.29	390.32	73.25	388	111.39	387.95	114.49	386.68	118.37	386.41
125.33	389.1	143.93	391.75	153.06	392.71	168.44	393.75	177.22	393.47
177.5	393.47	223.31	393.03	223.82	393.02	233.1	393.29	233.46	393.29
236.26	393.4	238.69	393.5	238.95	393.5	244.54	393.77	244.67	393.77
245.96	393.83	247.21	393.88	251.47	394	254.69	394.09	255.85	394.13
255.98	394.14	257.17	394.2	257.4	394.22	257.65	394.24	258.72	394.31
259.55	394.37	260.71	394.46	261.77	394.54	264.41	394.72	281.83	396
291.62	396.82	297.74	397.33	301.31	397.63	305.66	398	307.68	398.37
308.27	398.49	309.55	398.75	313.77	399.57	315.97	400	317.17	400.15
321.34	400.67	323.25	400.9						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	49.35	.075	66.29	.055	111.39	.04	125.33	.055
177.22	.025	236.26	.065						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
111.39	168.44	85.44	84.61	84.17	.1	.3

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	389.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	389.12	Reach Len. (ft)	85.44	84.61	84.17
Crit W.S. (ft)	388.69	Flow Area (sq ft)	45.42	25.04	
E.G. Slope (ft/ft)	0.005233	Area (sq ft)	45.42	25.04	
Q Total (cfs)	190.00	Flow (cfs)	94.01	95.99	
Top Width (ft)	55.55	Top Width (ft)	41.49	14.06	
Vel Total (ft/s)	2.70	Avg. Vel. (ft/s)	2.07	3.83	
Max Chl Dpth (ft)	2.71	Hydr. Depth (ft)	1.09	1.78	
Conv. Total (cfs)	2626.5	Conv. (cfs)	1299.6	1326.9	
Length Wtd. (ft)	84.94	Wetted Per. (ft)	41.67	14.82	
Min Ch El (ft)	386.41	Shear (lb/sq ft)	0.36	0.55	
Alpha	1.31	Stream Power (lb/ft s)	0.74	2.12	

Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	0.34	2.39	0.03
C & E Loss (ft)	0.01	Cum SA (acres)	0.72	1.06	0.06

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	390.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	389.84	Reach Len. (ft)	85.44	84.61	84.17
Crit W.S. (ft)	389.18	Flow Area (sq ft)	76.39	37.13	
E.G. Slope (ft/ft)	0.005678	Area (sq ft)	76.39	37.13	
Q Total (cfs)	403.00	Flow (cfs)	224.76	178.24	
Top Width (ft)	62.84	Top Width (ft)	43.67	19.16	
Vel Total (ft/s)	3.55	Avg. Vel. (ft/s)	2.94	4.80	
Max Chl Dpth (ft)	3.43	Hydr. Depth (ft)	1.75	1.94	
Conv. Total (cfs)	5348.0	Conv. (cfs)	2982.7	2365.3	
Length Wtd. (ft)	84.99	Wetted Per. (ft)	43.97	19.98	
Min Ch El (ft)	386.41	Shear (lb/sq ft)	0.62	0.66	
Alpha	1.19	Stream Power (lb/ft s)	1.81	3.16	
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	1.38	3.62	0.21
C & E Loss (ft)	0.00	Cum SA (acres)	1.53	1.15	0.25

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	391.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.055	0.041	
W.S. Elev (ft)	390.96	Reach Len. (ft)	85.44	84.61	84.17
Crit W.S. (ft)	389.82	Flow Area (sq ft)	127.24	62.95	
E.G. Slope (ft/ft)	0.004235	Area (sq ft)	127.24	62.95	
Q Total (cfs)	741.00	Flow (cfs)	440.29	300.71	
Top Width (ft)	74.44	Top Width (ft)	47.43	27.01	
Vel Total (ft/s)	3.90	Avg. Vel. (ft/s)	3.46	4.78	
Max Chl Dpth (ft)	4.55	Hydr. Depth (ft)	2.68	2.33	
Conv. Total (cfs)	11387.1	Conv. (cfs)	6766.0	4621.1	
Length Wtd. (ft)	85.02	Wetted Per. (ft)	47.89	27.91	
Min Ch El (ft)	386.41	Shear (lb/sq ft)	0.70	0.60	
Alpha	1.08	Stream Power (lb/ft s)	2.43	2.85	
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	3.71	5.09	0.69
C & E Loss (ft)	0.01	Cum SA (acres)	2.20	1.20	0.62

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	391.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.	0.055	0.041	
W.S. Elev (ft)	391.33	Reach Len. (ft)	85.44	84.61	84.17
Crit W.S. (ft)	390.10	Flow Area (sq ft)	144.73	73.24	
E.G. Slope (ft/ft)	0.004476	Area (sq ft)	144.73	73.24	
Q Total (cfs)	927.00	Flow (cfs)	555.59	371.41	
Top Width (ft)	78.31	Top Width (ft)	48.74	29.57	
Vel Total (ft/s)	4.25	Avg. Vel. (ft/s)	3.84	5.07	
Max Chl Dpth (ft)	4.92	Hydr. Depth (ft)	2.97	2.48	
Conv. Total (cfs)	13855.8	Conv. (cfs)	8304.3	5551.5	
Length Wtd. (ft)	85.03	Wetted Per. (ft)	49.25	30.48	
Min Ch El (ft)	386.41	Shear (lb/sq ft)	0.82	0.67	
Alpha	1.06	Stream Power (lb/ft s)	3.15	3.40	
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	4.93	5.70	0.94
C & E Loss (ft)	0.01	Cum SA (acres)	2.47	1.22	0.68

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	391.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.055	0.042	
W.S. Elev (ft)	391.49	Reach Len. (ft)	85.44	84.61	84.17
Crit W.S. (ft)	390.30	Flow Area (sq ft)	152.65	78.11	
E.G. Slope (ft/ft)	0.004955	Area (sq ft)	152.65	78.11	
Q Total (cfs)	1058.00	Flow (cfs)	635.74	422.26	
Top Width (ft)	80.03	Top Width (ft)	49.33	30.70	
Vel Total (ft/s)	4.58	Avg. Vel. (ft/s)	4.16	5.41	
Max Chl Dpth (ft)	5.08	Hydr. Depth (ft)	3.09	2.54	
Conv. Total (cfs)	15029.9	Conv. (cfs)	9031.3	5998.7	
Length Wtd. (ft)	85.03	Wetted Per. (ft)	49.86	31.63	
Min Ch El (ft)	386.41	Shear (lb/sq ft)	0.95	0.76	

Alpha	1.05	Stream Power (lb/ft s)	3.94	4.13	
Frctn Loss (ft)	0.37	Cum Volume (acre-ft)	5.75	6.08	1.05
C & E Loss (ft)	0.01	Cum SA (acres)	2.57	1.23	0.60

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7560

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398	13.16	398	16.3	397.86	18.69	397.75	21.57	397.62
52.62	396	54.72	396	77.17	394	88.58	392.95	92.96	392.55
99.27	392.07	99.47	392.05	100.16	392	114.95	390.39	115.47	390.33
122.74	389.56	127.42	388	155.89	387.17	158.89	386.17	161.21	385.7
165.61	386.15	180.17	388.9	196.18	390.45	213.33	392.2	229.1	392.21
233.65	391.75	234.4	391.16	235.56	391.26	237.87	391.3	278.66	391.93
278.71	391.92	279.16	391.98	279.36	392	282.97	392	285.84	391.69
286.14	391.65	288.03	391.47	288.42	391.42	290.38	391.27	290.86	391.23
293.03	391.1	293.77	391.08	295.03	391.06	295.75	391.07	296.26	391.1
297	391.13	297.79	391.21	298.72	391.34	299.12	391.38	300.22	391.58
301.48	391.83	302.25	392	303.24	392.23	305.23	392.71	308.78	393.64
309.52	393.84	310.08	394	324.25	395.81	325.8	396	345.06	398
345.97	398.2	346.5	398.32	349.1	398.9	354.1	400	361.13	401.05
366.82	402								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.065	122.74	.055	155.89	.04	180.17	.055	234.4	.025
278.71	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
155.89	213.33	62.59	61.86	60.62	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
282.96	302.26	392	T

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	32.9	400

CROSS SECTION OUTPUT Profile #2-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	388.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	388.80	Reach Len. (ft)	62.59	61.86	60.62
Crit W.S. (ft)	388.08	Flow Area (sq ft)	35.40	44.16	
E.G. Slope (ft/ft)	0.002956	Area (sq ft)	35.40	44.16	
Q Total (cfs)	190.00	Flow (cfs)	56.82	133.18	
Top Width (ft)	54.58	Top Width (ft)	30.86	23.73	
Vel Total (ft/s)	2.39	Avg. Vel. (ft/s)	1.60	3.02	
Max Chl Dpth (ft)	3.10	Hydr. Depth (ft)	1.15	1.86	
Conv. Total (cfs)	3494.9	Conv. (cfs)	1045.2	2449.7	
Length Wtd. (ft)	62.01	Wetted Per. (ft)	31.00	24.21	
Min Ch El (ft)	385.70	Shear (lb/sq ft)	0.21	0.34	
Alpha	1.25	Stream Power (lb/ft s)	0.34	1.02	
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	0.26	2.32	0.03
C & E Loss (ft)	0.02	Cum SA (acres)	0.65	1.02	0.06

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	389.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	389.42	Reach Len. (ft)	62.59	61.86	60.62
Crit W.S. (ft)	388.66	Flow Area (sq ft)	55.28	60.71	
E.G. Slope (ft/ft)	0.004413	Area (sq ft)	55.28	60.71	
Q Total (cfs)	403.00	Flow (cfs)	140.00	263.00	

Top Width (ft)	62.39	Top Width (ft)	32.73	29.65	
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	2.53	4.33	
Max Chl Dpth (ft)	3.72	Hydr. Depth (ft)	1.69	2.05	
Conv. Total (cfs)	6066.6	Conv. (cfs)	2107.6	3959.0	
Length Wtd. (ft)	62.09	Wetted Per. (ft)	32.97	30.17	
Min Ch El (ft)	385.70	Shear (lb/sq ft)	0.46	0.55	
Alpha	1.20	Stream Power (lb/ft s)	1.17	2.40	
Frctn Loss (ft)	0.41	Cum Volume (acre-ft)	1.25	3.52	0.21
C & E Loss (ft)	0.03	Cum SA (acres)	1.45	1.11	0.25

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #50-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	390.90	Element			
Vel Head (ft)	0.22	Wt. n-Val.	0.055	0.041	
W.S. Elev (ft)	390.69	Reach Len. (ft)	62.59	61.86	60.62
Crit W.S. (ft)	389.32	Flow Area (sq ft)	103.17	106.50	
E.G. Slope (ft/ft)	0.002898	Area (sq ft)	103.17	106.50	
Q Total (cfs)	741.00	Flow (cfs)	293.09	447.91	
Top Width (ft)	86.26	Top Width (ft)	43.66	42.60	
Vel Total (ft/s)	3.53	Avg. Vel. (ft/s)	2.84	4.21	
Max Chl Dpth (ft)	4.99	Hydr. Depth (ft)	2.36	2.50	
Conv. Total (cfs)	13765.8	Conv. (cfs)	5444.8	8321.0	
Length Wtd. (ft)	62.16	Wetted Per. (ft)	43.99	43.18	
Min Ch El (ft)	385.70	Shear (lb/sq ft)	0.42	0.45	
Alpha	1.11	Stream Power (lb/ft s)	1.21	1.88	
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	3.49	4.92	0.69
C & E Loss (ft)	0.02	Cum SA (acres)	2.11	1.13	0.62

CROSS SECTION OUTPUT Profile #100-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	391.29	Element			
Vel Head (ft)	0.25	Wt. n-Val.	0.055	0.041	
W.S. Elev (ft)	391.03	Reach Len. (ft)	62.59	61.86	60.62
Crit W.S. (ft)	389.66	Flow Area (sq ft)	118.81	121.81	
E.G. Slope (ft/ft)	0.003168	Area (sq ft)	118.81	121.81	
Q Total (cfs)	927.00	Flow (cfs)	373.36	553.64	
Top Width (ft)	92.82	Top Width (ft)	46.83	45.99	
Vel Total (ft/s)	3.85	Avg. Vel. (ft/s)	3.14	4.54	
Max Chl Dpth (ft)	5.33	Hydr. Depth (ft)	2.54	2.65	
Conv. Total (cfs)	16468.8	Conv. (cfs)	6633.0	9835.8	
Length Wtd. (ft)	62.13	Wetted Per. (ft)	47.18	46.58	
Min Ch El (ft)	385.70	Shear (lb/sq ft)	0.50	0.52	
Alpha	1.10	Stream Power (lb/ft s)	1.57	2.35	
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	4.67	5.51	0.94
C & E Loss (ft)	0.03	Cum SA (acres)	2.38	1.15	0.68

CROSS SECTION OUTPUT Profile #7-30-2016

			Left OB	Channel	Right OB
E.G. Elev (ft)	391.45	Element			
Vel Head (ft)	0.30	Wt. n-Val.	0.055	0.041	
W.S. Elev (ft)	391.15	Reach Len. (ft)	62.59	61.86	60.62
Crit W.S. (ft)	389.86	Flow Area (sq ft)	124.45	127.36	
E.G. Slope (ft/ft)	0.003670	Area (sq ft)	124.45	127.36	0.29
Q Total (cfs)	1058.00	Flow (cfs)	428.40	629.60	
Top Width (ft)	100.11	Top Width (ft)	47.93	47.16	5.02
Vel Total (ft/s)	4.20	Avg. Vel. (ft/s)	3.44	4.94	
Max Chl Dpth (ft)	5.45	Hydr. Depth (ft)	2.60	2.70	
Conv. Total (cfs)	17463.2	Conv. (cfs)	7071.2	10392.0	
Length Wtd. (ft)	62.12	Wetted Per. (ft)	48.28	47.76	
Min Ch El (ft)	385.70	Shear (lb/sq ft)	0.59	0.61	
Alpha	1.10	Stream Power (lb/ft s)	2.03	3.02	
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	5.48	5.88	1.05
C & E Loss (ft)	0.04	Cum SA (acres)	2.47	1.15	0.60

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7499

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	397.55	9.17	397.27	24.09	396.85	29.99	396.7	33.44	396.57
39.96	396.38	49.86	396	52.49	396	55.42	395.85	56.63	395.81
58.3	395.73	60.74	395.64	64.59	395.46	66.9	395.37	70.43	395.2
89.36	394.57	93.12	394.44	106.41	393.95	123.58	393.69	124.46	393.7
128.86	393.64	136.64	393.51	140.68	393.47	147.39	393.47	148.97	393.45
155.58	393.5	161.68	393.48	162.44	393.46	164.58	393.44	170.22	393.22
181.89	392.72	201.39	392	217.03	390	224.47	389.79	227.47	388.79
229.84	388	280.11	387.94	283.32	387.81	287	387.66	292.53	387.02
293.3	385.99	296.46	385.87	300.8	385.88	310.58	388.651	317.6	390.64
326.22	391.2	334.94	390.92	335.64	390.24	344.52	390.57	373.6	390.177
386.74	390	388.74	388.5	406.08	388.5	408.08	390	413.69	392.08
415.28	392.61	419.37	394	422.85	394.56	430.78	396	436.98	396.71
449.57	398	458.27	399.13	461.4	399.37	463.76	399.64	467.25	399.79
467.61	399.83	469.29	399.93	472.83	400				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	181.89	.055	287	.04	310.58	.055	334.94	.025
373.6	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
287	326.22	62.52	61.98	61.21	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
386.59	408.08	390	T

CROSS SECTION OUTPUT Profile #2-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	388.59	Element			
Vel Head (ft)	0.35	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	388.24	Reach Len. (ft)	62.52	61.98	61.21
Crit W.S. (ft)	388.24	Flow Area (sq ft)	16.68	33.70	
E.G. Slope (ft/ft)	0.011007	Area (sq ft)	16.68	33.70	
Q Total (cfs)	190.00	Flow (cfs)	20.61	169.39	
Top Width (ft)	80.01	Top Width (ft)	57.88	22.13	
Vel Total (ft/s)	3.77	Avg. Vel. (ft/s)	1.24	5.03	
Max Chl Dpth (ft)	2.37	Hydr. Depth (ft)	0.29	1.52	
Conv. Total (cfs)	1811.0	Conv. (cfs)	196.5	1614.5	
Length Wtd. (ft)	62.01	Wetted Per. (ft)	57.92	23.01	
Min Ch El (ft)	385.87	Shear (lb/sq ft)	0.20	1.01	
Alpha	1.60	Stream Power (lb/ft s)	0.24	5.06	
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	0.23	2.27	0.03
C & E Loss (ft)	0.02	Cum SA (acres)	0.59	0.99	0.06

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	389.21	Element			
Vel Head (ft)	0.49	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	388.72	Reach Len. (ft)	62.52	61.98	61.21
Crit W.S. (ft)	388.72	Flow Area (sq ft)	44.80	44.73	
E.G. Slope (ft/ft)	0.013392	Area (sq ft)	44.80	44.73	3.88
Q Total (cfs)	403.00	Flow (cfs)	116.02	286.98	
Top Width (ft)	101.07	Top Width (ft)	59.32	23.82	17.93

Vel Total (ft/s)	4.50	Avg. Vel. (ft/s)	2.59	6.42	
Max Chl Dpth (ft)	2.85	Hydr. Depth (ft)	0.76	1.88	
Conv. Total (cfs)	3482.5	Conv. (cfs)	1002.6	2479.9	
Length Wtd. (ft)	62.06	Wetted Per. (ft)	59.44	24.77	
Min Ch El (ft)	385.87	Shear (lb/sq ft)	0.63	1.51	
Alpha	1.54	Stream Power (lb/ft s)	1.63	9.69	
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	1.18	3.45	0.21
C & E Loss (ft)	0.00	Cum SA (acres)	1.39	1.07	0.24

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	390.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.055	0.040	0.051
W.S. Elev (ft)	390.57	Reach Len. (ft)	62.52	61.98	61.21
Crit W.S. (ft)	389.23	Flow Area (sq ft)	165.44	95.00	26.53
E.G. Slope (ft/ft)	0.002168	Area (sq ft)	165.44	95.00	55.54
Q Total (cfs)	741.00	Flow (cfs)	353.31	367.77	19.92
Top Width (ft)	179.17	Top Width (ft)	74.47	30.37	74.34
Vel Total (ft/s)	2.58	Avg. Vel. (ft/s)	2.14	3.87	0.75
Max Chl Dpth (ft)	4.70	Hydr. Depth (ft)	2.22	3.13	0.36
Conv. Total (cfs)	15913.2	Conv. (cfs)	7587.3	7898.0	427.8
Length Wtd. (ft)	62.10	Wetted Per. (ft)	74.80	31.58	75.58
Min Ch El (ft)	385.87	Shear (lb/sq ft)	0.30	0.41	0.05
Alpha	1.44	Stream Power (lb/ft s)	0.64	1.58	0.04
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	3.29	4.78	0.65
C & E Loss (ft)	0.03	Cum SA (acres)	2.02	1.08	0.57

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	391.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.055	0.040	0.042
W.S. Elev (ft)	390.94	Reach Len. (ft)	62.52	61.98	61.21
Crit W.S. (ft)	389.45	Flow Area (sq ft)	193.33	106.94	54.11
E.G. Slope (ft/ft)	0.002067	Area (sq ft)	193.33	106.94	83.12
Q Total (cfs)	927.00	Flow (cfs)	436.06	421.25	69.69
Top Width (ft)	188.97	Top Width (ft)	77.34	35.25	76.38
Vel Total (ft/s)	2.62	Avg. Vel. (ft/s)	2.26	3.94	1.29
Max Chl Dpth (ft)	5.07	Hydr. Depth (ft)	2.50	3.03	0.71
Conv. Total (cfs)	20389.2	Conv. (cfs)	9591.0	9265.4	1532.8
Length Wtd. (ft)	62.08	Wetted Per. (ft)	77.70	36.48	77.83
Min Ch El (ft)	385.87	Shear (lb/sq ft)	0.32	0.38	0.09
Alpha	1.40	Stream Power (lb/ft s)	0.72	1.49	0.12
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	4.45	5.35	0.88
C & E Loss (ft)	0.05	Cum SA (acres)	2.29	1.09	0.63

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	391.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.055	0.040	0.041

W.S. Elev (ft)	391.06	Reach Len. (ft)	62.52	61.98	61.21
Crit W.S. (ft)	389.62	Flow Area (sq ft)	202.26	111.09	63.10
E.G. Slope (ft/ft)	0.002316	Area (sq ft)	202.26	111.09	92.11
Q Total (cfs)	1058.00	Flow (cfs)	493.87	467.96	96.18
Top Width (ft)	195.52	Top Width (ft)	78.24	37.02	80.26
Vel Total (ft/s)	2.81	Avg. Vel. (ft/s)	2.44	4.21	1.52
Max Chl Dpth (ft)	5.19	Hydr. Depth (ft)	2.59	3.00	0.79
Conv. Total (cfs)	21982.3	Conv. (cfs)	10261.2	9722.8	1998.3
Length Wtd. (ft)	62.07	Wetted Per. (ft)	78.60	38.25	81.74
Min Ch El (ft)	385.87	Shear (lb/sq ft)	0.37	0.42	0.11
Alpha	1.37	Stream Power (lb/ft s)	0.91	1.77	0.17
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	5.24	5.71	0.98
C & E Loss (ft)	0.09	Cum SA (acres)	2.38	1.09	0.54

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7437

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.86	34.9	396	37.3	396	65.79	394.99	72.05	394.7
75.42	394.61	78.52	394.43	79.74	394.41	120.94	392	136.04	391.37
155.34	390.47	159.88	390.33	181.12	390.01	191.93	390.17	197.52	390.2
205.41	390.17	210.12	390.23	222.25	390.79	231.8	390.65	235.24	390.8
239.5	390.72	242.6	390.51	243.7	393.81	244.38	393.85	244.52	393.29
252.3	393.97	265.38	393.16	272.52	391.32	282.48	390.12	291.46	388.97
291.48	388.96	293.97	388.64	295.61	384.71	296.77	385.07	298.3	384.3
298.98	384.16	301.25	384.19	305.22	384.12	308.47	383.8	309.04	384.54
315.03	386.16	316.94	386.68	328.9	390.9	343.15	390.83	353.17	390.51
353.89	389.87	355.55	389.89	373.23	390.07	390.11	390	403.96	390
407.91	389.06	411.03	388.51	411.66	388.45	414.31	388	418.89	388
423.5	388.96	423.78	388.99	427.54	390	430.04	391.02	432.84	392
437.06	393.18	439.65	394	455.4	396	464.83	396.74	470.72	397.12
472.23	397.16	478.3	397.45	483.36	397.5	496.04	397.8	500.1	398
505.53	398.38	519.88	399.49	524.94	399.82	529	400		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	244.52	.055	293.97	.04	315.03	.055	353.17	.025
390.11	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
293.97	328.9	78.48	78.48	79.28	.3	.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	292	390.32	F
330	403.94	390.32	F
403.94	427.58	390	T

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	387.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.		0.042	
W.S. Elev (ft)	386.82	Reach Len. (ft)	19.00	19.00	19.00
Crit W.S. (ft)	386.00	Flow Area (sq ft)		45.18	
E.G. Slope (ft/ft)	0.006269	Area (sq ft)		45.18	
Q Total (cfs)	190.00	Flow (cfs)		190.00	
Top Width (ft)	22.61	Top Width (ft)		22.61	
Vel Total (ft/s)	4.21	Avg. Vel. (ft/s)		4.21	
Max Chl Dpth (ft)	3.02	Hydr. Depth (ft)		2.00	
Conv. Total (cfs)	2399.6	Conv. (cfs)		2399.6	
Length Wtd. (ft)	19.00	Wetted Per. (ft)		24.95	

Min Ch El (ft)	383.80	Shear (lb/sq ft)		0.71	
Alpha	1.00	Stream Power (lb/ft s)		2.98	
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	0.21	2.21	0.03
C & E Loss (ft)	0.02	Cum SA (acres)	0.55	0.96	0.06

Note: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	388.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.		0.043	
W.S. Elev (ft)	387.95	Reach Len. (ft)	19.00	19.00	19.00
Crit W.S. (ft)	386.99	Flow Area (sq ft)		72.80	
E.G. Slope (ft/ft)	0.007772	Area (sq ft)		72.80	
Q Total (cfs)	403.00	Flow (cfs)		403.00	
Top Width (ft)	26.28	Top Width (ft)		26.28	
Vel Total (ft/s)	5.54	Avg. Vel. (ft/s)		5.54	
Max Chl Dpth (ft)	4.15	Hydr. Depth (ft)		2.77	
Conv. Total (cfs)	4571.4	Conv. (cfs)		4571.4	
Length Wtd. (ft)	19.00	Wetted Per. (ft)		29.57	
Min Ch El (ft)	383.80	Shear (lb/sq ft)		1.19	
Alpha	1.00	Stream Power (lb/ft s)		6.61	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	1.14	3.36	0.20
C & E Loss (ft)	0.05	Cum SA (acres)	1.34	1.03	0.23

Note: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	390.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.055	0.045	0.065
W.S. Elev (ft)	390.05	Reach Len. (ft)	19.00	19.00	19.00
Crit W.S. (ft)	388.11	Flow Area (sq ft)	2.52	134.64	1.10
E.G. Slope (ft/ft)	0.004868	Area (sq ft)	7.74	134.64	33.17
Q Total (cfs)	741.00	Flow (cfs)	5.57	735.20	0.22
Top Width (ft)	114.36	Top Width (ft)	15.82	32.51	66.03
Vel Total (ft/s)	5.36	Avg. Vel. (ft/s)	2.21	5.46	0.20
Max Chl Dpth (ft)	6.25	Hydr. Depth (ft)	1.28	4.14	0.05
Conv. Total (cfs)	10620.2	Conv. (cfs)	79.9	10537.1	3.2
Length Wtd. (ft)	19.00	Wetted Per. (ft)	1.99	36.62	24.16
Min Ch El (ft)	383.80	Shear (lb/sq ft)	0.39	1.12	0.01
Alpha	1.03	Stream Power (lb/ft s)	0.85	6.10	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	3.17	4.62	0.59
C & E Loss (ft)		Cum SA (acres)	1.96	1.03	0.47

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	390.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.055	0.045	0.065
W.S. Elev (ft)	390.17	Reach Len. (ft)	19.00	19.00	19.00
Crit W.S. (ft)	388.62	Flow Area (sq ft)	2.76	138.53	3.94
E.G. Slope (ft/ft)	0.007008	Area (sq ft)	10.63	138.53	41.91
Q Total (cfs)	927.00	Flow (cfs)	7.76	917.01	2.23
Top Width (ft)	139.95	Top Width (ft)	32.72	32.85	74.39
Vel Total (ft/s)	6.38	Avg. Vel. (ft/s)	2.81	6.62	0.57
Max Chl Dpth (ft)	6.37	Hydr. Depth (ft)	1.40	4.22	0.16
Conv. Total (cfs)	11073.2	Conv. (cfs)	92.6	10953.9	26.7
Length Wtd. (ft)	19.00	Wetted Per. (ft)	1.99	36.98	24.47
Min Ch El (ft)	383.80	Shear (lb/sq ft)	0.61	1.64	0.07
Alpha	1.07	Stream Power (lb/ft s)	1.71	10.85	0.04
Frctn Loss (ft)		Cum Volume (acre-ft)	4.30	5.17	0.79
C & E Loss (ft)		Cum SA (acres)	2.21	1.04	0.52

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #7-30-2016

			Left OB	Channel	Right OB
E.G. Elev (ft)	390.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.02	Wt. n-Val.	0.055	0.045	
W.S. Elev (ft)	389.88	Reach Len. (ft)	19.00	19.00	19.00
Crit W.S. (ft)	388.98	Flow Area (sq ft)	2.19	129.26	
E.G. Slope (ft/ft)	0.011127	Area (sq ft)	5.94	129.26	26.89
Q Total (cfs)	1058.00	Flow (cfs)	6.68	1051.32	
Top Width (ft)	65.10	Top Width (ft)	9.61	32.04	23.45
Vel Total (ft/s)	8.05	Avg. Vel. (ft/s)	3.04	8.13	
Max Chl Dpth (ft)	6.08	Hydr. Depth (ft)	1.11	4.03	
Conv. Total (cfs)	10029.8	Conv. (cfs)	63.3	9966.5	
Length Wtd. (ft)	19.00	Wetted Per. (ft)	1.99	36.12	
Min Ch El (ft)	383.80	Shear (lb/sq ft)	0.77	2.49	
Alpha	1.02	Stream Power (lb/ft s)	2.34	20.22	
Frctn Loss (ft)		Cum Volume (acre-ft)	5.10	5.54	0.90
C & E Loss (ft)		Cum SA (acres)	2.32	1.04	0.46

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7400

INPUT
Description: Private Drive to School/Church
Distance from Upstream XS = 19
Deck/Roadway Width = 26.5
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
273	390.523		293.3	390.83		293.94	390.8203	388.82
320.94	390.4131	388.36	330.1	390.275				

Upstream Bridge Cross Section Data
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.86	34.9	396	37.3	396	65.79	394.99	72.05	394.7
75.42	394.61	78.52	394.43	79.74	394.41	120.94	392	136.04	391.37
155.34	390.47	159.88	390.33	181.12	390.01	191.93	390.17	197.52	390.2
205.41	390.17	210.12	390.23	222.25	390.79	231.8	390.65	235.24	390.8
239.5	390.72	242.6	390.51	243.7	393.81	244.38	393.85	244.52	393.29
252.3	393.97	265.38	393.16	272.52	391.32	282.48	390.12	291.46	388.97
291.48	388.96	293.97	388.64	295.61	384.71	296.77	385.07	298.3	384.3
298.98	384.16	301.25	384.19	305.22	384.12	308.47	383.8	309.04	384.54
315.03	386.16	316.94	386.68	328.9	390.9	343.15	390.83	353.17	390.51
353.89	389.87	355.55	389.89	373.23	390.07	390.11	390	403.96	390
407.91	389.06	411.03	388.51	411.66	388.45	414.31	388	418.89	388
423.5	388.96	423.78	388.99	427.54	390	430.04	391.02	432.84	392
437.06	393.18	439.65	394	455.4	396	464.83	396.74	470.72	397.12
472.23	397.16	478.3	397.45	483.36	397.5	496.04	397.8	500.1	398
505.53	398.38	519.88	399.49	524.94	399.82	529	400		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	244.52	.055	293.97	.04	315.03	.055	353.17	.025
390.11	.065								

Bank Sta: Left	Right	Coeff Contr.	Expan.
293.97	328.9	.3	.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	292	390.32	F
330	403.94	390.32	F
403.94	427.58	390	T

```
Downstream  Deck/Roadway Coordinates
    num=       8
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  148.65  389.87           151.8     390           244.9 390.523
     256390.6942  388.53   264.8  390.83  388.83     283390.5517  388.35
   301.1 390.275             322   390.1

Downstream Bridge Cross Section Data
Station Elevation Data    num=      79
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  396.57   19.18     396   25.02     396   26.23  395.94   29.88  395.76
   31.08  395.72   32.73  395.65   43.33  395.14   53.01  394.74   57.42  394.54
      60  394.44   71.11     394   82.39  393.29   85.33  393.09   90.62  392.73
    91.6  392.66   95.73   392.4   97.19   392.3  101.89  392.04  102.02  392.03
  102.64     392  111.71  391.66  112.52  391.62  116.39  391.46  117.91  391.39
  119.63  391.31  127.79  390.92  128.88  390.86  133.39  390.64  146.33     390
  148.65  389.87   197.8 389.235  207.48  389.11  256.95 384.896     267  384.04
  271.78  383.96  276.29  383.89  281.91  385.91  283.58  386.51   283.6  386.51
  293.28     388  308.92  391.17  338.91  390.22  343.99     390  364.27     390
  364.77  389.75  400.63  389.75  401.13     390  429.27     390  443.29  391.39
  445.37  391.46  446.23  391.48  446.91  391.51   447.8  391.52   448.1  391.53
     449  391.53   449.3  391.55   450.2  391.55  468.04     392  470.36     392
  473.67  392.18  474.82  392.24  482.25  392.66  485.63  392.85  492.04  393.22
   499.3  393.61  500.79  393.69  506.62     394  510.56     394  529.82  394.67
  530.59  394.68  532.27  394.85  533.97  395.03  534.59  395.05  536.96  395.34
  537.45  395.36  542.27     396  545.21     396  552.15  396.29

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .025   197.8    .055  256.95     .04  283.58    .055  364.77    .025
  401.13    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
        256.95  308.92             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     256   387.5       F
     282  552.15   387.5       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION


RIVER: Little Plumtree
REACH: Little Plumtree    RS: 7358

INPUT
Description:
Station Elevation Data    num=      79
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.57	19.18	396	25.02	396	26.23	395.94	29.88	395.76
31.08	395.72	32.73	395.65	43.33	395.14	53.01	394.74	57.42	394.54
60	394.44	71.11	394	82.39	393.29	85.33	393.09	90.62	392.73
91.6	392.66	95.73	392.4	97.19	392.3	101.89	392.04	102.02	392.03
102.64	392	111.71	391.66	112.52	391.62	116.39	391.46	117.91	391.39
119.63	391.31	127.79	390.92	128.88	390.86	133.39	390.64	146.33	390
148.65	389.87	197.8	389.235	207.48	389.11	256.95	384.896	267	384.04
271.78	383.96	276.29	383.89	281.91	385.91	283.58	386.51	283.6	386.51
293.28	388	308.92	391.17	338.91	390.22	343.99	390	364.27	390
364.77	389.75	400.63	389.75	401.13	390	429.27	390	443.29	391.39
445.37	391.46	446.23	391.48	446.91	391.51	447.8	391.52	448.1	391.53
449	391.53	449.3	391.55	450.2	391.55	468.04	392	470.36	392
473.67	392.18	474.82	392.24	482.25	392.66	485.63	392.85	492.04	393.22
499.3	393.61	500.79	393.69	506.62	394	510.56	394	529.82	394.67
530.59	394.68	532.27	394.85	533.97	395.03	534.59	395.05	536.96	395.34
537.45	395.36	542.27	396	545.21	396	552.15	396.29		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	197.8	.055	256.95	.04	283.58	.055	364.77	.025
401.13	.065								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
256.95	308.92	88.04	96.77	105.03	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	256	387.5	F
282	552.15	387.5	F

CROSS SECTION OUTPUT Profile #2-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	386.55	Element			
Vel Head (ft)	0.23	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	386.32	Reach Len. (ft)	88.04	96.77	105.03
Crit W.S. (ft)	385.57	Flow Area (sq ft)	1.31	48.48	
E.G. Slope (ft/ft)	0.004568	Area (sq ft)	11.87	48.67	
Q Total (cfs)	190.00	Flow (cfs)	2.97	187.03	
Top Width (ft)	42.79	Top Width (ft)	16.70	26.10	
Vel Total (ft/s)	3.82	Avg. Vel. (ft/s)	2.26	3.86	
Max Chl Dpth (ft)	2.43	Hydr. Depth (ft)	1.38	1.94	
Conv. Total (cfs)	2811.3	Conv. (cfs)	43.9	2767.4	
Length Wtd. (ft)	95.91	Wetted Per. (ft)	0.95	25.45	
Min Ch El (ft)	383.89	Shear (lb/sq ft)	0.39	0.54	
Alpha	1.01	Stream Power (lb/ft s)	0.89	2.10	
Frctn Loss (ft)	0.37	Cum Volume (acre-ft)	0.21	2.13	0.03
C & E Loss (ft)	0.05	Cum SA (acres)	0.54	0.92	0.06

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	387.67	Element			
Vel Head (ft)	0.49	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	387.18	Reach Len. (ft)	88.04	96.77	105.03
Crit W.S. (ft)	386.37	Flow Area (sq ft)	2.13	70.10	
E.G. Slope (ft/ft)	0.005968	Area (sq ft)	30.66	73.09	
Q Total (cfs)	403.00	Flow (cfs)	7.61	395.39	
Top Width (ft)	57.85	Top Width (ft)	26.83	31.01	
Vel Total (ft/s)	5.58	Avg. Vel. (ft/s)	3.57	5.64	
Max Chl Dpth (ft)	3.29	Hydr. Depth (ft)	2.25	2.80	
Conv. Total (cfs)	5216.4	Conv. (cfs)	98.6	5117.9	
Length Wtd. (ft)	95.55	Wetted Per. (ft)	0.95	25.45	
Min Ch El (ft)	383.89	Shear (lb/sq ft)	0.83	1.03	
Alpha	1.01	Stream Power (lb/ft s)	2.98	5.79	
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	1.13	3.23	0.20
C & E Loss (ft)	0.14	Cum SA (acres)	1.33	0.99	0.23

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	388.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	388.28	Reach Len. (ft)	88.04	96.77	105.03
Crit W.S. (ft)	387.35	Flow Area (sq ft)	67.28	111.07	
E.G. Slope (ft/ft)	0.003923	Area (sq ft)	67.28	111.07	
Q Total (cfs)	741.00	Flow (cfs)	161.29	579.71	
Top Width (ft)	77.46	Top Width (ft)	39.74	37.72	
Vel Total (ft/s)	4.15	Avg. Vel. (ft/s)	2.40	5.22	
Max Chl Dpth (ft)	4.39	Hydr. Depth (ft)	1.69	2.94	
Conv. Total (cfs)	11831.4	Conv. (cfs)	2575.3	9256.0	
Length Wtd. (ft)	94.55	Wetted Per. (ft)	39.89	38.36	
Min Ch El (ft)	383.89	Shear (lb/sq ft)	0.41	0.71	
Alpha	1.31	Stream Power (lb/ft s)	0.99	3.70	
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)	3.14	4.42	0.55
C & E Loss (ft)	0.02	Cum SA (acres)	1.93	1.01	0.36

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	389.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.055	0.041	
W.S. Elev (ft)	388.81	Reach Len. (ft)	88.04	96.77	105.03
Crit W.S. (ft)	387.61	Flow Area (sq ft)	89.81	131.60	
E.G. Slope (ft/ft)	0.003590	Area (sq ft)	89.81	131.60	
Q Total (cfs)	927.00	Flow (cfs)	226.82	700.18	
Top Width (ft)	86.24	Top Width (ft)	45.92	40.31	
Vel Total (ft/s)	4.19	Avg. Vel. (ft/s)	2.53	5.32	
Max Chl Dpth (ft)	4.92	Hydr. Depth (ft)	1.96	3.26	
Conv. Total (cfs)	15472.1	Conv. (cfs)	3785.7	11686.4	
Length Wtd. (ft)	94.41	Wetted Per. (ft)	46.09	41.00	
Min Ch El (ft)	383.89	Shear (lb/sq ft)	0.44	0.72	
Alpha	1.31	Stream Power (lb/ft s)	1.10	3.83	
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	4.26	4.97	0.74
C & E Loss (ft)	0.00	Cum SA (acres)	2.15	1.02	0.40

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	389.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.055	0.041	
W.S. Elev (ft)	389.16	Reach Len. (ft)	88.04	96.77	105.03
Crit W.S. (ft)	387.84	Flow Area (sq ft)	106.68	146.01	
E.G. Slope (ft/ft)	0.003441	Area (sq ft)	106.68	146.01	
Q Total (cfs)	1058.00	Flow (cfs)	268.37	789.63	
Top Width (ft)	95.20	Top Width (ft)	53.16	42.04	
Vel Total (ft/s)	4.19	Avg. Vel. (ft/s)	2.52	5.41	
Max Chl Dpth (ft)	5.27	Hydr. Depth (ft)	2.01	3.47	
Conv. Total (cfs)	18036.5	Conv. (cfs)	4575.0	13461.5	
Length Wtd. (ft)	94.35	Wetted Per. (ft)	53.34	42.77	
Min Ch El (ft)	383.89	Shear (lb/sq ft)	0.43	0.73	
Alpha	1.34	Stream Power (lb/ft s)	1.08	3.97	
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	5.05	5.34	0.89
C & E Loss (ft)	0.00	Cum SA (acres)	2.30	1.02	0.43

LATERAL STRUCTURE

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7340

INPUT
Description:
Lateral structure position = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width = 2
Weir Coefficient = 2
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 2

Sta	Elev	Sta	Elev
0	391.17	35	390

Weir crest shape = Broad Crested

LATERAL STRUCTURE OUTPUT Profile #2-YR Lateral Structure

E.G. US. (ft)	386.55	Weir Sta US (ft)	
W.S. US. (ft)	386.32	Weir Sta DS (ft)	
E.G. DS (ft)	386.39	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	386.20	Wr Top Wdth (ft)	
Q US (cfs)	190.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	190.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #10-YR Lateral Structure

E.G. US. (ft)	387.67	Weir Sta US (ft)	
W.S. US. (ft)	387.18	Weir Sta DS (ft)	
E.G. DS (ft)	387.45	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	387.07	Wr Top Wdth (ft)	
Q US (cfs)	403.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	403.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #50-YR Lateral Structure

E.G. US. (ft)	388.63	Weir Sta US (ft)	
W.S. US. (ft)	388.28	Weir Sta DS (ft)	
E.G. DS (ft)	388.49	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	388.16	Wr Top Wdth (ft)	
Q US (cfs)	741.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	741.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			

Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #100-YR Lateral Structure

E.G. US. (ft)	389.16	Weir Sta US (ft)	
W.S. US. (ft)	388.81	Weir Sta DS (ft)	
E.G. DS (ft)	389.04	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	388.69	Wr Top Wdth (ft)	
Q US (cfs)	927.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	927.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

LATERAL STRUCTURE OUTPUT Profile #7-30-2016 Lateral Structure

E.G. US. (ft)	389.52	Weir Sta US (ft)	
W.S. US. (ft)	389.16	Weir Sta DS (ft)	
E.G. DS (ft)	389.40	Min El Weir Flow (ft)	390.00
W.S. DS (ft)	389.03	Wr Top Wdth (ft)	
Q US (cfs)	1058.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	0.00	Weir Avg Depth (ft)	
Q DS (cfs)	1058.00	Weir Flow Area (sq ft)	
Perc Q Leaving	0.00	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)		Q Gate Group (cfs)	
Q Culv (cfs)		Gate Open Ht (ft)	
Q Lat RC (cfs)		Gate #Open	
Q Outlet TS (cfs)	0.00	Gate Area (sq ft)	
Q Breach (cfs)		Gate Submerg	
Breach Avg Velocity (ft/s)		Gate Invert (ft)	
Breach Flow Area (sq ft)		Gate Weir Coef	
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree   RS: 7261

INPUT
Description:
Station Elevation Data   num=   53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.52	11.16	396.13	11.49	396.12	14.84	396	19.03	396
31.29	395.48	32.33	395.45	37.78	395.24	39.36	395.17	40.43	395.13
45.64	394.87	46.72	394.83	47.74	394.79	50.86	394.63	51.69	394.6
55.43	394.43	56.02	394.4	56.87	394.35	65.64	394	66.27	393.97
66.34	393.97	68.25	393.87	69.12	393.83	71.37	393.71	72.13	393.67
73.08	393.62	77.56	393.37	80.58	393.19	99.36	392	106.9	391.65
117.58	391.15	124.47	390.84	131.93	390.49	142.34	390	150.21	389.53
158.04	389.08	161.74	388.88	161.88	388.87	183.31	387.65	187.17	387.43
194.46	385	229.25	385	239	383.75	244.57	382.89	249.17	383.78
258.14	387.45	258.15	387.45	264	388.91	282.39	395.82	284.39	395.75
295.46	395.49	296.12	395.12	316.31	395.46				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	161.88	.085	229.25	.04	258.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
229.25	258.14	198.31	202.16	205.99	.1	.3

CROSS SECTION OUTPUT Profile #2-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	386.13	Element			
Vel Head (ft)	0.13	Wt. n-Val.	0.085	0.040	
W.S. Elev (ft)	386.00	Reach Len. (ft)	198.31	202.16	205.99
Crit W.S. (ft)	385.31	Flow Area (sq ft)	36.21	49.00	
E.G. Slope (ft/ft)	0.003141	Area (sq ft)	36.21	49.00	
Q Total (cfs)	190.00	Flow (cfs)	34.39	155.61	
Top Width (ft)	63.12	Top Width (ft)	37.78	25.34	
Vel Total (ft/s)	2.23	Avg. Vel. (ft/s)	0.95	3.18	
Max Chl Dpth (ft)	3.11	Hydr. Depth (ft)	0.96	1.93	
Conv. Total (cfs)	3390.1	Conv. (cfs)	613.5	2776.6	
Length Wtd. (ft)	201.76	Wetted Per. (ft)	37.95	26.01	
Min Ch El (ft)	382.89	Shear (lb/sq ft)	0.19	0.37	
Alpha	1.69	Stream Power (lb/ft s)	0.18	1.17	
Frctn Loss (ft)	0.73	Cum Volume (acre-ft)	0.16	2.02	0.03
C & E Loss (ft)	0.01	Cum SA (acres)	0.49	0.86	0.06

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	387.07	Element			
Vel Head (ft)	0.21	Wt. n-Val.	0.085	0.040	
W.S. Elev (ft)	386.87	Reach Len. (ft)	198.31	202.16	205.99
Crit W.S. (ft)	385.94	Flow Area (sq ft)	70.21	71.97	
E.G. Slope (ft/ft)	0.003569	Area (sq ft)	70.21	71.97	
Q Total (cfs)	403.00	Flow (cfs)	105.48	297.52	
Top Width (ft)	67.86	Top Width (ft)	40.39	27.47	
Vel Total (ft/s)	2.83	Avg. Vel. (ft/s)	1.50	4.13	
Max Chl Dpth (ft)	3.98	Hydr. Depth (ft)	1.74	2.62	
Conv. Total (cfs)	6745.9	Conv. (cfs)	1765.6	4980.3	
Length Wtd. (ft)	201.25	Wetted Per. (ft)	40.70	28.31	
Min Ch El (ft)	382.89	Shear (lb/sq ft)	0.38	0.57	
Alpha	1.64	Stream Power (lb/ft s)	0.58	2.34	
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	1.03	3.07	0.20
C & E Loss (ft)	0.01	Cum SA (acres)	1.26	0.92	0.23

CROSS SECTION OUTPUT Profile #50-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	388.25	Element			
Vel Head (ft)	0.30	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	387.95	Reach Len. (ft)	198.31	202.16	205.99
Crit W.S. (ft)	386.62	Flow Area (sq ft)	117.48	102.72	0.50
E.G. Slope (ft/ft)	0.003654	Area (sq ft)	117.48	102.72	0.50
Q Total (cfs)	741.00	Flow (cfs)	214.95	525.84	0.20
Top Width (ft)	82.04	Top Width (ft)	51.15	28.89	2.00
Vel Total (ft/s)	3.36	Avg. Vel. (ft/s)	1.83	5.12	0.41
Max Chl Dpth (ft)	5.06	Hydr. Depth (ft)	2.30	3.56	0.25
Conv. Total (cfs)	12258.7	Conv. (cfs)	3556.1	8699.2	3.4
Length Wtd. (ft)	201.01	Wetted Per. (ft)	51.56	29.84	2.06
Min Ch El (ft)	382.89	Shear (lb/sq ft)	0.52	0.79	0.06
Alpha	1.74	Stream Power (lb/ft s)	0.95	4.02	0.02
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	2.95	4.19	0.55
C & E Loss (ft)	0.03	Cum SA (acres)	1.83	0.94	0.36

CROSS SECTION OUTPUT Profile #100-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	388.82	Element			
Vel Head (ft)	0.35	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	388.48	Reach Len. (ft)	198.31	202.16	205.99
Crit W.S. (ft)	386.94	Flow Area (sq ft)	147.01	118.01	2.12
E.G. Slope (ft/ft)	0.003525	Area (sq ft)	147.01	118.01	2.12
Q Total (cfs)	927.00	Flow (cfs)	274.69	650.93	1.38
Top Width (ft)	93.46	Top Width (ft)	60.45	28.89	4.12
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	1.87	5.52	0.65

Max Chl Dpth (ft)	5.59	Hydr. Depth (ft)	2.43	4.08	0.51
Conv. Total (cfs)	15612.4	Conv. (cfs)	4626.2	10962.9	23.3
Length Wtd. (ft)	200.94	Wetted Per. (ft)	60.87	29.84	4.25
Min Ch El (ft)	382.89	Shear (lb/sq ft)	0.53	0.87	0.11
Alpha	1.86	Stream Power (lb/ft s)	0.99	4.80	0.07
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	4.02	4.69	0.74
C & E Loss (ft)	0.04	Cum SA (acres)	2.04	0.94	0.40

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	389.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	388.82	Reach Len. (ft)	198.31	202.16	205.99
Crit W.S. (ft)	387.13	Flow Area (sq ft)	169.05	128.04	3.79
E.G. Slope (ft/ft)	0.003422	Area (sq ft)	169.05	128.04	3.79
Q Total (cfs)	1058.00	Flow (cfs)	320.44	734.60	2.96
Top Width (ft)	100.94	Top Width (ft)	66.54	28.89	5.51
Vel Total (ft/s)	3.52	Avg. Vel. (ft/s)	1.90	5.74	0.78
Max Chl Dpth (ft)	5.93	Hydr. Depth (ft)	2.54	4.43	0.69
Conv. Total (cfs)	18087.4	Conv. (cfs)	5478.2	12558.6	50.6
Length Wtd. (ft)	200.90	Wetted Per. (ft)	66.98	29.84	5.68
Min Ch El (ft)	382.89	Shear (lb/sq ft)	0.54	0.92	0.14
Alpha	1.94	Stream Power (lb/ft s)	1.02	5.26	0.11
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	4.77	5.03	0.88
C & E Loss (ft)	0.04	Cum SA (acres)	2.18	0.94	0.43

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 7059

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.9	12.54	394.26	17.77	394	18.74	394	37.67	392.94
54.23	392	55.28	391.94	56.04	391.89	69.43	391.06	86.78	390
111.05	388.93	115.58	388.73	116.27	388.69	127.34	385	168.04	385
184.66	382.67	188.14	382.53	194.24	382.53	198.69	385.84	198.71	385.85
209.3	392.23	221.62	403.18	233.11	403.18	233.79	402.85	259.74	402.5
338.53	403.99	339.19	404	350.39	404				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	116.27	.055	168.04	.04	198.71	.085	233.11	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
168.04	198.71	168.76	169.64	170.29	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
261.9	350.39	405

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	385.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	385.21	Reach Len. (ft)	168.76	169.64	170.29
Crit W.S. (ft)	384.37	Flow Area (sq ft)	8.46	53.00	
E.G. Slope (ft/ft)	0.004281	Area (sq ft)	8.46	53.00	
Q Total (cfs)	190.00	Flow (cfs)	5.20	184.80	
Top Width (ft)	71.12	Top Width (ft)	41.32	29.80	
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	0.61	3.49	
Max Chl Dpth (ft)	2.68	Hydr. Depth (ft)	0.20	1.78	
Conv. Total (cfs)	2903.9	Conv. (cfs)	79.4	2824.5	
Length Wtd. (ft)	169.63	Wetted Per. (ft)	41.35	30.85	
Min Ch El (ft)	382.53	Shear (lb/sq ft)	0.05	0.46	
Alpha	1.24	Stream Power (lb/ft s)	0.03	1.60	
Frctn Loss (ft)	0.68	Cum Volume (acre-ft)	0.06	1.78	0.03
C & E Loss (ft)	0.01	Cum SA (acres)	0.31	0.73	0.06

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	386.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.055	0.040	0.085
W.S. Elev (ft)	386.24	Reach Len. (ft)	168.76	169.64	170.29
Crit W.S. (ft)	385.39	Flow Area (sq ft)	52.67	84.35	0.12
E.G. Slope (ft/ft)	0.002829	Area (sq ft)	52.67	84.35	0.12
Q Total (cfs)	403.00	Flow (cfs)	84.53	318.43	0.04
Top Width (ft)	75.73	Top Width (ft)	44.41	30.67	0.64
Vel Total (ft/s)	2.94	Avg. Vel. (ft/s)	1.61	3.78	0.28
Max Chl Dpth (ft)	3.71	Hydr. Depth (ft)	1.19	2.75	0.19
Conv. Total (cfs)	7577.2	Conv. (cfs)	1589.3	5987.2	0.7
Length Wtd. (ft)	169.51	Wetted Per. (ft)	44.61	31.93	0.75
Min Ch El (ft)	382.53	Shear (lb/sq ft)	0.21	0.47	0.03
Alpha	1.37	Stream Power (lb/ft s)	0.33	1.76	0.01
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	0.75	2.71	0.20
C & E Loss (ft)	0.00	Cum SA (acres)	1.07	0.79	0.23

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	387.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.055	0.040	0.085
W.S. Elev (ft)	387.42	Reach Len. (ft)	168.76	169.64	170.29
Crit W.S. (ft)	386.03	Flow Area (sq ft)	107.51	120.76	2.06
E.G. Slope (ft/ft)	0.002182	Area (sq ft)	107.51	120.76	2.06
Q Total (cfs)	741.00	Flow (cfs)	231.08	508.63	1.29
Top Width (ft)	81.26	Top Width (ft)	47.97	30.67	2.61
Vel Total (ft/s)	3.22	Avg. Vel. (ft/s)	2.15	4.21	0.63
Max Chl Dpth (ft)	4.89	Hydr. Depth (ft)	2.24	3.94	0.79
Conv. Total (cfs)	15863.0	Conv. (cfs)	4946.8	10888.5	27.7
Length Wtd. (ft)	169.41	Wetted Per. (ft)	48.37	31.93	3.05
Min Ch El (ft)	382.53	Shear (lb/sq ft)	0.30	0.52	0.09
Alpha	1.32	Stream Power (lb/ft s)	0.65	2.17	0.06
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	2.44	3.67	0.55
C & E Loss (ft)	0.01	Cum SA (acres)	1.61	0.80	0.35

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	388.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.055	0.040	0.085
W.S. Elev (ft)	388.01	Reach Len. (ft)	168.76	169.64	170.29
Crit W.S. (ft)	386.31	Flow Area (sq ft)	136.19	138.76	3.88
E.G. Slope (ft/ft)	0.001959	Area (sq ft)	136.19	138.76	3.88
Q Total (cfs)	927.00	Flow (cfs)	316.64	607.50	2.85
Top Width (ft)	83.99	Top Width (ft)	49.74	30.67	3.59
Vel Total (ft/s)	3.32	Avg. Vel. (ft/s)	2.33	4.38	0.73
Max Chl Dpth (ft)	5.48	Hydr. Depth (ft)	2.74	4.52	1.08
Conv. Total (cfs)	20945.2	Conv. (cfs)	7154.5	13726.3	64.4
Length Wtd. (ft)	169.38	Wetted Per. (ft)	50.22	31.93	4.19
Min Ch El (ft)	382.53	Shear (lb/sq ft)	0.33	0.53	0.11
Alpha	1.30	Stream Power (lb/ft s)	0.77	2.33	0.08
Frctn Loss (ft)	0.31	Cum Volume (acre-ft)	3.38	4.10	0.73
C & E Loss (ft)	0.01	Cum SA (acres)	1.79	0.80	0.38

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	388.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.055	0.040	0.085
W.S. Elev (ft)	388.39	Reach Len. (ft)	168.76	169.64	170.29
Crit W.S. (ft)	386.48	Flow Area (sq ft)	155.18	150.34	5.35
E.G. Slope (ft/ft)	0.001858	Area (sq ft)	155.18	150.34	5.35
Q Total (cfs)	1058.00	Flow (cfs)	377.43	676.30	4.27
Top Width (ft)	85.75	Top Width (ft)	50.87	30.67	4.21
Vel Total (ft/s)	3.40	Avg. Vel. (ft/s)	2.43	4.50	0.80
Max Chl Dpth (ft)	5.86	Hydr. Depth (ft)	3.05	4.90	1.27
Conv. Total (cfs)	24542.1	Conv. (cfs)	8755.2	15687.9	98.9
Length Wtd. (ft)	169.37	Wetted Per. (ft)	51.42	31.93	4.92
Min Ch El (ft)	382.53	Shear (lb/sq ft)	0.35	0.55	0.13
Alpha	1.30	Stream Power (lb/ft s)	0.85	2.46	0.10
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	4.03	4.39	0.86
C & E Loss (ft)	0.01	Cum SA (acres)	1.91	0.80	0.40

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6890

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.3	13.98	394	17.28	394	26.86	393.7	27.04	393.7
34.09	393.42	34.57	393.4	35.15	393.38	35.72	393.35	36.46	393.31
37.31	393.27	39.62	393.17	65.29	392	68.45	391.85	70.12	391.77
78.63	391.37	110.47	390	112.55	389.88	113.04	389.85	118.83	389.49
121	389.35	128.16	388.89	132.1	388.64	138.52	388.23	139.26	388.18
148.8	385	186.47	385	209.04	382.1	209.48	381.65	214.16	381.04
217.26	381.23	221.62	384.16	221.67	384.2	221.74	384.25	221.98	384.45
222.05	384.5	226.69	388	227.2	388	227.34	388.12	229.12	389.72
229.13	389.74	229.43	390	231.07	391.47	231.68	392	231.99	392.26
234.01	394	235.13	394.96	236.34	396	238.21	397.58	238.76	398
239.84	398.64	242.65	400	247.4	401.93	247.54	402	254.08	402.28
311.77	404	314.64	404						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	78.63	.085	139.26	.055	186.47	.04	226.69	.085
254.08	.025								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.47	226.69	197.24	199.49	199.59	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
304.6	314.64	405

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	384.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.040	
W.S. Elev (ft)	384.54	Reach Len. (ft)	197.24	199.49	199.59
Crit W.S. (ft)	383.48	Flow Area (sq ft)		58.02	
E.G. Slope (ft/ft)	0.003733	Area (sq ft)		58.02	
Q Total (cfs)	190.00	Flow (cfs)		190.00	
Top Width (ft)	32.06	Top Width (ft)		32.06	
Vel Total (ft/s)	3.27	Avg. Vel. (ft/s)		3.27	
Max Chl Dpth (ft)	3.50	Hydr. Depth (ft)		1.81	
Conv. Total (cfs)	3109.8	Conv. (cfs)		3109.8	
Length Wtd. (ft)	199.49	Wetted Per. (ft)		33.48	
Min Ch El (ft)	381.04	Shear (lb/sq ft)		0.40	
Alpha	1.00	Stream Power (lb/ft s)		1.32	
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	0.04	1.56	0.03
C & E Loss (ft)	0.03	Cum SA (acres)	0.23	0.61	0.06

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	385.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	385.77	Reach Len. (ft)	197.24	199.49	199.59
Crit W.S. (ft)	384.41	Flow Area (sq ft)	29.79	101.89	
E.G. Slope (ft/ft)	0.002652	Area (sq ft)	29.79	101.89	
Q Total (cfs)	403.00	Flow (cfs)	33.99	369.01	
Top Width (ft)	77.23	Top Width (ft)	39.97	37.26	
Vel Total (ft/s)	3.06	Avg. Vel. (ft/s)	1.14	3.62	
Max Chl Dpth (ft)	4.73	Hydr. Depth (ft)	0.75	2.73	
Conv. Total (cfs)	7825.8	Conv. (cfs)	660.1	7165.7	
Length Wtd. (ft)	199.40	Wetted Per. (ft)	40.10	39.12	
Min Ch El (ft)	381.04	Shear (lb/sq ft)	0.12	0.43	
Alpha	1.29	Stream Power (lb/ft s)	0.14	1.56	

Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	0.59	2.35	0.20
C & E Loss (ft)	0.06	Cum SA (acres)	0.91	0.65	0.23

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	387.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	387.09	Reach Len. (ft)	197.24	199.49	199.59
Crit W.S. (ft)	385.52	Flow Area (sq ft)	85.49	152.52	
E.G. Slope (ft/ft)	0.001875	Area (sq ft)	85.49	152.52	
Q Total (cfs)	741.00	Flow (cfs)	155.04	585.96	
Top Width (ft)	82.97	Top Width (ft)	43.95	39.02	
Vel Total (ft/s)	3.11	Avg. Vel. (ft/s)	1.81	3.84	
Max Chl Dpth (ft)	6.05	Hydr. Depth (ft)	1.94	3.91	
Conv. Total (cfs)	17112.5	Conv. (cfs)	3580.4	13532.1	
Length Wtd. (ft)	199.26	Wetted Per. (ft)	44.29	41.32	
Min Ch El (ft)	381.04	Shear (lb/sq ft)	0.23	0.43	
Alpha	1.28	Stream Power (lb/ft s)	0.41	1.66	
Frctn Loss (ft)	0.65	Cum Volume (acre-ft)	2.07	3.14	0.54
C & E Loss (ft)	0.11	Cum SA (acres)	1.43	0.66	0.35

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	387.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.	0.055	0.040	
W.S. Elev (ft)	387.72	Reach Len. (ft)	197.24	199.49	199.59
Crit W.S. (ft)	385.84	Flow Area (sq ft)	113.70	177.30	
E.G. Slope (ft/ft)	0.001668	Area (sq ft)	113.70	177.30	
Q Total (cfs)	927.00	Flow (cfs)	228.42	698.58	
Top Width (ft)	85.69	Top Width (ft)	45.84	39.85	
Vel Total (ft/s)	3.19	Avg. Vel. (ft/s)	2.01	3.94	
Max Chl Dpth (ft)	6.68	Hydr. Depth (ft)	2.48	4.45	
Conv. Total (cfs)	22697.9	Conv. (cfs)	5593.0	17104.9	
Length Wtd. (ft)	199.21	Wetted Per. (ft)	46.28	42.36	
Min Ch El (ft)	381.04	Shear (lb/sq ft)	0.26	0.44	
Alpha	1.25	Stream Power (lb/ft s)	0.51	1.72	
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	2.89	3.48	0.72
C & E Loss (ft)	0.14	Cum SA (acres)	1.61	0.66	0.37

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	388.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.	0.055	0.040	0.085
W.S. Elev (ft)	388.12	Reach Len. (ft)	197.24	199.49	199.59
Crit W.S. (ft)	386.03	Flow Area (sq ft)	132.10	193.19	0.07
E.G. Slope (ft/ft)	0.001576	Area (sq ft)	132.10	193.19	0.07
Q Total (cfs)	1058.00	Flow (cfs)	280.09	777.90	0.01
Top Width (ft)	87.90	Top Width (ft)	47.03	40.22	0.65
Vel Total (ft/s)	3.25	Avg. Vel. (ft/s)	2.12	4.03	0.15
Max Chl Dpth (ft)	7.08	Hydr. Depth (ft)	2.81	4.80	0.11
Conv. Total (cfs)	26647.8	Conv. (cfs)	7054.5	19593.0	0.3

Length Wtd. (ft)	199.19	Wetted Per. (ft)	47.53	42.82	0.69
Min Ch El (ft)	381.04	Shear (lb/sq ft)	0.27	0.44	0.01
Alpha	1.24	Stream Power (lb/ft s)	0.58	1.79	0.00
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	3.48	3.72	0.85
C & E Loss (ft)	0.15	Cum SA (acres)	1.72	0.67	0.39

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6690

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	396.97	9.56	396.32	13.05	396.18	13.29	396.17	15.54	396.08
15.66	396.08	17.8	396	20.68	395.84	21.02	395.81	21.49	395.78
37.06	394.87	38.21	394.76	44.14	394.19	44.63	394.15	46.04	394
48	393.33	49.54	392.75	51.16	392	52.72	391.33	53.29	391.15
54.75	390.76	56.06	390.39	57.3	390	100.92	390	106.99	390.9
108.3	391.09	109.27	391.28	109.32	391.29	109.37	391.29	109.38	391.3
109.43	391.3	152.71	385.84	163.54	384.7	163.98	384.66	168.46	380.92
173.86	380.59	179.48	380.65	181.3	382.1	183.67	382.49	197.16	384.73
205.42	391.59	221.07	403.46	223.51	404	294.59	404	318.16	404

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	163.54	.04	181.3	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
163.54	181.3	377.18	363.89	351.23	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
53.01	109.48	391.28	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3.8	21.3	405

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	383.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.		0.040	0.085
W.S. Elev (ft)	383.13	Reach Len. (ft)	377.18	363.89	351.23
Crit W.S. (ft)	382.66	Flow Area (sq ft)		33.12	3.24
E.G. Slope (ft/ft)	0.009306	Area (sq ft)		33.12	3.24
Q Total (cfs)	190.00	Flow (cfs)		186.51	3.49
Top Width (ft)	21.74	Top Width (ft)		15.49	6.25
Vel Total (ft/s)	5.23	Avg. Vel. (ft/s)		5.63	1.08
Max Chl Dpth (ft)	2.54	Hydr. Depth (ft)		2.14	0.52
Conv. Total (cfs)	1969.6	Conv. (cfs)		1933.4	36.2
Length Wtd. (ft)	363.77	Wetted Per. (ft)		16.81	6.34
Min Ch El (ft)	380.59	Shear (lb/sq ft)		1.14	0.30
Alpha	1.14	Stream Power (lb/ft s)		6.44	0.32
Frctn Loss (ft)	4.03	Cum Volume (acre-ft)	0.04	1.36	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.23	0.50	0.04

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	385.08	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.75	Wt. n-Val.		0.040	0.085
W.S. Elev (ft)	384.33	Reach Len. (ft)	377.18	363.89	351.23
Crit W.S. (ft)	383.80	Flow Area (sq ft)		52.53	15.05
E.G. Slope (ft/ft)	0.009346	Area (sq ft)		52.53	15.05
Q Total (cfs)	403.00	Flow (cfs)		375.86	27.14
Top Width (ft)	30.39	Top Width (ft)		16.93	13.46
Vel Total (ft/s)	5.96	Avg. Vel. (ft/s)		7.15	1.80
Max Chl Dpth (ft)	3.74	Hydr. Depth (ft)		3.10	1.12
Conv. Total (cfs)	4168.5	Conv. (cfs)		3887.8	280.7
Length Wtd. (ft)	363.45	Wetted Per. (ft)		18.68	13.65
Min Ch El (ft)	380.59	Shear (lb/sq ft)		1.64	0.64
Alpha	1.35	Stream Power (lb/ft s)		11.74	1.16
Frctn Loss (ft)	3.93	Cum Volume (acre-ft)	0.52	1.99	0.17
C & E Loss (ft)	0.02	Cum SA (acres)	0.82	0.53	0.20

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	386.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.27	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	385.25	Reach Len. (ft)	377.18	363.89	351.23
Crit W.S. (ft)	385.10	Flow Area (sq ft)	1.46	68.70	29.36
E.G. Slope (ft/ft)	0.012476	Area (sq ft)	1.46	68.70	29.36
Q Total (cfs)	741.00	Flow (cfs)	1.21	656.92	82.87
Top Width (ft)	39.52	Top Width (ft)	5.27	17.76	16.49
Vel Total (ft/s)	7.45	Avg. Vel. (ft/s)	0.83	9.56	2.82
Max Chl Dpth (ft)	4.66	Hydr. Depth (ft)	0.28	3.87	1.78
Conv. Total (cfs)	6634.0	Conv. (cfs)	10.8	5881.2	741.9
Length Wtd. (ft)	364.02	Wetted Per. (ft)	5.30	19.64	16.90
Min Ch El (ft)	380.59	Shear (lb/sq ft)	0.21	2.73	1.35
Alpha	1.48	Stream Power (lb/ft s)	0.18	26.06	3.82
Frctn Loss (ft)	4.13	Cum Volume (acre-ft)	1.87	2.63	0.48
C & E Loss (ft)	0.08	Cum SA (acres)	1.32	0.53	0.31

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	387.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.58	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	385.61	Reach Len. (ft)	377.18	363.89	351.23
Crit W.S. (ft)	385.61	Flow Area (sq ft)	3.94	75.02	35.31
E.G. Slope (ft/ft)	0.013985	Area (sq ft)	3.94	75.02	35.31
Q Total (cfs)	927.00	Flow (cfs)	4.80	805.44	116.76
Top Width (ft)	43.33	Top Width (ft)	8.65	17.76	16.92
Vel Total (ft/s)	8.11	Avg. Vel. (ft/s)	1.22	10.74	3.31
Max Chl Dpth (ft)	5.02	Hydr. Depth (ft)	0.46	4.22	2.09
Conv. Total (cfs)	7838.6	Conv. (cfs)	40.6	6810.7	987.3
Length Wtd. (ft)	364.35	Wetted Per. (ft)	8.70	19.64	17.45
Min Ch El (ft)	380.59	Shear (lb/sq ft)	0.40	3.34	1.77
Alpha	1.54	Stream Power (lb/ft s)	0.48	35.82	5.84
Frctn Loss (ft)	4.21	Cum Volume (acre-ft)	2.63	2.90	0.64
C & E Loss (ft)	0.18	Cum SA (acres)	1.48	0.53	0.34

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	387.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.66	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	385.96	Reach Len. (ft)	377.18	363.89	351.23
Crit W.S. (ft)	385.96	Flow Area (sq ft)	7.49	81.17	41.25
E.G. Slope (ft/ft)	0.013465	Area (sq ft)	7.49	81.17	41.25
Q Total (cfs)	1058.00	Flow (cfs)	11.22	901.34	145.45
Top Width (ft)	46.86	Top Width (ft)	11.76	17.76	17.34
Vel Total (ft/s)	8.14	Avg. Vel. (ft/s)	1.50	11.10	3.53
Max Chl Dpth (ft)	5.37	Hydr. Depth (ft)	0.64	4.57	2.38
Conv. Total (cfs)	9117.5	Conv. (cfs)	96.7	7767.5	1253.4
Length Wtd. (ft)	364.54	Wetted Per. (ft)	11.82	19.64	18.00
Min Ch El (ft)	380.59	Shear (lb/sq ft)	0.53	3.48	1.93
Alpha	1.61	Stream Power (lb/ft s)	0.80	38.59	6.79
Frctn Loss (ft)	3.99	Cum Volume (acre-ft)	3.16	3.09	0.76
C & E Loss (ft)	0.21	Cum SA (acres)	1.59	0.53	0.35

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6326

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394.12	.17	394.1	.39	394.08	.55	394.07	1.48	394
8.54	393.52	9.16	393.45	9.97	393.36	10.47	393.3	12.77	392.95
14.58	392.76	15.81	392.56	19.55	392	20.06	391.95	22.11	391.75
23.82	391.6	25.31	391.48	29.23	391.03	33.2	390.67	35.54	390.38
36.49	390.29	38.71	390	44.96	389.14	51.95	388	56.99	387.4
58.61	387.19	67.92	386	71.44	385.39	73.02	385.16	75.4	384.84
81.11	384.1	81.6	384.03	81.9	384	83.65	383.83	84.03	383.77
89.45	383.24	90.85	383.01	91.64	382.92	97.37	382	99.04	382
99.15	381.99	99.18	381.99	100.82	381.86	104.18	381.58	104.24	381.58
136.32	380.14	161.77	380	170.99	380.01	171.86	380.01	173.35	379.93
177.41	376.15	187.21	377.05	190.57	379.27	192.39	379.55	193.53	379.72
206.36	385.54	206.41	385.59	206.58	385.77	212.57	392	213.68	392.92
214.91	394	216.25	394.9	217.66	396	219.81	397.41	220.59	398
221.57	398.69	223.68	400	225.8	401.31	227.13	402	275.55	403.66
285.17	404	287.06	404						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	173.35	.04	190.57	.085

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

173.35 190.57 271.56 280.95 283.31 .1 .3

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	379.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.		0.040	
W.S. Elev (ft)	378.97	Reach Len. (ft)	271.56	280.95	283.31
Crit W.S. (ft)	378.67	Flow Area (sq ft)		30.32	
E.G. Slope (ft/ft)	0.013648	Area (sq ft)		30.32	
Q Total (cfs)	190.00	Flow (cfs)		190.00	
Top Width (ft)	15.74	Top Width (ft)		15.74	
Vel Total (ft/s)	6.27	Avg. Vel. (ft/s)		6.27	
Max Chl Dpth (ft)	2.82	Hydr. Depth (ft)		1.93	
Conv. Total (cfs)	1626.4	Conv. (cfs)		1626.4	
Length Wtd. (ft)	280.95	Wetted Per. (ft)		17.47	
Min Ch El (ft)	376.15	Shear (lb/sq ft)		1.48	
Alpha	1.00	Stream Power (lb/ft s)		9.27	
Frctn Loss (ft)	2.03	Cum Volume (acre-ft)	0.04	1.09	0.01
C & E Loss (ft)	0.16	Cum SA (acres)	0.23	0.37	0.02

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	381.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	380.16	Reach Len. (ft)	271.56	280.95	283.31
Crit W.S. (ft)	379.84	Flow Area (sq ft)	4.18	50.24	2.18
E.G. Slope (ft/ft)	0.012820	Area (sq ft)	4.18	50.24	2.18
Q Total (cfs)	403.00	Flow (cfs)	1.92	398.23	2.85
Top Width (ft)	58.65	Top Width (ft)	37.50	17.22	3.93
Vel Total (ft/s)	7.12	Avg. Vel. (ft/s)	0.46	7.93	1.31
Max Chl Dpth (ft)	4.01	Hydr. Depth (ft)	0.11	2.92	0.55
Conv. Total (cfs)	3559.2	Conv. (cfs)	16.9	3517.1	25.2
Length Wtd. (ft)	280.88	Wetted Per. (ft)	37.50	19.42	4.06
Min Ch El (ft)	376.15	Shear (lb/sq ft)	0.09	2.07	0.43
Alpha	1.23	Stream Power (lb/ft s)	0.04	16.42	0.56
Frctn Loss (ft)	1.97	Cum Volume (acre-ft)	0.50	1.57	0.10
C & E Loss (ft)	0.24	Cum SA (acres)	0.66	0.39	0.13

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	382.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.02	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	381.31	Reach Len. (ft)	271.56	280.95	283.31
Crit W.S. (ft)	381.31	Flow Area (sq ft)	61.81	69.98	8.14
E.G. Slope (ft/ft)	0.010201	Area (sq ft)	61.81	69.98	8.14
Q Total (cfs)	741.00	Flow (cfs)	107.68	617.18	16.14
Top Width (ft)	86.72	Top Width (ft)	63.04	17.22	6.46
Vel Total (ft/s)	5.30	Avg. Vel. (ft/s)	1.74	8.82	1.98
Max Chl Dpth (ft)	5.16	Hydr. Depth (ft)	0.98	4.06	1.26
Conv. Total (cfs)	7336.5	Conv. (cfs)	1066.1	6110.6	159.8
Length Wtd. (ft)	280.01	Wetted Per. (ft)	63.07	19.42	6.84
Min Ch El (ft)	376.15	Shear (lb/sq ft)	0.62	2.30	0.76
Alpha	2.33	Stream Power (lb/ft s)	1.09	20.24	1.50

Frctn Loss (ft)	1.64	Cum Volume (acre-ft)	1.60	2.05	0.32
C & E Loss (ft)	0.22	Cum SA (acres)	1.02	0.39	0.22

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	382.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	381.81	Reach Len. (ft)	271.56	280.95	283.31
Crit W.S. (ft)	381.74	Flow Area (sq ft)	95.70	78.55	11.63
E.G. Slope (ft/ft)	0.009148	Area (sq ft)	95.70	78.55	11.63
Q Total (cfs)	927.00	Flow (cfs)	193.58	708.56	24.85
Top Width (ft)	96.65	Top Width (ft)	71.87	17.22	7.56
Vel Total (ft/s)	4.99	Avg. Vel. (ft/s)	2.02	9.02	2.14
Max Chl Dpth (ft)	5.66	Hydr. Depth (ft)	1.33	4.56	1.54
Conv. Total (cfs)	9692.1	Conv. (cfs)	2024.0	7408.2	259.9
Length Wtd. (ft)	279.58	Wetted Per. (ft)	71.92	19.42	8.04
Min Ch El (ft)	376.15	Shear (lb/sq ft)	0.76	2.31	0.83
Alpha	2.54	Stream Power (lb/ft s)	1.54	20.84	1.77
Frctn Loss (ft)	1.51	Cum Volume (acre-ft)	2.19	2.26	0.45
C & E Loss (ft)	0.20	Cum SA (acres)	1.13	0.39	0.24

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	383.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	382.14	Reach Len. (ft)	271.56	280.95	283.31
Crit W.S. (ft)	381.97	Flow Area (sq ft)	120.42	84.26	14.26
E.G. Slope (ft/ft)	0.008449	Area (sq ft)	120.42	84.26	14.26
Q Total (cfs)	1058.00	Flow (cfs)	260.94	765.56	31.49
Top Width (ft)	102.34	Top Width (ft)	76.84	17.22	8.29
Vel Total (ft/s)	4.83	Avg. Vel. (ft/s)	2.17	9.09	2.21
Max Chl Dpth (ft)	5.99	Hydr. Depth (ft)	1.57	4.89	1.72
Conv. Total (cfs)	11510.2	Conv. (cfs)	2838.9	8328.7	342.6
Length Wtd. (ft)	279.33	Wetted Per. (ft)	76.90	19.42	8.85
Min Ch El (ft)	376.15	Shear (lb/sq ft)	0.83	2.29	0.85
Alpha	2.61	Stream Power (lb/ft s)	1.79	20.80	1.88
Frctn Loss (ft)	1.41	Cum Volume (acre-ft)	2.61	2.40	0.53
C & E Loss (ft)	0.18	Cum SA (acres)	1.20	0.39	0.25

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 6045

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	406	1.4	405.71	1.73	405.66	3.95	405.2	5.01	405.05
7.63	404.63	9.29	404.32	11.26	404	12.26	403.68	13.01	403.46
14.32	403.03	17.73	402	18.08	401.89	18.47	401.76	20.95	400.93
23.69	400.03	23.76	400	27.2	399.06	30.51	398	33.77	397.07
37.4	396	41.28	394.98	44.92	394	47.3	393.41	52.97	392
55.18	391.44	58.72	390.52	60.71	390	64.51	388.98	68.17	388
69.43	387.72	76.91	386	77.37	386	82.19	384.45	82.33	384.4
82.38	384.39	114.77	379.87	140.12	378.58	154.89	377.51	156.71	377.38
160.04	373.45	165.47	372.69	178.5	373.65	179.33	377.25	180.24	377.41
191.95	379.48	205.32	385.5	217.03	395.24	217.08	395.26	217.18	395.28
220.9	397.31	222.17	397.99	222.19	398.01	222.2	398.03	222.23	398.1
222.25	398.16	222.35	398.36	222.61	398.88	224.29	402	326.13	402
330.47	401.79								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	156.71	.04	179.33	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
156.71	179.33	209.04	198.49	192.65	.1	.3

CROSS SECTION OUTPUT Profile #2-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	377.40	Element			
Vel Head (ft)	0.08	Wt. n-Val.		0.040	0.085
W.S. Elev (ft)	377.32	Reach Len. (ft)	209.04	198.49	192.65
Crit W.S. (ft)	374.62	Flow Area (sq ft)		84.99	0.01
E.G. Slope (ft/ft)	0.000797	Area (sq ft)		84.99	0.01
Q Total (cfs)	190.00	Flow (cfs)		190.00	0.00
Top Width (ft)	22.95	Top Width (ft)		22.57	0.38
Vel Total (ft/s)	2.24	Avg. Vel. (ft/s)		2.24	0.05
Max Chl Dpth (ft)	4.63	Hydr. Depth (ft)		3.77	0.03
Conv. Total (cfs)	6729.6	Conv. (cfs)		6729.6	0.0
Length Wtd. (ft)	198.49	Wetted Per. (ft)		27.31	0.39
Min Ch El (ft)	372.69	Shear (lb/sq ft)		0.15	0.00
Alpha	1.00	Stream Power (lb/ft s)		0.35	0.00
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	0.04	0.72	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.23	0.25	0.02

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	378.91	Element			
Vel Head (ft)	0.17	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	378.74	Reach Len. (ft)	209.04	198.49	192.65
Crit W.S. (ft)	375.57	Flow Area (sq ft)	12.93	117.24	6.31
E.G. Slope (ft/ft)	0.001178	Area (sq ft)	12.93	117.24	6.31
Q Total (cfs)	403.00	Flow (cfs)	5.84	394.08	3.09
Top Width (ft)	50.87	Top Width (ft)	19.79	22.62	8.45
Vel Total (ft/s)	2.95	Avg. Vel. (ft/s)	0.45	3.36	0.49
Max Chl Dpth (ft)	6.05	Hydr. Depth (ft)	0.65	5.18	0.75
Conv. Total (cfs)	11740.0	Conv. (cfs)	170.0	11480.1	89.9
Length Wtd. (ft)	198.54	Wetted Per. (ft)	19.84	27.39	8.58

Min Ch El (ft)	372.69	Shear (lb/sq ft)	0.05	0.31	0.05
Alpha	1.27	Stream Power (lb/ft s)	0.02	1.06	0.03
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	0.45	1.02	0.07
C & E Loss (ft)	0.03	Cum SA (acres)	0.48	0.26	0.08

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	380.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	380.16	Reach Len. (ft)	209.04	198.49	192.65
Crit W.S. (ft)	376.74	Flow Area (sq ft)	60.02	149.20	23.12
E.G. Slope (ft/ft)	0.001521	Area (sq ft)	60.02	149.20	23.12
Q Total (cfs)	741.00	Flow (cfs)	50.26	669.19	21.55
Top Width (ft)	80.73	Top Width (ft)	43.99	22.62	14.12
Vel Total (ft/s)	3.19	Avg. Vel. (ft/s)	0.84	4.49	0.93
Max Chl Dpth (ft)	7.47	Hydr. Depth (ft)	1.36	6.60	1.64
Conv. Total (cfs)	18998.9	Conv. (cfs)	1288.7	17157.7	552.5
Length Wtd. (ft)	198.87	Wetted Per. (ft)	44.09	27.39	14.46
Min Ch El (ft)	372.69	Shear (lb/sq ft)	0.13	0.52	0.15
Alpha	1.79	Stream Power (lb/ft s)	0.11	2.32	0.14
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	1.22	1.34	0.22
C & E Loss (ft)	0.05	Cum SA (acres)	0.69	0.26	0.15

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	381.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	380.76	Reach Len. (ft)	209.04	198.49	192.65
Crit W.S. (ft)	377.30	Flow Area (sq ft)	87.90	162.87	32.05
E.G. Slope (ft/ft)	0.001620	Area (sq ft)	87.90	162.87	32.05
Q Total (cfs)	927.00	Flow (cfs)	91.98	799.08	35.94
Top Width (ft)	86.40	Top Width (ft)	48.32	22.62	15.46
Vel Total (ft/s)	3.28	Avg. Vel. (ft/s)	1.05	4.91	1.12
Max Chl Dpth (ft)	8.07	Hydr. Depth (ft)	1.82	7.20	2.07
Conv. Total (cfs)	23034.7	Conv. (cfs)	2285.5	19856.2	893.0
Length Wtd. (ft)	199.07	Wetted Per. (ft)	48.46	27.39	15.93
Min Ch El (ft)	372.69	Shear (lb/sq ft)	0.18	0.60	0.20
Alpha	1.95	Stream Power (lb/ft s)	0.19	2.95	0.23
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	1.62	1.48	0.31
C & E Loss (ft)	0.06	Cum SA (acres)	0.76	0.26	0.16

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	381.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	381.14	Reach Len. (ft)	209.04	198.49	192.65
Crit W.S. (ft)	377.69	Flow Area (sq ft)	106.93	171.53	38.14
E.G. Slope (ft/ft)	0.001675	Area (sq ft)	106.93	171.53	38.14
Q Total (cfs)	1058.00	Flow (cfs)	124.96	886.03	47.01
Top Width (ft)	90.00	Top Width (ft)	51.06	22.62	16.31
Vel Total (ft/s)	3.34	Avg. Vel. (ft/s)	1.17	5.17	1.23
Max Chl Dpth (ft)	8.45	Hydr. Depth (ft)	2.09	7.58	2.34
Conv. Total (cfs)	25848.6	Conv. (cfs)	3053.0	21647.1	1148.6

Length Wtd. (ft)	199.20	Wetted Per. (ft)	51.23	27.39	16.87
Min Ch El (ft)	372.69	Shear (lb/sq ft)	0.22	0.65	0.24
Alpha	2.02	Stream Power (lb/ft s)	0.26	3.38	0.29
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	1.90	1.57	0.36
C & E Loss (ft)	0.06	Cum SA (acres)	0.80	0.26	0.17

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5847

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	399.24	1.45	399.08	2.8	398.92	10.83	398	13.21	397.68
24.43	396	25.01	395.89	35.42	394	37.27	393.74	37.79	393.69
52.7	390.12	52.72	390.12	52.77	390.11	86.22	383	117.82	378.26
133.59	377.77	134.53	377.22	140.83	373.57	146.8	372.61	149.54	373.16
153.94	377.43	154.53	377.49	167.73	378.81	180.08	387.08	185.44	391.87
185.49	391.87	185.84	391.92	189.44	391.94	190.5	392.47	190.93	396
193.6	397.72	193.98	398	194.59	398.26	195.26	398.49	199.97	400
266.19	400	286.7	400.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	133.59	.04	153.94	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
133.59	153.94	184.54	178.51	172.27	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
274.9	286.7	405

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	377.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.		0.040	
W.S. Elev (ft)	376.91	Reach Len. (ft)	184.54	178.51	172.27
Crit W.S. (ft)	375.30	Flow Area (sq ft)		50.73	
E.G. Slope (ft/ft)	0.003116	Area (sq ft)		50.73	
Q Total (cfs)	190.00	Flow (cfs)		190.00	
Top Width (ft)	18.34	Top Width (ft)		18.34	
Vel Total (ft/s)	3.75	Avg. Vel. (ft/s)		3.75	
Max Chl Dpth (ft)	4.30	Hydr. Depth (ft)		2.77	
Conv. Total (cfs)	3404.0	Conv. (cfs)		3404.0	
Length Wtd. (ft)	178.52	Wetted Per. (ft)		20.89	
Min Ch El (ft)	372.61	Shear (lb/sq ft)		0.47	
Alpha	1.00	Stream Power (lb/ft s)		1.77	
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	0.04	0.41	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.23	0.15	0.02

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	378.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	378.04	Reach Len. (ft)	184.54	178.51	172.27
Crit W.S. (ft)	376.55	Flow Area (sq ft)	1.17	72.91	1.85
E.G. Slope (ft/ft)	0.004815	Area (sq ft)	1.17	72.91	1.85
Q Total (cfs)	403.00	Flow (cfs)	0.37	401.62	1.01
Top Width (ft)	35.10	Top Width (ft)	8.66	20.35	6.08
Vel Total (ft/s)	5.31	Avg. Vel. (ft/s)	0.32	5.51	0.55
Max Chl Dpth (ft)	5.43	Hydr. Depth (ft)	0.13	3.58	0.30
Conv. Total (cfs)	5807.8	Conv. (cfs)	5.4	5787.9	14.6
Length Wtd. (ft)	178.95	Wetted Per. (ft)	8.67	23.34	6.11

Min Ch El (ft)	372.61	Shear (lb/sq ft)	0.04	0.94	0.09
Alpha	1.07	Stream Power (lb/ft s)	0.01	5.17	0.05
Frctn Loss (ft)	0.80	Cum Volume (acre-ft)	0.42	0.59	0.05
C & E Loss (ft)	0.03	Cum SA (acres)	0.41	0.16	0.05

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	379.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	379.11	Reach Len. (ft)	184.54	178.51	172.27
Crit W.S. (ft)	377.99	Flow Area (sq ft)	19.62	94.65	13.67
E.G. Slope (ft/ft)	0.006092	Area (sq ft)	19.62	94.65	13.67
Q Total (cfs)	741.00	Flow (cfs)	25.19	697.79	18.03
Top Width (ft)	56.00	Top Width (ft)	21.42	20.35	14.23
Vel Total (ft/s)	5.79	Avg. Vel. (ft/s)	1.28	7.37	1.32
Max Chl Dpth (ft)	6.50	Hydr. Depth (ft)	0.92	4.65	0.96
Conv. Total (cfs)	9493.9	Conv. (cfs)	322.7	8940.2	231.0
Length Wtd. (ft)	179.42	Wetted Per. (ft)	21.49	23.34	14.39
Min Ch El (ft)	372.61	Shear (lb/sq ft)	0.35	1.54	0.36
Alpha	1.53	Stream Power (lb/ft s)	0.45	11.37	0.48
Frctn Loss (ft)	0.87	Cum Volume (acre-ft)	1.03	0.79	0.14
C & E Loss (ft)	0.12	Cum SA (acres)	0.53	0.16	0.09

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	380.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.92	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	379.59	Reach Len. (ft)	184.54	178.51	172.27
Crit W.S. (ft)	378.79	Flow Area (sq ft)	30.80	104.53	20.76
E.G. Slope (ft/ft)	0.006367	Area (sq ft)	30.80	104.53	20.76
Q Total (cfs)	927.00	Flow (cfs)	49.69	841.76	35.54
Top Width (ft)	59.96	Top Width (ft)	24.65	20.35	14.96
Vel Total (ft/s)	5.94	Avg. Vel. (ft/s)	1.61	8.05	1.71
Max Chl Dpth (ft)	6.98	Hydr. Depth (ft)	1.25	5.14	1.39
Conv. Total (cfs)	11617.6	Conv. (cfs)	622.8	10549.3	445.5
Length Wtd. (ft)	179.58	Wetted Per. (ft)	24.76	23.34	15.27
Min Ch El (ft)	372.61	Shear (lb/sq ft)	0.49	1.78	0.54
Alpha	1.68	Stream Power (lb/ft s)	0.80	14.33	0.93
Frctn Loss (ft)	0.87	Cum Volume (acre-ft)	1.34	0.87	0.19
C & E Loss (ft)	0.16	Cum SA (acres)	0.59	0.16	0.09

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	380.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.99	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	379.91	Reach Len. (ft)	184.54	178.51	172.27
Crit W.S. (ft)	379.18	Flow Area (sq ft)	38.83	110.89	25.51
E.G. Slope (ft/ft)	0.006502	Area (sq ft)	38.83	110.89	25.51
Q Total (cfs)	1058.00	Flow (cfs)	69.96	938.62	49.42
Top Width (ft)	62.51	Top Width (ft)	26.74	20.35	15.43
Vel Total (ft/s)	6.04	Avg. Vel. (ft/s)	1.80	8.46	1.94
Max Chl Dpth (ft)	7.30	Hydr. Depth (ft)	1.45	5.45	1.65
Conv. Total (cfs)	13120.6	Conv. (cfs)	867.6	11640.1	612.9
Length Wtd. (ft)	179.66	Wetted Per. (ft)	26.87	23.34	15.83
Min Ch El (ft)	372.61	Shear (lb/sq ft)	0.59	1.93	0.65
Alpha	1.75	Stream Power (lb/ft s)	1.06	16.32	1.27
Frctn Loss (ft)	0.88	Cum Volume (acre-ft)	1.55	0.93	0.22
C & E Loss (ft)	0.18	Cum SA (acres)	0.62	0.16	0.10

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross
sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5668

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	394	2.83	394	6.39	393.53	8.52	393.37	9.42	393.29
10.04	393.25	11.67	393.09	12.4	393.05	13.26	392.96	14.13	392.92
15.52	392.77	18.5	392.7	19.6	392.59	28.55	392.15	30.78	392
32.39	391.8	32.82	391.76	37.1	391.21	42.85	390.73	45	390.55
46.39	390.5	46.97	390.47	47.22	390.45	51.29	390	56.62	389.6
57.93	389.52	62.13	389.24	67.84	388.94	71.82	388.7	73.9	388.59
77.36	388.37	78.88	388.27	82.49	388	88.83	387.18	98.59	385.99
104.13	385.21	105.71	385.01	107.69	384.8	110.1	384.48	116.68	384
117.78	383.94	120.53	383.72	121.02	383.67	122.28	383.55	123.44	383.42
125.71	383.18	130.86	382.57	135.53	382	147.05	380.28	172.82	377.69
200.62	376.14	220.02	376.22	238.56	376.33	240.62	376.34	244.41	372.35
247.08	371.75	250.38	372.58	255.86	374.91	258.75	376.54	258.77	376.55
273.07	384.62	286.6	395.41	293.35	398.75	298.49	401.68	303.94	403.42
314.05	402	314.97	401.91	328.12	402	400.84	402	419.1	402.23

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	240.62	.04	258.75	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
240.62	258.75	144.79	148.68	152.52	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
398.6	419.1	405

CROSS SECTION OUTPUT Profile #2-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	376.53	Element			
Vel Head (ft)	0.24	Wt. n-Val.	0.085	0.040	
W.S. Elev (ft)	376.29	Reach Len. (ft)	144.79	148.68	152.52
Crit W.S. (ft)	374.81	Flow Area (sq ft)	2.59	47.86	
E.G. Slope (ft/ft)	0.003626	Area (sq ft)	2.59	47.86	
Q Total (cfs)	190.00	Flow (cfs)	0.50	189.50	
Top Width (ft)	50.64	Top Width (ft)	33.01	17.63	
Vel Total (ft/s)	3.77	Avg. Vel. (ft/s)	0.19	3.96	
Max Chl Dpth (ft)	4.54	Hydr. Depth (ft)	0.08	2.72	
Conv. Total (cfs)	3155.2	Conv. (cfs)	8.3	3146.9	
Length Wtd. (ft)	148.62	Wetted Per. (ft)	33.01	20.32	
Min Ch El (ft)	371.75	Shear (lb/sq ft)	0.02	0.53	
Alpha	1.10	Stream Power (lb/ft s)	0.00	2.11	
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	0.04	0.21	0.01
C & E Loss (ft)	0.02	Cum SA (acres)	0.16	0.08	0.02

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #10-YR

			Left OB	Channel	Right OB
E.G. Elev (ft)	377.67	Element			
Vel Head (ft)	0.36	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	377.32	Reach Len. (ft)	144.79	148.68	152.52
Crit W.S. (ft)	376.07	Flow Area (sq ft)	55.94	66.54	0.54
E.G. Slope (ft/ft)	0.004128	Area (sq ft)	55.94	66.54	0.54
Q Total (cfs)	403.00	Flow (cfs)	59.19	343.51	0.30
Top Width (ft)	80.66	Top Width (ft)	61.14	18.13	1.38
Vel Total (ft/s)	3.28	Avg. Vel. (ft/s)	1.06	5.16	0.55
Max Chl Dpth (ft)	5.57	Hydr. Depth (ft)	0.91	3.67	0.39
Conv. Total (cfs)	6272.6	Conv. (cfs)	921.3	5346.7	4.6
Length Wtd. (ft)	148.01	Wetted Per. (ft)	61.18	20.92	1.59
Min Ch El (ft)	371.75	Shear (lb/sq ft)	0.24	0.82	0.09

Alpha	2.13	Stream Power (lb/ft s)	0.25	4.23	0.05
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	0.30	0.31	0.05
C & E Loss (ft)	0.00	Cum SA (acres)	0.26	0.08	0.04

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	378.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	378.53	Reach Len. (ft)	144.79	148.68	152.52
Crit W.S. (ft)	377.51	Flow Area (sq ft)	140.10	88.44	3.50
E.G. Slope (ft/ft)	0.003617	Area (sq ft)	140.10	88.44	3.50
Q Total (cfs)	741.00	Flow (cfs)	221.01	516.65	3.35
Top Width (ft)	97.78	Top Width (ft)	76.13	18.13	3.52
Vel Total (ft/s)	3.19	Avg. Vel. (ft/s)	1.58	5.84	0.96
Max Chl Dpth (ft)	6.78	Hydr. Depth (ft)	1.84	4.88	0.99
Conv. Total (cfs)	12321.8	Conv. (cfs)	3675.1	8591.1	55.6
Length Wtd. (ft)	147.53	Wetted Per. (ft)	76.21	20.92	4.04
Min Ch El (ft)	371.75	Shear (lb/sq ft)	0.42	0.95	0.20
Alpha	2.41	Stream Power (lb/ft s)	0.65	5.58	0.19
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	0.69	0.41	0.11
C & E Loss (ft)	0.00	Cum SA (acres)	0.33	0.08	0.05

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	379.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	379.09	Reach Len. (ft)	144.79	148.68	152.52
Crit W.S. (ft)	377.91	Flow Area (sq ft)	184.71	98.69	5.78
E.G. Slope (ft/ft)	0.003367	Area (sq ft)	184.71	98.69	5.78
Q Total (cfs)	927.00	Flow (cfs)	322.31	598.40	6.29
Top Width (ft)	104.41	Top Width (ft)	81.75	18.13	4.52
Vel Total (ft/s)	3.21	Avg. Vel. (ft/s)	1.74	6.06	1.09
Max Chl Dpth (ft)	7.34	Hydr. Depth (ft)	2.26	5.44	1.28
Conv. Total (cfs)	15976.7	Conv. (cfs)	5554.9	10313.4	108.4
Length Wtd. (ft)	147.41	Wetted Per. (ft)	81.87	20.92	5.19
Min Ch El (ft)	371.75	Shear (lb/sq ft)	0.47	0.99	0.23
Alpha	2.41	Stream Power (lb/ft s)	0.83	6.01	0.25
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	0.88	0.46	0.14
C & E Loss (ft)	0.00	Cum SA (acres)	0.36	0.08	0.06

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	379.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	379.45	Reach Len. (ft)	144.79	148.68	152.52
Crit W.S. (ft)	378.13	Flow Area (sq ft)	214.71	105.20	7.52
E.G. Slope (ft/ft)	0.003249	Area (sq ft)	214.71	105.20	7.52
Q Total (cfs)	1058.00	Flow (cfs)	395.37	653.85	8.77
Top Width (ft)	108.61	Top Width (ft)	85.32	18.13	5.16
Vel Total (ft/s)	3.23	Avg. Vel. (ft/s)	1.84	6.22	1.17
Max Chl Dpth (ft)	7.70	Hydr. Depth (ft)	2.52	5.80	1.46
Conv. Total (cfs)	18562.7	Conv. (cfs)	6936.8	11471.9	154.0
Length Wtd. (ft)	147.34	Wetted Per. (ft)	85.46	20.92	5.93
Min Ch El (ft)	371.75	Shear (lb/sq ft)	0.51	1.02	0.26
Alpha	2.41	Stream Power (lb/ft s)	0.94	6.34	0.30
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	1.01	0.49	0.16
C & E Loss (ft)	0.00	Cum SA (acres)	0.38	0.08	0.06

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5520

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.57	1.77	392.5	2.21	392.46	11.92	392	17.09	391.5
24.53	390.74	26.95	390.45	31.64	390	34.16	389.82	35.17	389.71
39.42	389.35	45.83	388.73	54.99	388.04	61.37	387.47	63.9	387.27

66.26	387.15	67.44	387.06	71.13	386.95	79.52	386.38	86.54	385.85
89.06	385.64	90.11	385.57	94.2	385.24	97.92	384.9	101.16	384.58
106.52	384	115.88	383.23	119.25	382.99	122.02	382.84	123.86	382.73
125.85	382.65	131.94	382.26	139.57	381.73	153.36	380.63	161.65	380
162.55	379.95	187.97	378	190.84	377.16	211.86	375.32	242.87	374.82
245.72	374.78	248.59	373.11	256.95	371.96	257.18	372.1	260.09	374.7
262.9	375.22	269	376.34	285.23	385.77	295.6	394.02	300.61	398.04
301.69	400	307.46	401.12	309.84	401.46	313.85	402	342.38	402.99
343.02	402.99	351.56	403.37	352.31	403.37	354.24	403.43	354.97	403.43
356.01	403.47	356.73	403.46	357.34	403.48	358.02	403.47	359.97	403.54
361.28	403.52	361.75	403.54	388.95	403.44				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	245.72	.04	260.09	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
245.72	260.09	75.07	77.35	79.63	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
373.3	388.95	405

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	375.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	375.31	Reach Len. (ft)	75.07	77.35	79.63
Crit W.S. (ft)	374.73	Flow Area (sq ft)	8.97	33.46	1.01
E.G. Slope (ft/ft)	0.008095	Area (sq ft)	8.97	33.46	1.01
Q Total (cfs)	190.00	Flow (cfs)	5.87	183.41	0.71
Top Width (ft)	51.05	Top Width (ft)	33.37	14.37	3.31
Vel Total (ft/s)	4.37	Avg. Vel. (ft/s)	0.66	5.48	0.71
Max Chl Dpth (ft)	3.35	Hydr. Depth (ft)	0.27	2.33	0.31
Conv. Total (cfs)	2111.7	Conv. (cfs)	65.3	2038.5	7.9
Length Wtd. (ft)	77.33	Wetted Per. (ft)	33.37	15.93	3.37
Min Ch El (ft)	371.96	Shear (lb/sq ft)	0.14	1.06	0.15
Alpha	1.52	Stream Power (lb/ft s)	0.09	5.82	0.11
Frctn Loss (ft)	0.42	Cum Volume (acre-ft)	0.02	0.07	0.01
C & E Loss (ft)	0.07	Cum SA (acres)	0.05	0.03	0.01

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	377.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	376.62	Reach Len. (ft)	75.07	77.35	79.63
Crit W.S. (ft)	376.01	Flow Area (sq ft)	63.10	52.31	9.89
E.G. Slope (ft/ft)	0.004865	Area (sq ft)	63.10	52.31	9.89
Q Total (cfs)	403.00	Flow (cfs)	91.29	299.43	12.29
Top Width (ft)	72.53	Top Width (ft)	48.76	14.37	9.40
Vel Total (ft/s)	3.22	Avg. Vel. (ft/s)	1.45	5.72	1.24
Max Chl Dpth (ft)	4.66	Hydr. Depth (ft)	1.29	3.64	1.05
Conv. Total (cfs)	5778.0	Conv. (cfs)	1308.9	4293.0	176.1
Length Wtd. (ft)	77.06	Wetted Per. (ft)	48.82	15.93	9.62
Min Ch El (ft)	371.96	Shear (lb/sq ft)	0.39	1.00	0.31
Alpha	2.40	Stream Power (lb/ft s)	0.57	5.71	0.39
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	0.10	0.10	0.03
C & E Loss (ft)	0.02	Cum SA (acres)	0.08	0.03	0.02

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	378.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	378.00	Reach Len. (ft)	75.07	77.35	79.63
Crit W.S. (ft)	376.88	Flow Area (sq ft)	138.43	72.15	24.51
E.G. Slope (ft/ft)	0.003610	Area (sq ft)	138.43	72.15	24.51
Q Total (cfs)	741.00	Flow (cfs)	259.63	440.77	40.60
Top Width (ft)	83.95	Top Width (ft)	57.81	14.37	11.77
Vel Total (ft/s)	3.15	Avg. Vel. (ft/s)	1.88	6.11	1.66
Max Chl Dpth (ft)	6.04	Hydr. Depth (ft)	2.39	5.02	2.08

Conv. Total (cfs)	12333.0	Conv. (cfs)	4321.2	7336.1	675.7
Length Wtd. (ft)	76.85	Wetted Per. (ft)	58.01	15.93	12.37
Min Ch El (ft)	371.96	Shear (lb/sq ft)	0.54	1.02	0.45
Alpha	2.37	Stream Power (lb/ft s)	1.01	6.24	0.74
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	0.22	0.14	0.06
C & E Loss (ft)	0.00	Cum SA (acres)	0.10	0.03	0.02

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	378.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	378.56	Reach Len. (ft)	75.07	77.35	79.63
Crit W.S. (ft)	377.30	Flow Area (sq ft)	172.80	80.18	31.36
E.G. Slope (ft/ft)	0.003582	Area (sq ft)	172.80	80.18	31.36
Q Total (cfs)	927.00	Flow (cfs)	345.81	523.59	57.60
Top Width (ft)	92.20	Top Width (ft)	65.10	14.37	12.74
Vel Total (ft/s)	3.26	Avg. Vel. (ft/s)	2.00	6.53	1.84
Max Chl Dpth (ft)	6.60	Hydr. Depth (ft)	2.65	5.58	2.46
Conv. Total (cfs)	15488.6	Conv. (cfs)	5777.9	8748.3	962.3
Length Wtd. (ft)	76.79	Wetted Per. (ft)	65.32	15.93	13.49
Min Ch El (ft)	371.96	Shear (lb/sq ft)	0.59	1.13	0.52
Alpha	2.43	Stream Power (lb/ft s)	1.18	7.35	0.96
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	0.29	0.15	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.12	0.03	0.03

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	379.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	378.91	Reach Len. (ft)	75.07	77.35	79.63
Crit W.S. (ft)	377.51	Flow Area (sq ft)	196.43	85.22	35.93
E.G. Slope (ft/ft)	0.003578	Area (sq ft)	196.43	85.22	35.93
Q Total (cfs)	1058.00	Flow (cfs)	408.97	579.20	69.83
Top Width (ft)	97.38	Top Width (ft)	69.67	14.37	13.34
Vel Total (ft/s)	3.33	Avg. Vel. (ft/s)	2.08	6.80	1.94
Max Chl Dpth (ft)	6.95	Hydr. Depth (ft)	2.82	5.93	2.69
Conv. Total (cfs)	17688.6	Conv. (cfs)	6837.5	9683.6	1167.4
Length Wtd. (ft)	76.75	Wetted Per. (ft)	69.91	15.93	14.18
Min Ch El (ft)	371.96	Shear (lb/sq ft)	0.63	1.19	0.57
Alpha	2.45	Stream Power (lb/ft s)	1.31	8.12	1.10
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	0.33	0.16	0.08
C & E Loss (ft)	0.00	Cum SA (acres)	0.12	0.03	0.03

CROSS SECTION

RIVER: Little Plumtree
REACH: Little Plumtree RS: 5442

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400	20.17	400	24.58	399.47	27.23	399.5	29.22	399.34
30.21	399.33	37.26	398.97	52.02	398	59.75	397.4	62.81	397.22
78.24	396	88.72	395.02	98.46	394	132.72	392.26	154.81	390
176.04	388	202.11	386.21	204.71	386	230.38	384.54	231.24	384.52
234.24	384	262.33	382.28	263.68	382.25	263.99	382.19	264.46	382.22
264.94	382.15	268.52	382	279.94	381.74	286.41	381.5	298.54	380.78
301.9	380.67	308.4	380.64	312.15	380.5	314.49	380.5	320.11	380
330.71	379.38	337.1	379.1	348.09	377.94	371.78	376.41	397.93	374.82
410.38	374.17	410.4	374.17	413.82	374	416.13	371.71	419.17	371.22
424.47	371.54	428.14	373.48	431.85	373.94	435.55	374.4	448.44	380.81
457.31	388.52	469.69	395.98	474.76	398.6	475.05	398.8	476.32	399.44
478.66	400.4	482.42	401.51	484.65	402	492.73	402	500.99	402.33
511.23	402.63	525.09	402.91	537.02	403.46	539.65	403.5	541.98	403.6
548.32	404	552.12	404.33	555.02	404.48	558.6	404.56		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.085	413.82	.04	428.14	.085

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
413.82	428.14	0	0	.3	.5

CROSS SECTION OUTPUT Profile #2-YR

E.G. Elev (ft)	375.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	375.05	Reach Len. (ft)			
Crit W.S. (ft)	373.68	Flow Area (sq ft)	10.69	44.76	8.66
E.G. Slope (ft/ft)	0.002781	Area (sq ft)	10.69	44.76	8.66
Q Total (cfs)	190.00	Flow (cfs)	6.55	175.62	7.83
Top Width (ft)	42.74	Top Width (ft)	19.70	14.32	8.72
Vel Total (ft/s)	2.96	Avg. Vel. (ft/s)	0.61	3.92	0.90
Max Chl Dpth (ft)	3.83	Hydr. Depth (ft)	0.54	3.13	0.99
Conv. Total (cfs)	3602.9	Conv. (cfs)	124.2	3330.3	148.5
Length Wtd. (ft)		Wetted Per. (ft)	19.72	15.79	8.93
Min Ch El (ft)	371.22	Shear (lb/sq ft)	0.09	0.49	0.17
Alpha	1.63	Stream Power (lb/ft s)	0.06	1.93	0.15
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #10-YR

E.G. Elev (ft)	376.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	376.38	Reach Len. (ft)			
Crit W.S. (ft)	375.01	Flow Area (sq ft)	51.57	63.85	22.08
E.G. Slope (ft/ft)	0.002782	Area (sq ft)	51.57	63.85	22.08
Q Total (cfs)	403.00	Flow (cfs)	54.78	317.52	30.69
Top Width (ft)	67.34	Top Width (ft)	41.62	14.32	11.40
Vel Total (ft/s)	2.93	Avg. Vel. (ft/s)	1.06	4.97	1.39
Max Chl Dpth (ft)	5.16	Hydr. Depth (ft)	1.24	4.46	1.94
Conv. Total (cfs)	7640.8	Conv. (cfs)	1038.7	6020.1	581.9
Length Wtd. (ft)		Wetted Per. (ft)	41.69	15.79	11.92
Min Ch El (ft)	371.22	Shear (lb/sq ft)	0.21	0.70	0.32
Alpha	2.30	Stream Power (lb/ft s)	0.23	3.49	0.45
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #50-YR

E.G. Elev (ft)	378.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	377.75	Reach Len. (ft)			
Crit W.S. (ft)	376.20	Flow Area (sq ft)	122.56	83.34	39.45
E.G. Slope (ft/ft)	0.002784	Area (sq ft)	122.56	83.34	39.45
Q Total (cfs)	741.00	Flow (cfs)	176.50	495.10	69.40
Top Width (ft)	91.17	Top Width (ft)	62.71	14.32	14.14
Vel Total (ft/s)	3.02	Avg. Vel. (ft/s)	1.44	5.94	1.76
Max Chl Dpth (ft)	6.53	Hydr. Depth (ft)	1.95	5.82	2.79
Conv. Total (cfs)	14043.8	Conv. (cfs)	3345.1	9383.5	1315.2
Length Wtd. (ft)		Wetted Per. (ft)	62.83	15.79	14.98
Min Ch El (ft)	371.22	Shear (lb/sq ft)	0.34	0.92	0.46
Alpha	2.67	Stream Power (lb/ft s)	0.49	5.45	0.81
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #100-YR

E.G. Elev (ft)	378.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	378.31	Reach Len. (ft)			
Crit W.S. (ft)	376.69	Flow Area (sq ft)	160.37	91.49	47.83
E.G. Slope (ft/ft)	0.002781	Area (sq ft)	160.37	91.49	47.83
Q Total (cfs)	927.00	Flow (cfs)	258.35	578.13	90.52
Top Width (ft)	98.88	Top Width (ft)	69.28	14.32	15.28
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	1.61	6.32	1.89
Max Chl Dpth (ft)	7.09	Hydr. Depth (ft)	2.31	6.39	3.13
Conv. Total (cfs)	17579.3	Conv. (cfs)	4899.3	10963.4	1716.6
Length Wtd. (ft)		Wetted Per. (ft)	69.42	15.79	16.26
Min Ch El (ft)	371.22	Shear (lb/sq ft)	0.40	1.01	0.51
Alpha	2.71	Stream Power (lb/ft s)	0.65	6.35	0.97

Frctn Loss (ft)		Cum Volume (acre-ft)	
C & E Loss (ft)		Cum SA (acres)	

CROSS SECTION OUTPUT Profile #7-30-2016

E.G. Elev (ft)	379.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.085	0.040	0.085
W.S. Elev (ft)	378.67	Reach Len. (ft)			
Crit W.S. (ft)	376.98	Flow Area (sq ft)	185.75	96.61	53.42
E.G. Slope (ft/ft)	0.002780	Area (sq ft)	185.75	96.61	53.42
Q Total (cfs)	1058.00	Flow (cfs)	319.63	632.99	105.39
Top Width (ft)	102.99	Top Width (ft)	72.67	14.32	16.00
Vel Total (ft/s)	3.15	Avg. Vel. (ft/s)	1.72	6.55	1.97
Max Chl Dpth (ft)	7.45	Hydr. Depth (ft)	2.56	6.75	3.34
Conv. Total (cfs)	20066.0	Conv. (cfs)	6062.0	12005.2	1998.8
Length Wtd. (ft)		Wetted Per. (ft)	72.83	15.79	17.06
Min Ch El (ft)	371.22	Shear (lb/sq ft)	0.44	1.06	0.54
Alpha	2.72	Stream Power (lb/ft s)	0.76	6.96	1.07
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:Little Plumtree

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7
Little Plumtree	9415	.075	.04	.075				
Little Plumtree	9282	.065	.04	.065				
Little Plumtree	9224	.065	.04	.065				
Little Plumtree	9100	Culvert						
Little Plumtree	9094	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	9033	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8938	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8776	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8628	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8459	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8329	.025	.055	.016	.055	.025	.065	
Little Plumtree	8166	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	8010	.065	.025	.055	.016	.055	.025	.065
Little Plumtree	7921	.075	.025	.055	.016	.075	.025	.065
Little Plumtree	7800	Culvert						
Little Plumtree	7735	.075	.04	.055	.025	.065		
Little Plumtree	7717	Lat Struct						
Little Plumtree	7645	.025	.075	.055	.04	.055	.025	.065
Little Plumtree	7560	.065	.055	.04	.055	.025	.065	
Little Plumtree	7499	.025	.055	.04	.055	.025	.065	
Little Plumtree	7437	.025	.055	.04	.055	.025	.065	
Little Plumtree	7400	Bridge						
Little Plumtree	7358	.025	.055	.04	.055	.025	.065	
Little Plumtree	7340	Lat Struct						
Little Plumtree	7261	.025	.085	.04	.085			
Little Plumtree	7059	.025	.055	.04	.085	.025		
Little Plumtree	6890	.025	.085	.055	.04	.085	.025	
Little Plumtree	6690	.085	.04	.085				
Little Plumtree	6326	.085	.04	.085				
Little Plumtree	6045	.085	.04	.085				
Little Plumtree	5847	.085	.04	.085				
Little Plumtree	5668	.085	.04	.085				
Little Plumtree	5520	.085	.04	.085				
Little Plumtree	5442	.085	.04	.085				

SUMMARY OF REACH LENGTHS

River: Little Plumtree

Reach	River Sta.	Left	Channel	Right

Little Plumtree	9415	133.08	132.78	133.29
Little Plumtree	9282	61.4	57.86	54.02
Little Plumtree	9224	128.56	130.35	131.84
Little Plumtree	9100	Culvert		
Little Plumtree	9094	57.37	60.69	64.17
Little Plumtree	9033	96.95	94.72	92.33
Little Plumtree	8938	163.23	161.92	160.75
Little Plumtree	8776	150.65	147.84	144.92
Little Plumtree	8628	174.55	169.35	164.24
Little Plumtree	8459	130.02	130.06	129.9
Little Plumtree	8329	163	162.96	163.01
Little Plumtree	8166	156.55	156.02	156.27
Little Plumtree	8010	48.73	88.82	110.46
Little Plumtree	7921	168.2	186.1	189.78
Little Plumtree	7800	Culvert		
Little Plumtree	7735	142.82	90.04	69.09
Little Plumtree	7717	Lat Struct		
Little Plumtree	7645	85.44	84.61	84.17
Little Plumtree	7560	62.59	61.86	60.62
Little Plumtree	7499	62.52	61.98	61.21
Little Plumtree	7437	78.48	78.48	79.28
Little Plumtree	7400	Bridge		
Little Plumtree	7358	88.04	96.77	105.03
Little Plumtree	7340	Lat Struct		
Little Plumtree	7261	198.31	202.16	205.99
Little Plumtree	7059	168.76	169.64	170.29
Little Plumtree	6890	197.24	199.49	199.59
Little Plumtree	6690	377.18	363.89	351.23
Little Plumtree	6326	271.56	280.95	283.31
Little Plumtree	6045	209.04	198.49	192.65
Little Plumtree	5847	184.54	178.51	172.27
Little Plumtree	5668	144.79	148.68	152.52
Little Plumtree	5520	75.07	77.35	79.63
Little Plumtree	5442	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Little Plumtree

Reach	River Sta.	Contr.	Expan.
Little Plumtree	9415	.1	.3
Little Plumtree	9282	.1	.3
Little Plumtree	9224	.3	.5
Little Plumtree	9100	Culvert	
Little Plumtree	9094	.3	.5
Little Plumtree	9033	.1	.3
Little Plumtree	8938	.1	.3
Little Plumtree	8776	.1	.3
Little Plumtree	8628	.1	.3
Little Plumtree	8459	.1	.3
Little Plumtree	8329	.1	.3
Little Plumtree	8166	.1	.3
Little Plumtree	8010	.1	.3
Little Plumtree	7921	.3	.5
Little Plumtree	7800	Culvert	
Little Plumtree	7735	.3	.5
Little Plumtree	7717	Lat Struct	
Little Plumtree	7645	.1	.3
Little Plumtree	7560	.1	.3
Little Plumtree	7499	.1	.3
Little Plumtree	7437	.3	.5
Little Plumtree	7400	Bridge	
Little Plumtree	7358	.3	.5
Little Plumtree	7340	Lat Struct	
Little Plumtree	7261	.1	.3
Little Plumtree	7059	.1	.3
Little Plumtree	6890	.1	.3
Little Plumtree	6690	.1	.3
Little Plumtree	6326	.1	.3
Little Plumtree	6045	.1	.3
Little Plumtree	5847	.1	.3

Little Plumtree	5668	.1	.3
Little Plumtree	5520	.1	.3
Little Plumtree	5442	.3	.5

HEC-RAS Plan: V River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	9415	2-YR	189.00	396.28	399.85	398.73	400.06	0.003815	3.61	52.39	25.43	0.44
Little Plumtree	9415	10-YR	397.00	396.28	401.70	399.74	401.89	0.001740	3.59	137.51	66.42	0.33
Little Plumtree	9415	50-YR	698.00	396.28	402.59	400.80	402.90	0.002271	4.74	203.80	81.51	0.39
Little Plumtree	9415	100-YR	862.00	396.28	402.97	401.26	403.34	0.002515	5.26	236.06	89.98	0.42
Little Plumtree	9415	7-30-2016	945.00	396.28	403.14	401.45	403.54	0.002652	5.51	251.18	94.82	0.43
Little Plumtree	9282	2-YR	189.00	395.11	399.47	397.90	399.63	0.002448	3.21	61.43	32.28	0.35
Little Plumtree	9282	10-YR	397.00	395.11	401.53	399.03	401.68	0.001166	3.28	165.14	74.91	0.27
Little Plumtree	9282	50-YR	698.00	395.11	402.35	400.09	402.62	0.001800	4.54	239.19	108.67	0.34
Little Plumtree	9282	100-YR	862.00	395.11	402.71	400.61	403.02	0.002049	5.06	280.68	125.78	0.37
Little Plumtree	9282	7-30-2016	945.00	395.11	402.86	400.84	403.20	0.002166	5.29	300.56	132.43	0.38
Little Plumtree	9224	2-YR	189.00	395.12	399.39	397.47	399.50	0.001519	2.60	72.56	27.75	0.28
Little Plumtree	9224	10-YR	397.00	395.12	401.49	398.46	401.62	0.000892	2.88	152.81	55.87	0.24
Little Plumtree	9224	50-YR	698.00	395.12	402.26	399.49	402.52	0.001516	4.18	215.98	110.94	0.32
Little Plumtree	9224	100-YR	862.00	395.12	402.60	399.93	402.91	0.001749	4.67	262.74	158.25	0.35
Little Plumtree	9224	7-30-2016	945.00	395.12	402.75	400.14	403.08	0.001859	4.90	287.37	184.08	0.36
Little Plumtree	9100 Ramblewood Rd		Culvert									
Little Plumtree	9094	2-YR	189.00	394.82	396.86	396.86	397.65	0.003475	7.11	26.57	16.91	1.00
Little Plumtree	9094	10-YR	397.00	394.82	398.51	397.92	399.22	0.001515	6.76	59.42	23.12	0.72
Little Plumtree	9094	50-YR	698.00	394.82	400.41	399.00	401.13	0.000798	6.86	114.37	44.55	0.57
Little Plumtree	9094	100-YR	862.00	394.82	401.50	399.51	402.07	0.000513	6.34	209.21	130.71	0.47
Little Plumtree	9094	7-30-2016	945.00	394.82	402.00	399.74	402.47	0.000404	5.95	278.13	145.71	0.42
Little Plumtree	9033	2-YR	189.00	394.25	396.28	396.45	397.33	0.004712	8.19	23.09	15.20	1.16
Little Plumtree	9033	10-YR	397.00	394.25	397.56	397.56	398.91	0.002770	9.37	45.59	20.08	0.98
Little Plumtree	9033	50-YR	698.00	394.25	398.81	398.81	400.71	0.002436	11.21	73.69	24.92	0.98
Little Plumtree	9033	100-YR	862.00	394.25	399.43	399.43	401.55	0.002273	11.90	90.55	29.53	0.97
Little Plumtree	9033	7-30-2016	945.00	394.25	399.94	399.75	401.96	0.001904	11.67	107.47	41.17	0.90
Little Plumtree	8938	2-YR	189.00	393.85	396.03	396.12	396.99	0.003944	7.83	24.21	15.40	1.07
Little Plumtree	8938	10-YR	397.00	393.85	397.13	397.25	398.62	0.003180	9.84	43.74	20.42	1.05
Little Plumtree	8938	50-YR	698.00	393.85	398.27	398.55	400.43	0.002971	11.99	70.08	25.92	1.07
Little Plumtree	8938	100-YR	862.00	393.85	398.81	399.17	401.28	0.002868	12.85	85.23	30.16	1.07
Little Plumtree	8938	7-30-2016	945.00	393.85	400.26	400.26	401.61	0.001162	9.87	165.03	102.76	0.72
Little Plumtree	8776	2-YR	189.00	392.95	394.87	395.17	396.13	0.006300	8.99	21.02	14.66	1.32
Little Plumtree	8776	10-YR	397.00	392.95	395.74	396.28	397.84	0.005680	11.64	35.60	18.84	1.36
Little Plumtree	8776	50-YR	698.00	392.95	396.77	397.57	399.71	0.004926	13.89	57.56	23.81	1.34
Little Plumtree	8776	100-YR	862.00	392.95	397.25	398.12	400.58	0.004709	14.85	69.47	26.13	1.34
Little Plumtree	8776	7-30-2016	945.00	392.95	397.51	398.46	400.95	0.004480	15.15	76.51	27.65	1.33
Little Plumtree	8628	2-YR	189.00	391.99	393.81	394.17	395.15	0.006848	9.26	20.41	14.48	1.37
Little Plumtree	8628	10-YR	397.00	391.99	394.62	395.26	396.89	0.006924	12.11	33.38	18.08	1.47
Little Plumtree	8628	50-YR	698.00	391.99	395.53	396.53	398.84	0.006293	14.68	52.02	22.76	1.49
Little Plumtree	8628	100-YR	862.00	391.99	395.97	397.12	399.74	0.006027	15.72	62.59	25.67	1.49
Little Plumtree	8628	7-30-2016	945.00	391.99	396.19	398.18	400.14	0.005850	16.14	68.38	27.12	1.49
Little Plumtree	8459	2-YR	189.00	391.22	392.86	393.14	393.98	0.006229	8.50	22.23	17.06	1.31
Little Plumtree	8459	10-YR	397.00	391.22	393.52	394.10	395.59	0.007670	11.54	34.45	19.80	1.53
Little Plumtree	8459	50-YR	698.00	391.22	394.16	395.21	397.56	0.008736	14.81	47.89	22.42	1.70
Little Plumtree	8459	100-YR	862.00	391.22	394.48	395.74	398.47	0.008653	16.06	55.32	23.74	1.73
Little Plumtree	8459	7-30-2016	945.00	391.22	394.64	395.99	398.89	0.008511	16.57	59.27	24.68	1.74
Little Plumtree	8329	2-YR	189.00	390.59	392.25	392.43	393.20	0.005056	7.83	24.13	17.89	1.19
Little Plumtree	8329	10-YR	397.00	390.59	393.02	393.39	394.63	0.005296	10.19	39.10	20.93	1.29
Little Plumtree	8329	50-YR	698.00	390.59	393.70	394.48	396.42	0.006002	13.24	54.24	23.64	1.44
Little Plumtree	8329	100-YR	862.00	390.59	395.91	395.01	396.94	0.001063	8.37	149.74	117.11	0.67
Little Plumtree	8329	7-30-2016	945.00	390.59	396.29	395.26	397.17	0.000871	7.97	212.25	180.79	0.62
Little Plumtree	8166	2-YR	189.00	389.90	392.26	391.86	392.71	0.001648	5.42	35.05	20.25	0.71
Little Plumtree	8166	10-YR	397.00	389.90	393.52	392.84	394.18	0.001240	6.58	64.49	28.70	0.67
Little Plumtree	8166	50-YR	698.00	389.90	395.22	393.94	395.84	0.000697	6.66	176.34	134.72	0.54
Little Plumtree	8166	100-YR	862.00	389.90	396.26	395.01	396.62	0.000374	5.57	339.78	180.14	0.41
Little Plumtree	8166	7-30-2016	945.00	389.90	396.57	395.30	396.90	0.000336	5.47	399.08	193.07	0.39
Little Plumtree	8010	2-YR	189.00	388.95	391.52	391.52	392.33	0.003365	7.24	26.39	33.12	1.00
Little Plumtree	8010	10-YR	397.00	388.95	392.57	392.57	393.85	0.002797	9.14	46.60	44.00	0.99
Little Plumtree	8010	50-YR	698.00	388.95	393.79	393.79	395.56	0.002364	10.81	75.84	54.85	0.97
Little Plumtree	8010	100-YR	862.00	388.95	394.37	394.37	396.36	0.002233	11.52	91.68	61.76	0.96
Little Plumtree	8010	7-30-2016	945.00	388.95	395.28	395.28	396.71	0.001317	10.01	144.57	136.26	0.76
Little Plumtree	7921	2-YR	189.00	387.21	389.95	388.55	389.98	0.000122	1.53	124.20	72.86	0.20
Little Plumtree	7921	10-YR	397.00	387.21	391.28	389.09	391.33	0.000086	1.85	216.00	83.18	0.18
Little Plumtree	7921	50-YR	698.00	387.21	393.01	389.61	393.08	0.000062	2.10	335.54	129.15	0.17
Little Plumtree	7921	100-YR	862.00	387.21	393.89	389.84	393.96	0.000054	2.20	396.15	142.58	0.16
Little Plumtree	7921	7-30-2016	945.00	387.21	394.34	389.94	394.42	0.000051	2.23	427.39	149.79	0.16
Little Plumtree	7800 N. Chatham Rd		Culvert									
Little Plumtree	7735	2-YR	189.00	386.40	389.48	388.48	389.55	0.001731	2.26	86.29	86.54	0.30

HEC-RAS Plan: V River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	7735	10-YR	397.00	386.40	390.28	389.00	390.44	0.002236	3.26	125.44	101.65	0.36
Little Plumtree	7735	50-YR	698.00	386.40	391.28	389.60	391.54	0.002314	4.12	174.71	112.08	0.38
Little Plumtree	7735	100-YR	862.00	386.40	391.66	389.87	391.98	0.002525	4.60	193.31	114.71	0.41
Little Plumtree	7735	7-30-2016	945.00	386.40	391.85	390.00	392.20	0.002598	4.81	202.60	116.03	0.42
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	190.00	386.41	389.12	388.69	389.27	0.005233	3.83	70.46	55.55	0.51
Little Plumtree	7645	10-YR	403.00	386.41	389.84	389.18	390.08	0.005678	4.80	113.52	62.84	0.61
Little Plumtree	7645	50-YR	741.00	386.41	390.96	389.82	391.22	0.004235	4.78	190.19	74.44	0.55
Little Plumtree	7645	100-YR	927.00	386.41	391.33	390.10	391.62	0.004476	5.07	217.96	78.31	0.57
Little Plumtree	7645	7-30-2016	1058.00	386.41	391.49	390.30	391.83	0.004955	5.41	230.76	80.03	0.60
Little Plumtree	7560	2-YR	190.00	385.70	388.80	388.08	388.91	0.002956	3.02	79.57	54.58	0.39
Little Plumtree	7560	10-YR	403.00	385.70	389.42	388.66	389.65	0.004413	4.33	115.99	62.39	0.53
Little Plumtree	7560	50-YR	741.00	385.70	390.69	389.32	390.90	0.002898	4.21	209.67	86.26	0.47
Little Plumtree	7560	100-YR	927.00	385.70	391.03	389.66	391.29	0.003168	4.54	240.62	92.82	0.49
Little Plumtree	7560	7-30-2016	1058.00	385.70	391.15	389.86	391.45	0.003670	4.94	251.81	100.11	0.53
Little Plumtree	7499	2-YR	190.00	385.87	388.24	388.24	388.59	0.011007	5.03	50.38	80.01	0.72
Little Plumtree	7499	10-YR	403.00	385.87	388.72	388.72	389.21	0.013392	6.42	89.53	101.07	0.83
Little Plumtree	7499	50-YR	741.00	385.87	390.57	389.23	390.72	0.002168	3.87	286.97	179.17	0.39
Little Plumtree	7499	100-YR	927.00	385.87	390.94	389.45	391.09	0.002067	3.94	354.38	188.97	0.40
Little Plumtree	7499	7-30-2016	1058.00	385.87	391.06	389.62	391.23	0.002316	4.21	376.45	195.52	0.43
Little Plumtree	7437	2-YR	190.00	383.80	386.82	386.00	387.09	0.006269	4.21	45.18	22.61	0.52
Little Plumtree	7437	10-YR	403.00	383.80	387.95	386.99	388.43	0.007772	5.54	72.80	26.28	0.59
Little Plumtree	7437	50-YR	741.00	383.80	390.05	388.11	390.51	0.004868	5.46	138.27	114.36	0.47
Little Plumtree	7437	100-YR	927.00	383.80	390.17	388.62	390.84	0.007008	6.62	145.23	139.95	0.57
Little Plumtree	7437	7-30-2016	1058.00	383.80	389.88	388.98	390.90	0.011127	8.13	131.45	65.10	0.71
Little Plumtree	7400 School/Church Dr		Bridge									
Little Plumtree	7358	2-YR	190.00	383.89	386.32	385.57	386.55	0.004568	3.86	49.79	42.79	0.49
Little Plumtree	7358	10-YR	403.00	383.89	387.18	386.37	387.67	0.005968	5.64	72.24	57.85	0.59
Little Plumtree	7358	50-YR	741.00	383.89	388.28	387.35	388.63	0.003923	5.22	178.34	77.46	0.54
Little Plumtree	7358	100-YR	927.00	383.89	388.81	387.61	389.16	0.003590	5.32	221.41	86.24	0.52
Little Plumtree	7358	7-30-2016	1058.00	383.89	389.16	387.84	389.52	0.003441	5.41	252.68	95.20	0.51
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	190.00	382.89	386.00	385.31	386.13	0.003141	3.18	85.21	63.12	0.40
Little Plumtree	7261	10-YR	403.00	382.89	386.87	385.94	387.07	0.003569	4.13	142.18	67.86	0.45
Little Plumtree	7261	50-YR	741.00	382.89	387.95	386.62	388.25	0.003654	5.12	220.70	82.04	0.48
Little Plumtree	7261	100-YR	927.00	382.89	388.48	386.94	388.82	0.003525	5.52	267.15	93.46	0.48
Little Plumtree	7261	7-30-2016	1058.00	382.89	388.82	387.13	389.20	0.003422	5.74	300.88	100.94	0.48
Little Plumtree	7059	2-YR	190.00	382.53	385.21	384.37	385.39	0.004281	3.49	61.47	71.12	0.46
Little Plumtree	7059	10-YR	403.00	382.53	386.24	385.39	386.42	0.002829	3.78	137.14	75.73	0.40
Little Plumtree	7059	50-YR	741.00	382.53	387.42	386.03	387.64	0.002182	4.21	230.32	81.26	0.37
Little Plumtree	7059	100-YR	927.00	382.53	388.01	386.31	388.24	0.001959	4.38	278.83	83.99	0.36
Little Plumtree	7059	7-30-2016	1058.00	382.53	388.39	386.48	388.62	0.001858	4.50	310.87	85.75	0.36
Little Plumtree	6890	2-YR	190.00	381.04	384.54	383.48	384.71	0.003733	3.27	58.02	32.06	0.43
Little Plumtree	6890	10-YR	403.00	381.04	385.77	384.41	385.96	0.002652	3.62	131.68	77.23	0.39
Little Plumtree	6890	50-YR	741.00	381.04	387.09	385.52	387.29	0.001875	3.84	238.01	82.97	0.34
Little Plumtree	6890	100-YR	927.00	381.04	387.72	385.84	387.92	0.001668	3.94	291.00	85.69	0.33
Little Plumtree	6890	7-30-2016	1058.00	381.04	388.12	386.03	388.32	0.001576	4.03	325.35	87.90	0.32
Little Plumtree	6690	2-YR	190.00	380.59	383.13	382.66	383.62	0.009306	5.63	36.36	21.74	0.68
Little Plumtree	6690	10-YR	403.00	380.59	384.33	383.80	385.08	0.009346	7.15	67.58	30.39	0.72
Little Plumtree	6690	50-YR	741.00	380.59	385.25	385.10	386.53	0.012476	9.56	99.52	39.52	0.86
Little Plumtree	6690	100-YR	927.00	380.59	385.61	385.61	387.19	0.013985	10.74	114.27	43.33	0.92
Little Plumtree	6690	7-30-2016	1058.00	380.59	385.96	385.96	387.62	0.013465	11.10	129.92	46.86	0.92
Little Plumtree	6326	2-YR	190.00	376.15	378.97	378.67	379.58	0.013648	6.27	30.32	15.74	0.80
Little Plumtree	6326	10-YR	403.00	376.15	380.16	379.84	381.13	0.012820	7.93	56.60	58.65	0.82
Little Plumtree	6326	50-YR	741.00	376.15	381.31	381.31	382.32	0.010201	8.82	139.93	86.72	0.77
Little Plumtree	6326	100-YR	927.00	376.15	381.81	381.74	382.79	0.009148	9.02	185.87	96.65	0.74
Little Plumtree	6326	7-30-2016	1058.00	376.15	382.14	381.97	383.09	0.008449	9.09	218.94	102.34	0.72
Little Plumtree	6045	2-YR	190.00	372.69	377.32	374.62	377.40	0.000797	2.24	85.00	22.95	0.20
Little Plumtree	6045	10-YR	403.00	372.69	378.74	375.57	378.91	0.001178	3.36	136.48	50.87	0.26
Little Plumtree	6045	50-YR	741.00	372.69	380.16	376.74	380.44	0.001521	4.49	232.34	80.73	0.31
Little Plumtree	6045	100-YR	927.00	372.69	380.76	377.30	381.09	0.001620	4.91	282.82	86.40	0.32
Little Plumtree	6045	7-30-2016	1058.00	372.69	381.14	377.69	381.49	0.001675	5.17	316.60	90.00	0.33
Little Plumtree	5847	2-YR	190.00	372.61	376.91	375.30	377.13	0.003116	3.75	50.73	18.34	0.40
Little Plumtree	5847	10-YR	403.00	372.61	378.04	376.55	378.51	0.004815	5.51	75.93	35.10	0.51
Little Plumtree	5847	50-YR	741.00	372.61	379.11	377.99	379.90	0.006092	7.37	127.94	56.00	0.60
Little Plumtree	5847	100-YR	927.00	372.61	379.59	378.79	380.51	0.006367	8.05	156.09	59.96	0.63
Little Plumtree	5847	7-30-2016	1058.00	372.61	379.91	379.18	380.90	0.006502	8.46	175.22	62.51	0.64

HEC-RAS Plan: V River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Little Plumtree	5668	2-YR	190.00	371.75	376.29	374.81	376.53	0.003626	3.96	50.45	50.64	0.42
Little Plumtree	5668	10-YR	403.00	371.75	377.32	376.07	377.67	0.004128	5.16	123.02	80.66	0.48
Little Plumtree	5668	50-YR	741.00	371.75	378.53	377.51	378.91	0.003617	5.84	232.04	97.78	0.47
Little Plumtree	5668	100-YR	927.00	371.75	379.09	377.91	379.48	0.003367	6.06	289.18	104.41	0.46
Little Plumtree	5668	7-30-2016	1058.00	371.75	379.45	378.13	379.84	0.003249	6.22	327.42	108.61	0.45
Little Plumtree	5520	2-YR	190.00	371.96	375.31	374.73	375.76	0.008095	5.48	43.44	51.05	0.63
Little Plumtree	5520	10-YR	403.00	371.96	376.62	376.01	377.01	0.004865	5.72	125.30	72.53	0.53
Little Plumtree	5520	50-YR	741.00	371.96	378.00	376.88	378.37	0.003610	6.11	235.08	83.95	0.48
Little Plumtree	5520	100-YR	927.00	371.96	378.56	377.30	378.96	0.003582	6.53	284.35	92.20	0.49
Little Plumtree	5520	7-30-2016	1058.00	371.96	378.91	377.51	379.34	0.003578	6.80	317.59	97.38	0.49
Little Plumtree	5442	2-YR	190.00	371.22	375.05	373.68	375.27	0.002781	3.92	64.12	42.74	0.39
Little Plumtree	5442	10-YR	403.00	371.22	376.38	375.01	376.69	0.002782	4.97	137.50	67.34	0.42
Little Plumtree	5442	50-YR	741.00	371.22	377.75	376.20	378.12	0.002784	5.94	245.35	91.17	0.43
Little Plumtree	5442	100-YR	927.00	371.22	378.31	376.69	378.72	0.002781	6.32	299.69	98.88	0.44
Little Plumtree	5442	7-30-2016	1058.00	371.22	378.67	376.98	379.09	0.002780	6.55	335.79	102.99	0.44

HEC-RAS Plan: V River: Little Plumtree Reach: Little Plumtree

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	9415	2-YR	400.06	399.85	0.20	0.42	0.01		189.00		25.43	0.47
Little Plumtree	9415	10-YR	401.89	401.70	0.19	0.19	0.01	4.83	370.35	21.82	66.42	0.38
Little Plumtree	9415	50-YR	402.90	402.59	0.31	0.27	0.01	22.09	607.99	67.92	81.51	0.62
Little Plumtree	9415	100-YR	403.34	402.97	0.37	0.30	0.02	32.82	730.60	98.58	89.98	0.74
Little Plumtree	9415	7-30-2016	403.54	403.14	0.40	0.32	0.02	38.31	791.89	114.80	94.82	0.81
Little Plumtree	9282	2-YR	399.63	399.47	0.16	0.11	0.02	0.60	187.35	1.05	32.28	0.35
Little Plumtree	9282	10-YR	401.68	401.53	0.15	0.06	0.01	20.05	344.70	32.25	74.91	0.30
Little Plumtree	9282	50-YR	402.62	402.35	0.26	0.10	0.00	64.12	561.46	72.42	108.67	0.55
Little Plumtree	9282	100-YR	403.02	402.71	0.31	0.11	0.00	97.18	665.23	99.59	125.78	0.67
Little Plumtree	9282	7-30-2016	403.20	402.86	0.34	0.12	0.00	116.91	714.22	113.87	132.43	0.72
Little Plumtree	9224	2-YR	399.50	399.39	0.11				189.00		27.75	0.23
Little Plumtree	9224	10-YR	401.62	401.49	0.13			3.78	386.92	6.30	55.87	0.23
Little Plumtree	9224	50-YR	402.52	402.26	0.26			13.07	655.83	29.11	110.94	0.46
Little Plumtree	9224	100-YR	402.91	402.60	0.31			24.96	780.52	56.52	158.25	0.57
Little Plumtree	9224	7-30-2016	403.08	402.75	0.33			33.38	839.60	72.02	184.08	0.62
Little Plumtree	9100 Ramblewood Rd		Culvert									
Little Plumtree	9094	2-YR	397.65	396.86	0.79	0.25	0.08		189.00		16.91	0.32
Little Plumtree	9094	10-YR	399.22	398.51	0.71	0.12	0.19	0.39	396.61		23.12	0.24
Little Plumtree	9094	50-YR	401.13	400.41	0.72	0.07	0.35	7.51	687.49	3.00	44.55	0.21
Little Plumtree	9094	100-YR	402.07	401.50	0.57	0.05	0.47	22.67	785.64	53.69	130.71	0.17
Little Plumtree	9094	7-30-2016	402.47	402.00	0.47	0.04	0.47	52.15	802.53	90.31	145.71	0.14
Little Plumtree	9033	2-YR	397.33	396.28	1.04	0.38	0.05		188.99	0.01	15.20	0.43
Little Plumtree	9033	10-YR	398.91	397.56	1.35	0.28	0.01	1.50	393.31	2.20	20.08	0.46
Little Plumtree	9033	50-YR	400.71	398.81	1.90	0.26	0.03	8.66	678.66	10.68	24.92	0.58
Little Plumtree	9033	100-YR	401.55	399.43	2.12	0.24	0.03	14.86	830.25	16.88	29.53	0.63
Little Plumtree	9033	7-30-2016	401.96	399.94	2.02	0.15	0.20	19.42	902.07	23.51	41.17	0.58
Little Plumtree	8938	2-YR	396.99	396.03	0.95	0.83	0.03	0.01	188.97	0.02	15.40	0.38
Little Plumtree	8938	10-YR	398.62	397.13	1.49	0.72	0.06	1.68	392.90	2.42	20.42	0.51
Little Plumtree	8938	50-YR	400.43	398.27	2.17	0.64	0.08	8.68	676.68	12.64	25.92	0.68
Little Plumtree	8938	100-YR	401.28	398.81	2.47	0.61	0.09	14.60	827.14	20.26	30.16	0.74
Little Plumtree	8938	7-30-2016	401.61	400.26	1.35	0.46	0.21	37.18	842.17	65.65	102.76	0.40
Little Plumtree	8776	2-YR	396.13	394.87	1.26	0.97	0.01		189.00		14.66	0.53
Little Plumtree	8776	10-YR	397.84	395.74	2.10	0.93	0.02	0.65	395.23	1.12	18.84	0.76
Little Plumtree	8776	50-YR	399.71	396.77	2.94	0.83	0.04	5.76	683.74	8.50	23.81	0.96
Little Plumtree	8776	100-YR	400.58	397.25	3.33	0.79	0.04	10.52	836.37	15.11	26.13	1.05
Little Plumtree	8776	7-30-2016	400.95	397.51	3.44	0.76	0.05	13.43	912.07	19.50	27.65	1.06
Little Plumtree	8628	2-YR	395.15	393.81	1.33	1.11	0.06		189.00		14.48	0.57
Little Plumtree	8628	10-YR	396.89	394.62	2.27	1.24	0.06	0.38	396.45	0.16	18.08	0.85
Little Plumtree	8628	50-YR	398.84	395.53	3.31	1.27	0.01	4.69	689.88	3.44	22.76	1.11
Little Plumtree	8628	100-YR	399.74	395.97	3.77	1.24	0.02	8.99	845.84	7.17	25.67	1.21
Little Plumtree	8628	7-30-2016	400.14	396.19	3.96	1.22	0.03	12.03	923.32	9.65	27.12	1.25
Little Plumtree	8459	2-YR	393.98	392.86	1.12	0.73	0.05		189.00		17.06	0.49
Little Plumtree	8459	10-YR	395.59	393.52	2.07	0.83	0.14		396.98	0.02	19.80	0.81
Little Plumtree	8459	50-YR	397.56	394.16	3.40	0.94	0.21	0.07	696.96	0.96	22.42	1.22
Little Plumtree	8459	100-YR	398.47	394.48	4.00	0.22	0.22	0.47	859.27	2.26	23.74	1.37
Little Plumtree	8459	7-30-2016	398.89	394.64	4.25	0.20	0.29	0.83	941.07	3.10	24.68	1.43
Little Plumtree	8329	2-YR	393.20	392.25	0.95	0.39	0.07		189.00		17.89	0.41
Little Plumtree	8329	10-YR	394.63	393.02	1.61	0.28	0.09	0.08	396.92	0.00	20.93	0.61
Little Plumtree	8329	50-YR	396.42	393.70	2.72	0.18	0.15	1.34	696.02	0.65	23.64	0.94
Little Plumtree	8329	100-YR	396.94	395.91	1.03	0.12	0.20	24.25	810.64	27.11	117.11	0.31
Little Plumtree	8329	7-30-2016	397.17	396.29	0.87	0.10	0.16	57.58	832.95	54.47	180.79	0.27
Little Plumtree	8166	2-YR	392.71	392.26	0.46	0.35	0.04	0.08	188.92		20.25	0.18
Little Plumtree	8166	10-YR	394.18	393.52	0.67	0.27	0.06	2.32	394.18	0.51	28.70	0.22
Little Plumtree	8166	50-YR	395.84	395.22	0.62	0.17	0.11	41.19	626.73	30.08	134.72	0.19
Little Plumtree	8166	100-YR	396.62	396.26	0.36	0.10	0.16	112.63	639.64	109.73	180.14	0.13
Little Plumtree	8166	7-30-2016	396.90	396.57	0.33	0.08	0.11	139.88	662.82	142.30	193.07	0.12
Little Plumtree	8010	2-YR	392.33	391.52	0.81	0.15	0.23	0.21	188.79		33.12	0.33
Little Plumtree	8010	10-YR	393.85	392.57	1.29	0.13	0.37	2.96	393.20	0.83	44.00	0.44
Little Plumtree	8010	50-YR	395.56	393.79	1.77	0.11	0.51	12.07	679.12	6.81	54.85	0.55
Little Plumtree	8010	100-YR	396.36	394.37	1.99	0.10	0.57	19.10	830.58	12.32	61.76	0.59
Little Plumtree	8010	7-30-2016	396.71	395.28	1.43	0.06	0.41	43.11	868.81	33.08	136.26	0.42
Little Plumtree	7921	2-YR	389.98	389.95	0.04			0.01	188.91	0.08	72.86	0.01
Little Plumtree	7921	10-YR	391.33	391.28	0.05			0.25	396.38	0.37	83.18	0.02
Little Plumtree	7921	50-YR	393.08	393.01	0.07			0.74	696.38	0.88	129.15	0.02
Little Plumtree	7921	100-YR	393.96	393.89	0.07			1.03	859.80	1.16	142.58	0.02
Little Plumtree	7921	7-30-2016	394.42	394.34	0.08			1.19	942.50	1.31	149.79	0.02
Little Plumtree	7800 N. Chatham Rd		Culvert									
Little Plumtree	7735	2-YR	389.55	389.48	0.08	0.27	0.02	4.12	184.88		86.54	0.19

HEC-RAS Plan: V River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	7735	10-YR	390.44	390.28	0.16	0.34	0.02	10.65	386.35		101.65	0.35
Little Plumtree	7735	50-YR	391.54	391.28	0.26	0.32	0.00	21.06	676.94		112.08	0.51
Little Plumtree	7735	100-YR	391.98	391.66	0.32	0.35	0.01	26.74	835.26		114.71	0.61
Little Plumtree	7735	7-30-2016	392.20	391.85	0.35	0.37	0.00	29.66	915.34		116.03	0.66
Little Plumtree	7717		Lat Struct									
Little Plumtree	7645	2-YR	389.27	389.12	0.15	0.35	0.01	94.01	95.99		55.55	0.55
Little Plumtree	7645	10-YR	390.08	389.84	0.23	0.43	0.00	224.76	178.24		62.84	0.66
Little Plumtree	7645	50-YR	391.22	390.96	0.25	0.30	0.01	440.29	300.71		74.44	0.60
Little Plumtree	7645	100-YR	391.62	391.33	0.30	0.32	0.01	555.59	371.41		78.31	0.67
Little Plumtree	7645	7-30-2016	391.83	391.49	0.34	0.37	0.01	635.74	422.26		80.03	0.76
Little Plumtree	7560	2-YR	388.91	388.80	0.11	0.29	0.02	56.82	133.18		54.58	0.34
Little Plumtree	7560	10-YR	389.65	389.42	0.22	0.41	0.03	140.00	263.00		62.39	0.55
Little Plumtree	7560	50-YR	390.90	390.69	0.22	0.16	0.02	293.09	447.91		86.26	0.45
Little Plumtree	7560	100-YR	391.29	391.03	0.25	0.16	0.03	373.36	553.64		92.82	0.52
Little Plumtree	7560	7-30-2016	391.45	391.15	0.30	0.19	0.04	428.40	629.60		100.11	0.61
Little Plumtree	7499	2-YR	388.59	388.24	0.35	0.54	0.02	20.61	169.39		80.01	1.01
Little Plumtree	7499	10-YR	389.21	388.72	0.49	0.66	0.00	116.02	286.98		101.07	1.51
Little Plumtree	7499	50-YR	390.72	390.57	0.15	0.19	0.03	353.31	367.77	19.92	179.17	0.41
Little Plumtree	7499	100-YR	391.09	390.94	0.15	0.20	0.05	436.06	421.25	69.69	188.97	0.38
Little Plumtree	7499	7-30-2016	391.23	391.06	0.17	0.24	0.09	493.87	467.96	96.18	195.52	0.42
Little Plumtree	7437	2-YR	387.09	386.82	0.27	0.14	0.02		190.00		22.61	0.71
Little Plumtree	7437	10-YR	388.43	387.95	0.48	0.18	0.05		403.00		26.28	1.19
Little Plumtree	7437	50-YR	390.51	390.05	0.46			5.57	735.20	0.22	114.36	1.12
Little Plumtree	7437	100-YR	390.84	390.17	0.67			7.76	917.01	2.23	139.95	1.64
Little Plumtree	7437	7-30-2016	390.90	389.88	1.02			6.68	1051.32		65.10	2.49
Little Plumtree	7400 School/Church Dr		Bridge									
Little Plumtree	7358	2-YR	386.55	386.32	0.23	0.37	0.05	2.97	187.03		42.79	0.54
Little Plumtree	7358	10-YR	387.67	387.18	0.49	0.46	0.14	7.61	395.39		57.85	1.03
Little Plumtree	7358	50-YR	388.63	388.28	0.35	0.36	0.02	161.29	579.71		77.46	0.71
Little Plumtree	7358	100-YR	389.16	388.81	0.36	0.34	0.00	226.82	700.18		86.24	0.72
Little Plumtree	7358	7-30-2016	389.52	389.16	0.36	0.32	0.00	268.37	789.63		95.20	0.73
Little Plumtree	7340		Lat Struct									
Little Plumtree	7261	2-YR	386.13	386.00	0.13	0.73	0.01	34.39	155.61		63.12	0.37
Little Plumtree	7261	10-YR	387.07	386.87	0.21	0.64	0.01	105.48	297.52		67.86	0.57
Little Plumtree	7261	50-YR	388.25	387.95	0.30	0.59	0.03	214.95	525.84	0.20	82.04	0.79
Little Plumtree	7261	100-YR	388.82	388.48	0.35	0.55	0.04	274.69	650.93	1.38	93.46	0.87
Little Plumtree	7261	7-30-2016	389.20	388.82	0.37	0.53	0.04	320.44	734.60	2.96	100.94	0.92
Little Plumtree	7059	2-YR	385.39	385.21	0.18	0.68	0.01	5.20	184.80		71.12	0.46
Little Plumtree	7059	10-YR	386.42	386.24	0.18	0.46	0.00	84.53	318.43	0.04	75.73	0.47
Little Plumtree	7059	50-YR	387.64	387.42	0.21	0.34	0.01	231.08	508.63	1.29	81.26	0.52
Little Plumtree	7059	100-YR	388.24	388.01	0.22	0.31	0.01	316.64	607.50	2.85	83.99	0.53
Little Plumtree	7059	7-30-2016	388.62	388.39	0.23	0.29	0.01	377.43	676.30	4.27	85.75	0.55
Little Plumtree	6890	2-YR	384.71	384.54	0.17	1.06	0.03		190.00		32.06	0.40
Little Plumtree	6890	10-YR	385.96	385.77	0.19	0.82	0.06	33.99	369.01		77.23	0.43
Little Plumtree	6890	50-YR	387.29	387.09	0.19	0.65	0.11	155.04	585.96		82.97	0.43
Little Plumtree	6890	100-YR	387.92	387.72	0.20	0.59	0.14	228.42	698.58		85.69	0.44
Little Plumtree	6890	7-30-2016	388.32	388.12	0.20	0.56	0.15	280.09	777.90	0.01	87.90	0.44
Little Plumtree	6690	2-YR	383.62	383.13	0.48	4.03	0.01		186.51	3.49	21.74	1.14
Little Plumtree	6690	10-YR	385.08	384.33	0.75	3.93	0.02		375.86	27.14	30.39	1.64
Little Plumtree	6690	50-YR	386.53	385.25	1.27	4.13	0.08	1.21	656.92	82.87	39.52	2.73
Little Plumtree	6690	100-YR	387.19	385.61	1.58	4.21	0.18	4.80	805.44	116.76	43.33	3.34
Little Plumtree	6690	7-30-2016	387.62	385.96	1.66	3.99	0.21	11.22	901.34	145.45	46.86	3.48
Little Plumtree	6326	2-YR	379.58	378.97	0.61	2.03	0.16		190.00		15.74	1.48
Little Plumtree	6326	10-YR	381.13	380.16	0.97	1.97	0.24	1.92	398.23	2.85	58.65	2.07
Little Plumtree	6326	50-YR	382.32	381.31	1.02	1.64	0.22	107.68	617.18	16.14	86.72	2.30
Little Plumtree	6326	100-YR	382.79	381.81	0.98	1.51	0.20	193.58	708.56	24.85	96.65	2.31
Little Plumtree	6326	7-30-2016	383.09	382.14	0.95	1.41	0.18	260.94	765.56	31.49	102.34	2.29
Little Plumtree	6045	2-YR	377.40	377.32	0.08	0.25	0.01		190.00	0.00	22.95	0.15
Little Plumtree	6045	10-YR	378.91	378.74	0.17	0.38	0.03	5.84	394.08	3.09	50.87	0.31
Little Plumtree	6045	50-YR	380.44	380.16	0.28	0.48	0.05	50.26	669.19	21.55	80.73	0.52
Little Plumtree	6045	100-YR	381.09	380.76	0.32	0.51	0.06	91.98	799.08	35.94	86.40	0.60
Little Plumtree	6045	7-30-2016	381.49	381.14	0.35	0.53	0.06	124.96	886.03	47.01	90.00	0.65
Little Plumtree	5847	2-YR	377.13	376.91	0.22	0.60	0.00		190.00		18.34	0.47
Little Plumtree	5847	10-YR	378.51	378.04	0.47	0.80	0.03	0.37	401.62	1.01	35.10	0.94
Little Plumtree	5847	50-YR	379.90	379.11	0.80	0.87	0.12	25.19	697.79	18.03	56.00	1.54
Little Plumtree	5847	100-YR	380.51	379.59	0.92	0.87	0.16	49.69	841.76	35.54	59.96	1.78
Little Plumtree	5847	7-30-2016	380.90	379.91	0.99	0.88	0.18	69.96	938.62	49.42	62.51	1.93

HEC-RAS Plan: V River: Little Plumtree Reach: Little Plumtree (Continued)

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width	Shear Chan
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(lb/sq ft)
Little Plumtree	5668	2-YR	376.53	376.29	0.24	0.74	0.02	0.50	189.50		50.64	0.53
Little Plumtree	5668	10-YR	377.67	377.32	0.36	0.66	0.00	59.19	343.51	0.30	80.66	0.82
Little Plumtree	5668	50-YR	378.91	378.53	0.38	0.53	0.00	221.01	516.65	3.35	97.78	0.95
Little Plumtree	5668	100-YR	379.48	379.09	0.39	0.51	0.00	322.31	598.40	6.29	104.41	0.99
Little Plumtree	5668	7-30-2016	379.84	379.45	0.39	0.50	0.00	395.37	653.85	8.77	108.61	1.02
Little Plumtree	5520	2-YR	375.76	375.31	0.45	0.42	0.07	5.87	183.41	0.71	51.05	1.06
Little Plumtree	5520	10-YR	377.01	376.62	0.39	0.29	0.02	91.29	299.43	12.29	72.53	1.00
Little Plumtree	5520	50-YR	378.37	378.00	0.37	0.25	0.00	259.63	440.77	40.60	83.95	1.02
Little Plumtree	5520	100-YR	378.96	378.56	0.40	0.24	0.00	345.81	523.59	57.60	92.20	1.13
Little Plumtree	5520	7-30-2016	379.34	378.91	0.42	0.24	0.00	408.97	579.20	69.83	97.38	1.19
Little Plumtree	5442	2-YR	375.27	375.05	0.22			6.55	175.62	7.83	42.74	0.49
Little Plumtree	5442	10-YR	376.69	376.38	0.31			54.78	317.52	30.69	67.34	0.70
Little Plumtree	5442	50-YR	378.12	377.75	0.38			176.50	495.10	69.40	91.17	0.92
Little Plumtree	5442	100-YR	378.72	378.31	0.40			258.35	578.13	90.52	98.88	1.01
Little Plumtree	5442	7-30-2016	379.09	378.67	0.42			319.63	632.99	105.39	102.99	1.06

Appendix H-17

Hydraulic Modeling Summary Tables

Plumtree Branch Proposed Options Water Surface Elevation Comparisons

Roadway Crossing	River Station	2-Year Storm Event Change in Water Surface Elevation from Existing (ft)									
		A	B	C	D	E	F	G	H	I	
	10286	0	0	0	0	5.42	0	0	5.19	0.27	Zone 1
	10044	0	0	0	0	3.01	0	0	2.79	0.37	
	9814	0	0	0	0	0.46	0	0	0.23	0.53	
	9762	0	0	0	0	-0.2	0	0	-0.43	1.03	
Michaels Way	9732	0	0	0	0	-0.16	0	0	-0.39	1.41	
	9589	0	0	0	0	0.59	0.4	0.08	1	0.79	
	9499	0	0	0	0	0.73	0.79	0.1	1.48	0.91	
	9398	0	0	0	0	0.51	1.34	0.07	1.89	0.64	
	9301	0	0	0	0	0.37	5.59	0.05	5.99	0.46	
	9196	0	0	0	0	0.31	6.67	0.04	7.09	0.41	
	8987	0	0	0	0	0.44	12.5	0.06	14.49	0.54	
	8753	0	0	0	0	0.36	11.12	0.06	13.11	0.44	
	8579	0	0	0	0	0.51	10.25	0.07	12.25	0.64	
	8374	0	0	0	0	0.47	9.81	0.07	11.8	0.59	
	8229	0	0	0	0	0.57	8.97	0.1	10.97	0.69	
	8094	0	0	0	0	0.32	7.58	0.04	9.58	0.41	
	7954	0	0	0	0	0.26	9.16	0.04	10.46	0.33	
	7800	0	0	0	0	0.22	7.92	0.03	9.22	0.26	
	7548	0	0	0	0	0.29	6.76	0.05	8.06	0.36	
	7367	0	0	0	0	0.3	5.85	0.04	7.16	0.37	
	7216	0	0	0	0	0.29	5.24	0.09	6.54	0.34	
	7030	0	0.82	0.82	0.82	0.96	5.01	0.66	6.5	1.02	
	6893	-0.01	2.34	2.33	1.9	2.62	4.98	0.63	6.46	2.82	
	6766	-0.01	2.73	2.71	2.03	2.83	4.97	0.64	6.45	3.15	
	6663	-0.01	2.98	2.96	2.1	2.92	4.96	0.65	6.45	3.28	
	6568	-0.01	3.31	3.27	2.12	3.03	5.03	0.65	6.56	3.44	
	6454	-0.01	3.79	3.7	2.16	3.13	5.08	0.65	6.73	3.58	
	6350	0	4.03	3.7	2.19	3.17	5.2	0.67	7.12	3.64	
Hearthstone Rd.	6296	-0.01	4.44	3.76	2.21	3.21	5.38	0.67	7.21	3.7	
	6197	-0.01	-0.06	0.86	0.44	0.68	1.58	0.11	2.41	0.83	Zone 2
	6122	0.04	0.25	1.13	0.51	0.93	1.34	0.14	1.78	1.11	
	6028	0.03	0.63	1.34	0.55	1.09	1.83	0.14	2.47	1.32	
	5926	0.03	1.04	1.71	0.58	1.33	2.15	0.15	2.79	1.67	
	5824	0.04	2.43	2.08	0.6	1.48	3.54	0.15	4.09	2.01	
	5745	0.04	2.8	2.12	0.6	1.51	3.84	0.15	5.41	2.05	
Brookmede Rd.	5711	0.04	2.84	2.13	0.6	1.51	3.86	0.15	5.47	2.06	
	5614	0.15	0.18	1.2	0.67	1	1.91	0.24	2.81	1.18	
	5560	0.16	0.2	1.21	0.68	1.01	1.9	0.25	2.79	1.18	
Private Driveway	5510	0.24	0.29	1.24	0.73	1.05	1.92	0.29	2.77	1.22	
	5474	0.26	0.31	1.24	0.73	1.04	1.91	0.3	2.79	1.21	
	5419	0.31	0.39	1.24	0.75	1.05	1.89	0.32	2.74	1.21	
	5323	0.43	0.55	1.45	0.93	1.25	2.09	0.41	2.94	1.42	
	5209	0.75	1.23	2.07	1.43	1.87	2.66	0.57	3.49	2.04	
	5107	0.92	1.95	2.82	1.76	2.45	3.55	0.65	4.11	2.76	
Longview Dr.	5040	0.97	2.25	3.13	1.86	2.64	4.28	0.67	4.38	3.04	
	4932	1.23	1.23	1.64	0.88	1.31	2.44	0.35	3.36	1.53	
	4845	1.51	1.51	1.72	0.93	1.37	2.57	0.38	3.57	1.6	
	4745	1.87	1.87	1.84	1	1.45	2.75	0.41	3.9	1.7	
	4636	2.22	2.22	1.92	1.04	1.52	2.86	0.42	4.12	1.77	
US 40	4550	2.54	2.54	1.95	1.05	1.53	2.91	0.43	4.29	1.79	
	4344	0	0	0.01	0.5	0.51	0.7	0.09	0.76	0.68	Zone 3
	4289	0	0	-0.01	0.49	0.5	0.69	0.09	0.74	0.67	
	4185	0	0	0	0.44	0.45	0.62	0.07	0.66	0.6	
	4033	0	0	0	0.47	0.48	0.65	0.1	0.69	0.63	
	3930	0	0	0	0.42	0.43	0.59	0.08	0.63	0.57	
	3816	0	0	0	0.48	0.5	0.68	0.09	0.72	0.66	
	3688	0	0	0	0.48	0.51	0.69	0.09	0.72	0.67	
	3550	0	0.01	0	0.51	0.56	0.76	0.1	0.79	0.74	
	3428	0	0.01	0	0.47	0.56	0.75	0.09	0.77	0.73	
	3296	0	0.01	0	0.37	0.5	0.68	0.07	0.68	0.66	
	3179	0	0.02	0	0.33	0.49	0.66	0.08	0.64	0.64	
	3077	0	0.03	0	0.32	0.56	0.77	0.11	0.72	0.75	
	2978	0	0.04	0	0.25	0.6	0.82	0.11	0.71	0.8	
Frederick Rd.	2917	0	0.07	0	0.18	0.61	0.83	0.13	0.67	0.81	
	2827	0	0	0	-0.08	0.39	0.56	0.07	0.59	0.54	
	2759	0	0	0	0	0.4	0.55	0.08	0.59	0.54	
	2589	0	0	0	0	0.42	0.58	0.09	0.62	0.57	
	2485	0	0	0	0	0.45	0.6	0.07	0.64	0.59	
	2331	0	0	0	0	0.51	0.68	0.09	0.73	0.67	
	2153	0	0	0	0	0.47	0.63	0.09	0.67	0.62	
	1994	0	0	0	0	0.36	0.49	0.07	0.52	0.48	
Pedestrian Bridge	1888	0	0	0	0	0.34	0.45	0.07	0.48	0.45	
	1830	0	0	0	0	0.34	0.44	0.07	0.47	0.44	
	1641	0	0	0	0	0.09	0.11	0.01	0.13	0.13	
	1463	0	0	0	0	0	0	-0.01	0.01	0.02	
	1291	0	0	0	0	-0.01	-0.01	-0.01	0	0.01	
	1124	0	0	0	0	-0.01	-0.02	-0.02	-0.01	0	
	994	0	0	0	0	-0.02	-0.02	-0.02	-0.01	0	
	911	0	0	0	0	-0.02	-0.02	-0.02	-0.01	0	
	762	0	0	0	0	-0.01	-0.02	-0.02	-0.01	0.01	
	658	0	0	0	0	-0.01	-0.02	-0.01	-0.01	0.01	
	526	0	0	0	0	-0.01	-0.02	-0.02	-0.01	0	
	380	0	0	0	0	-0.02	-0.03	-0.02	-0.02	0	
	146	0	0	0	0	-0.03	-0.04	-0.04	-0.02	0.01	
	63	0	0	0	0	-0.02	-0.02	-0.02	-0.01	0	

Legend	
	< 0
	0
	> 0 to 3
	> 3 to 6
	> 6 to 9
	> 9 to 12
	>12 to 15

Plumtree Branch Proposed Options Water Surface Elevation Comparisons

Roadway Crossing	River Station	10-Year Storm Event Change in Water Surface Elevation from Existing (ft)									
		A	B	C	D	E	F	G	H	I	
	10286	0	0	0	0	3.64	0	0	3.64	0.32	Zone 1
	10044	0	0	0	0	0.85	0	0	0.85	0.19	
	9814	0	0	0	0	0.01	0.01	0.01	0.01	1.36	
	9762	0	0	0	0	-0.02	0	0	-0.02	1.42	
Michaels Way	9732	0	0	0	0	-0.1	0	0	-0.1	1.38	
	9589	0	0	0	0	0.42	0.33	0.14	1.31	0.35	
	9499	0	0	0	0	0.43	1.27	0.15	1.9	0.4	
	9398	0	0	0	0	0.59	2.32	0.18	2.86	0.53	
	9301	0	0	0	0	0.28	5.73	0.09	6.31	0.25	
	9196	0	0	0	0	0.4	7.07	0.13	7.75	0.37	
	8987	0	0	0	0	0.35	10.03	0.1	13.41	0.31	
	8753	0	0	0	0	0.45	8.8	0.14	12.18	0.41	
	8579	0	0	0	0	0.46	8.04	0.15	11.43	0.42	
	8374	0	0	0	0	0.43	7.51	0.14	10.89	0.39	
	8229	0	0.01	0	0	0.4	6.59	0.14	9.98	0.37	
	8094	0	0	0	0	0.32	5.06	0.09	8.45	0.28	
	7954	0	0	0	0	0.27	5.97	0.09	9.29	0.24	
	7800	0	-0.02	-0.01	-0.01	0.25	4.67	0.08	7.98	0.23	
	7548	0	0.08	0.05	0.04	0.32	3.69	0.11	7	0.3	
	7367	0	0.33	0.19	0.15	0.38	3.05	0.13	6.36	0.33	
	7216	0	0.76	0.31	0.23	0.39	2.82	0.13	6.14	0.33	
	7030	0	2.08	0.38	0.28	0.38	2.68	0.13	6.54	0.31	
	6893	0	2.51	0.4	0.29	0.37	2.64	0.12	6.5	0.31	
	6766	0	2.68	0.4	0.3	0.36	2.62	0.12	6.48	0.3	
	6663	0	2.79	0.41	0.3	0.36	2.61	0.12	6.47	0.3	
	6568	0	2.92	0.42	0.3	0.36	2.63	0.12	6.72	0.3	
	6454	0	3.08	0.42	0.29	0.35	2.61	0.12	6.92	0.29	
	6350	0	3.39	0.39	0.27	0.33	2.58	0.11	7.26	0.27	
Hearthstone Rd.	6296	0	3.83	0.37	0.27	0.32	2.57	0.11	7.36	0.27	
	6197	0	0	0.79	0.57	0.63	2.08	0.22	2.84	0.57	Zone 2
	6122	0	0	0.29	0.19	0.24	1.6	0.07	2.54	0.19	
	6028	0.05	0.66	0.5	0.35	0.4	1.9	0.12	3.06	0.35	
	5926	0.06	1.01	0.44	0.3	0.36	1.87	0.1	3.38	0.3	
	5824	0.07	1.35	0.43	0.3	0.36	1.87	0.1	4.81	0.3	
	5745	0.06	1.38	0.39	0.26	0.32	1.81	0.07	5.48	0.26	
Brookmede Rd.	5711	0.07	1.39	0.39	0.26	0.32	1.81	0.08	5.53	0.26	
	5614	0.67	1.94	0.85	0.61	0.69	4.28	0.24	5.22	0.61	
	5560	0.68	1.99	0.86	0.62	0.7	4.39	0.24	5.32	0.62	
Private Driveway	5510	0.74	2.44	0.87	0.63	0.7	4.72	0.25	5.64	0.63	
	5474	0.66	2.88	0.86	0.62	0.7	4.75	0.24	5.66	0.62	
	5419	0.67	3.47	0.86	0.62	0.69	4.97	0.24	5.85	0.62	
	5323	0.67	3.57	0.86	0.62	0.7	5.21	0.24	6.2	0.62	
	5209	0.68	3.98	0.85	0.62	0.69	5.62	0.24	6.99	0.62	
	5107	0.71	4.9	0.84	0.61	0.69	5.8	0.24	7.8	0.61	
Longview Dr.	5040	0.72	5.21	0.85	0.61	0.69	5.86	0.24	8.12	0.61	
	4932	6.75	6.77	4.16	3.07	3.39	7.78	1.09	9.43	3.07	
	4845	7.27	7.27	4.16	3.05	3.38	7.92	1.08	9.75	3.05	
	4745	7.5	7.5	4.15	3.05	3.37	8	1.08	10.1	3.05	
	4636	7.78	7.78	4.15	3.05	3.37	8.07	1.08	10.37	3.05	
US 40	4550	8.27	8.27	4.2	3.09	3.42	8.12	1.11	10.6	3.09	
	4344	0	0.02	-0.02	0.37	0.33	1.01	0.14	1.07	0.32	Zone 3
	4289	0	0.02	-0.04	0.36	0.32	0.99	0.14	1.04	0.31	
	4185	0	0.05	0	0.37	0.34	0.9	0.16	0.95	0.33	
	4033	0	0.09	0	0.44	0.41	1.03	0.19	1.09	0.4	
	3930	0	0.18	0	0.66	0.61	1.57	0.27	1.64	0.59	
	3816	0	0.22	0	0.68	0.64	1.67	0.28	1.75	0.62	
	3688	0	0.3	0	0.74	0.7	1.8	0.31	1.89	0.68	
	3550	0	0.37	0	0.77	0.74	1.9	0.33	2	0.72	
	3428	0	0.59	0	0.83	0.81	1.98	0.37	2.1	0.79	
	3296	0	1.16	0	0.89	0.91	2.08	0.41	2.23	0.88	
	3179	0	1.34	0	0.98	1	2.37	0.44	2.59	0.97	
	3077	0	1.4	0	1	1.02	2.49	0.44	2.77	0.99	
	2978	0	1.78	0	1.04	1.07	2.61	0.47	2.98	1.04	
Frederick Rd.	2917	0	2.09	0	1.07	1.11	2.73	0.48	3.21	1.08	
	2827	0	0	0	-0.06	0.25	0.76	0.1	0.81	0.24	
	2759	0	0	0	0	0.29	0.84	0.12	0.89	0.28	
	2589	0	0	0	0	0.26	0.73	0.11	0.78	0.25	
	2485	0	0	0	0	0.35	0.95	0.14	0.96	0.34	
	2331	0	0	0	0	0.36	1.05	0.15	1.11	0.35	
	2153	0	0	0	0	0.35	1.02	0.15	1.07	0.34	
	1994	0	0	0	0	0.34	0.96	0.14	1.01	0.33	
Pedestrian Bridge	1888	0	0	0	0	0.35	0.95	0.15	1	0.33	
	1830	0	0	0	0	0.35	0.94	0.15	0.99	0.33	
	1641	0	0	0	0	0.19	0.44	0.11	0.46	0.18	
	1463	0	0	0	0	0.06	0.18	0.06	0.19	0.07	
	1291	0	0	0	0	0.07	0.2	0.07	0.22	0.08	
	1124	0	0	0	0	0.08	0.22	0.08	0.24	0.08	
	994	0	0	0	0	0.07	0.22	0.07	0.24	0.08	
	911	0	0	0	0	0.08	0.23	0.08	0.25	0.09	
	762	0	0	0	0	0.09	0.26	0.09	0.28	0.1	
	658	0	0	0	0	0.09	0.26	0.09	0.28	0.1	
	526	0	0	0	0	0.09	0.26	0.09	0.28	0.09	
	380	0	0	0	0	0.09	0.26	0.08	0.28	0.09	
	146	0	0	0	0	0.08	0.24	0.07	0.26	0.08	
	63	0	0	0	0	0.1	0.29	0.09	0.31	0.1	

Legend	
	< 0
	0
	> 0 to 3
	> 3 to 6
	> 6 to 9
	> 9 to 12

Plumtree Branch Proposed Options Water Surface Elevation Comparisons

Roadway Crossing	River Station	100-Year Storm Event Change in Water Surface Elevation from Existing (ft)									
		A	B	C	D	E	F	G	H	I	
	10286	0	0	0	0	2.6	-0.04	-0.01	2.65	1.58	Zone 1
	10044	0	0	0	0	0.22	0.07	0.02	0.27	0.31	
	9814	0	0	0	0	0.03	0.07	0.02	0.08	0.26	
	9762	0	0	0	0	0	0.08	0.02	0.05	0.26	
Michaels Way	9732	0	0	0	0	-0.11	0.09	0.02	-0.06	0.24	
	9589	0	0	0	0	0.38	1.02	0.21	1.59	0.3	
	9499	0	0	0	0	0.33	1.72	0.18	3.5	0.32	
	9398	0	0	0	0	0.33	3.62	0.17	4.05	0.32	
	9301	0	0	0	0	0.25	5.41	0.14	7.04	0.25	
	9196	0	0	0	0	0.27	7.82	0.14	8.44	0.26	
	8987	0	0	0	0	0.24	6.2	0.13	11.03	0.24	
	8753	0	0	0	0	0.3	5.32	0.16	10.16	0.29	
	8579	0	0	0	0	0.3	4.54	0.16	9.39	0.3	
	8374	0	0	0	0	0.27	3.84	0.14	8.68	0.26	
	8229	0	0	0	0	0.26	2.83	0.13	7.67	0.23	
	8094	0	0	0	0	0.18	1.02	0.1	5.86	0.2	
	7954	0	0	0	0	0.2	3.8	0.1	8.43	0.19	
	7800	0	0.02	0.01	0.01	0.21	2.52	0.11	7.16	0.2	
	7548	0	0.2	0.06	0.05	0.23	1.7	0.12	6.33	0.2	
	7367	0	0.51	0.12	0.1	0.26	1.26	0.13	5.89	0.22	
	7216	0	0.79	0.16	0.13	0.26	1.03	0.13	5.67	0.21	
	7030	0	1.01	0.18	0.15	0.25	0.88	0.12	5.77	0.19	
	6893	0	1.1	0.19	0.15	0.24	0.8	0.11	5.69	0.18	
	6766	0	1.15	0.2	0.17	0.24	0.77	0.12	5.66	0.18	
	6663	0	1.17	0.21	0.17	0.24	0.76	0.11	5.65	0.18	
	6568	0	1.2	0.2	0.15	0.23	0.74	0.11	5.77	0.17	
	6454	0	1.25	0.21	0.15	0.23	0.71	0.11	5.99	0.17	
	6350	0	1.47	0.18	0.13	0.2	0.63	0.1	6.24	0.15	
Hearthstone Rd.	6296	0	1.92	0.16	0.11	0.18	0.55	0.1	6.29	0.13	
	6197	0	0	0.37	0.28	0.38	1.14	0.15	2.9	0.3	Zone 2
	6122	0	0	0.3	0.23	0.32	0.99	0.11	2.68	0.26	
	6028	0.03	0.24	0.29	0.23	0.31	0.92	0.12	3.04	0.24	
	5926	0.05	0.41	0.23	0.18	0.25	0.74	0.1	3.23	0.19	
	5824	0.06	0.53	0.22	0.18	0.24	0.71	0.1	3.75	0.18	
	5745	0.07	0.68	0.12	0.1	0.14	0.46	0.06	3.47	0.1	
Brookmede Rd.	5711	0.07	0.72	0.13	0.11	0.14	0.48	0.07	3.5	0.11	
	5614	0.44	1.15	0.24	0.18	0.25	0.76	0.11	4.23	0.21	
	5560	0.44	1.17	0.24	0.17	0.25	0.76	0.1	4.31	0.21	
Private Driveway	5510	0.51	1.52	0.22	0.16	0.23	0.71	0.09	4.71	0.2	
	5474	0.37	1.28	0.2	0.15	0.21	0.66	0.09	4.82	0.19	
	5419	0.38	1.36	0.19	0.13	0.2	0.63	0.08	5.21	0.18	
	5323	0.38	1.35	0.19	0.14	0.2	0.62	0.08	5.41	0.18	
	5209	0.38	1.41	0.17	0.12	0.18	0.59	0.07	5.97	0.16	
	5107	0.45	1.79	0.14	0.1	0.15	0.49	0.06	6.71	0.14	
Longview Dr.	5040	0.47	2.05	0.14	0.09	0.14	0.49	0.06	7.02	0.13	
	4932	5.49	5.49	0.17	0.08	0.15	0.53	0.07	8.41	0.14	
	4845	5.74	5.74	0.16	0.08	0.15	0.53	0.06	8.83	0.14	
	4745	5.54	5.54	0.18	0.09	0.16	0.56	0.07	9.2	0.15	
	4636	5.59	5.59	0.18	0.09	0.16	0.56	0.07	9.59	0.15	
US 40	4550	6.41	6.41	0.18	0.09	0.16	0.56	0.07	9.88	0.15	
	4344	0.04	0.04	-0.05	0.25	0.37	1.18	0.11	1.33	0.29	Zone 3
	4289	0	0.01	-0.04	0.26	0.39	1.22	0.11	1.36	0.3	
	4185	0	0.01	0	0.29	0.43	1.43	0.13	1.81	0.33	
	4033	0	0	0	0.3	0.45	1.44	0.13	1.87	0.34	
	3930	0	0.01	0	0.3	0.46	1.48	0.14	1.97	0.35	
	3816	0	0.01	0	0.3	0.46	1.49	0.13	2.02	0.35	
	3688	0	0.01	0	0.31	0.46	1.5	0.14	2.08	0.36	
	3550	0	0	0	0.29	0.44	1.44	0.12	2.08	0.33	
	3428	0	0.01	0	0.24	0.37	1.21	0.1	1.98	0.28	
	3296	0	0.62	0	0.1	0.18	0.72	0.03	1.87	0.12	
	3179	0	0.43	0	0.15	0.24	0.9	0.05	2.06	0.17	
	3077	0	0.42	0	0.15	0.25	0.92	0.05	2.08	0.18	
	2978	0	0.57	0	0.11	0.19	0.74	0.03	2.05	0.13	
Frederick Rd.	2917	0	0.62	0	0.11	0.2	0.77	0.04	2.2	0.14	
	2827	0	0	0	-0.03	0.29	1.02	0.08	1.32	0.22	
	2759	0	0	0	0	0.3	1.09	0.09	1.27	0.23	
	2589	0	0	0	0	0.34	1.07	0.1	1.25	0.26	
	2485	0	0	0	0	0.37	1.21	0.11	1.44	0.29	
	2331	0	0	0	0	0.35	1.12	0.1	1.33	0.27	
	2153	0	0	0	0	0.34	1.09	0.1	1.28	0.26	
	1994	0	0	0	0	0.35	1.09	0.1	1.27	0.27	
Pedestrian Bridge	1888	0	0	0	0	0.34	1.03	0.09	1.2	0.27	
	1830	0	0	0	0	0.31	0.95	0.09	1.1	0.25	
	1641	0	0	0	0	0.24	0.57	0.05	0.65	0.2	
	1463	0	0	0	0	0.17	0.31	0.02	0.36	0.15	
	1291	0	0	0	0	0.19	0.37	0.02	0.43	0.17	
	1124	0	0	0	0	0.2	0.39	0.03	0.45	0.18	
	994	0	0	0	0	0.21	0.39	0.03	0.45	0.18	
	911	0	0	0	0	0.2	0.39	0.02	0.45	0.18	
	762	0	0	0	0	0.21	0.4	0.03	0.47	0.19	
	658	0	0	0	0	0.21	0.4	0.03	0.47	0.19	
	526	0	0	0	0	0.21	0.4	0.03	0.47	0.19	
	380	0	0	0	0	0.2	0.39	0.03	0.46	0.18	
	146	0	0	0	0	0.18	0.34	0.02	0.4	0.16	
	63	0	0	0	0	0.23	0.44	0.03	0.51	0.2	

Legend	
	< 0
	0
	> 0 to 3
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	> 6 to 9
	> 9 to 12

Plumtree Branch Unsteady Flow Model Water Surface Elevation Comparisons

Roadway Crossing	River Station	2-Year Unsteady Water Surface Elevation (ft)			River Station	10-Year Unsteady Water Surface Elevation (ft)			River Station	100-Year Unsteady Water Surface Elevation (ft)			
		Existing	Option A	Difference		Existing	Option A	Difference		Existing	Option A	Difference	
	10286	396.96	396.96	0	10286	397.49	397.49	0	10286	397.99	397.99	0	Zone 1
	10044	394.41	394.41	0	10044	394.97	394.97	0	10044	396.16	396.16	0	
	9814	392.03	392.03	0	9814	393.64	393.64	0	9814	395.67	395.67	0	
	9762	391.66	391.66	0	9762	393.6	393.6	0	9762	395.64	395.64	0	
Michaels Way	9732	391.6	391.6	0	9732	393.49	393.49	0	9732	395.58	395.58	0	
	9589	389.99	389.99	0	9589	391.02	391.02	0	9589	392.5	392.5	0	
	9499	389.82	389.82	0	9499	390.97	390.97	0	9499	392.46	392.46	0	
	9398	389.31	389.31	0	9398	390.39	390.39	0	9398	391.92	391.92	0	
	9301	388.74	388.74	0	9301	389.6	389.6	0	9301	390.92	390.93	-0.01	
	9196	388.18	388.18	0	9196	389.06	389.06	0	9196	390.43	390.44	-0.01	
	8987	387.25	387.25	0	8987	388.1	388.1	0	8987	389.36	389.36	0	
	8753	385.99	385.99	0	8753	386.98	386.98	0	8753	388.45	388.45	0	
	8579	385.13	385.13	0	8579	386.21	386.21	0	8579	387.71	387.71	0	
	8374	384.62	384.62	0	8374	385.62	385.62	0	8374	386.92	386.92	0	
	8229	383.62	383.62	0	8229	384.55	384.55	0	8229	385.77	385.77	0	
	8094	382.39	382.39	0	8094	383.17	383.17	0	8094	384.26	384.26	0	
	7954	381.44	381.44	0	7954	382.1	382.1	0	7954	383.13	383.13	0	
	7800	380.35	380.35	0	7800	380.95	380.95	0	7800	381.98	381.98	0	
	7548	378.89	378.89	0	7548	379.53	379.53	0	7548	380.92	380.92	0	
	7367	378.21	378.21	0	7367	378.94	378.94	0	7367	380.65	380.65	0	
	7216	378.07	378.07	0	7216	378.75	378.75	0	7216	380.55	380.55	0	
	7030	376.7	376.7	0	7030	378.6	378.6	0	7030	380.42	380.42	0	
	6893	376.51	376.51	0	6893	378.54	378.54	0	6893	380.35	380.35	0	
	6766	376.49	376.49	0	6766	378.52	378.52	0	6766	380.32	380.32	0	
	6663	376.48	376.48	0	6663	378.51	378.51	0	6663	380.3	380.3	0	
	6568	376.47	376.47	0	6568	378.5	378.5	0	6568	380.28	380.28	0	
	6454	376.46	376.46	0	6454	378.48	378.48	0	6454	380.22	380.22	0	
	6350	376.44	376.44	0	6350	378.42	378.42	0	6350	380.11	380.11	0	
Hearthstone Rd.	6296	376.42	376.42	0	6296	378.38	378.38	0	6296	380.03	380.03	0	
	6197	371.64	371.64	0	6197	373.54	373.54	0	6197	375.39	375.38	0.01	Zone 2
	6122	371.27	371.27	0	6122	372.99	372.98	0.01	6122	374.82	374.81	0.01	
	6028	370.96	370.95	0.01	6028	372.8	372.8	0	6028	374.42	374.41	0.01	
	5926	370.76	370.76	0	5926	372.57	372.57	0	5926	373.89	373.87	0.02	
	5824	370.63	370.62	0.01	5824	372.42	372.42	0	5824	373.57	373.55	0.02	
	5745	370.61	370.6	0.01	5745	372.32	372.32	0	5745	373.15	373.14	0.01	
Brookmede Rd.	5711	370.61	370.6	0.01	5711	372.32	372.32	0	5711	373.16	373.14	0.02	
	5614	367.35	367.27	0.08	5614	371.35	371.35	0	5614	373.21	373.2	0.01	
	5560	367.27	367.18	0.09	5560	371.35	371.35	0	5560	373.23	373.2	0.03	
Private Driveway	5510	366.9	366.81	0.09	5510	371.29	371.29	0	5510	373.12	373.1	0.02	
	5474	367.02	366.94	0.08	5474	371.24	371.24	0	5474	372.98	372.97	0.01	
	5419	366.8	366.7	0.1	5419	371.22	371.21	0.01	5419	372.92	372.92	0	
	5323	366.59	366.45	0.14	5323	371.22	371.21	0.01	5323	372.88	372.88	0	
	5209	366.26	366.02	0.24	5209	371.2	371.19	0.01	5209	372.82	372.83	-0.01	
	5107	365.99	365.65	0.34	5107	371.14	371.19	-0.05	5107	372.67	372.82	-0.15	
Longview Dr.	5040	365.93	365.56	0.37	5040	371.13	371.09	0.04	5040	372.65	372.58	0.07	
	4932	363.69	362.79	0.9	4932	367.9	364.89	3.01	4932	372.48	367.44	5.04	
	4845	363.57	362.41	1.16	4845	367.93	364.36	3.57	4845	372.5	367.07	5.43	
	4745	363.51	362	1.51	4745	367.94	363.89	4.05	4745	372.53	367.1	5.43	
	4636	363.46	361.6	1.86	4636	367.94	363.59	4.35	4636	372.53	367.03	5.5	
US 40	4550	363.4	361.24	2.16	4550	367.91	363.18	4.73	4550	372.53	366.56	5.97	
	4344	360.22	360.26	-0.04	4344	361.25	361.81	-0.56	4344	363.85	363.87	-0.02	Zone 3
	4289	360.21	360.24	-0.03	4289	361.25	361.79	-0.54	4289	363.86	364.03	-0.17	
	4185	359.98	360.03	-0.05	4185	360.87	361.4	-0.53	4185	363.74	363.94	-0.2	
	4033	359.4	359.45	-0.05	4033	360.37	360.94	-0.57	4033	363.49	363.7	-0.21	
	3930	358.93	358.99	-0.06	3930	360.01	360.68	-0.67	3930	363.36	363.59	-0.23	
	3816	358.46	358.52	-0.06	3816	359.75	360.47	-0.72	3816	363.22	363.43	-0.21	
	3688	358.06	358.13	-0.07	3688	359.47	360.23	-0.76	3688	363.02	363.23	-0.21	
	3550	357.69	357.76	-0.07	3550	359.18	359.99	-0.81	3550	362.74	362.95	-0.21	
	3428	357.26	357.33	-0.07	3428	358.81	359.67	-0.86	3428	362.21	362.37	-0.16	
	3296	356.71	356.77	-0.06	3296	358.29	359.27	-0.98	3296	361.61	361.76	-0.15	
	3179	356.45	356.51	-0.06	3179	358.17	359.21	-1.04	3179	361.46	361.62	-0.16	
	3077	356.27	356.35	-0.08	3077	358.16	359.21	-1.05	3077	361.47	361.66	-0.19	
	2978	355.97	356.06	-0.09	2978	357.98	359.09	-1.11	2978	361.27	361.37	-0.1	
Frederick Rd.	2917	355.76	355.85	-0.09	2917	357.89	359.04	-1.15	2917	361.2	361.38	-0.18	
	2827	354.96	355	-0.04	2827	355.7	356.04	-0.34	2827	357.83	358.03	-0.2	
	2759	354.71	354.73	-0.02	2759	355.44	355.76	-0.32	2759	357.73	357.93	-0.2	
	2589	354.16	354.16	0	2589	354.92	355.21	-0.29	2589	357.11	357.33	-0.22	
	2485	353.45	353.49	-0.04	2485	354.22	354.54	-0.32	2485	356.65	356.88	-0.23	
	2331	352.53	352.58	-0.05	2331	353.51	353.82	-0.31	2331	355.97	356.2	-0.23	
	2153	351.95	352	-0.05	2153	352.95	353.27	-0.32	2153	355.37	355.58	-0.21	
	1994	351.36	351.41	-0.05	1994	352.39	352.67	-0.28	1994	354.74	354.96	-0.22	
Pedestrian Bridge	1888	350.87	350.92	-0.05	1888	352.01	352.23	-0.22	1888	354.32	354.56	-0.24	
	1830	350.91	350.97	-0.06	1830	351.84	352.21	-0.37	1830	354.18	354.4	-0.22	
	1641	350.1	350.14	-0.04	1641	350.91	351.21	-0.3	1641	353.2	353.39	-0.19	
	1463	349.44	349.48	-0.04	1463	350.19	350.44	-0.25	1463	352.42	352.6	-0.18	
	1291	349.19	349.2	-0.01	1291	350.04	350.14	-0.1	1291	352.19	352.38	-0.19	
	1124	348.73	348.74	-0.01	1124	349.62	349.7	-0.08	1124	351.8	351.99	-0.19	
	994	348.35	348.36	-0.01	994	349.27	349.36	-0.09	994	351.48	351.67	-0.19	
	911	348.12	348.13	-0.01	911	349.08	349.16	-0.08	911	351.3	351.5	-0.2	
	762	347.48	347.5	-0.02	762	348.5	348.6	-0.1	762	350.88	351.1	-0.22	
	658	347.26	347.27	-0.01	658	348.28	348.38	-0.1	658	350.72	350.95	-0.23	
	526	347.12	347.14	-0.02	526	348.16	348.26	-0.1	526	350.61	350.84	-0.23	
	380	346.73	346.75	-0.02	380	347.78	347.89	-0.11	380	350.27	350.51	-0.24	
	146	344.79	344.81	-0.02	146	346.04	346.17	-0.13	146	348.56	348.8	-0.24	
	63	344.09	344.1	-0.01	63	345.39	345.52	-0.13	63	348.2	348.46	-0.26	

Legend	
	< 0
	0
	> 0 to 3
	> 3 to 6

Little Plumtree Branch Proposed Options Water Surface Elevation Comparisons

Roadway Crossing	River Station	2-Year Storm Event: Change in Water Surface Elevation from Existing (ft)					10-Year Storm Event: Change in Water Surface Elevation from Existing (ft)					100-Year Storm Event: Change in Water Surface Elevation from Existing (ft)					
		R	S	T	U	V	R	S	T	U	V	R	S	T	U	V	
	9415	0.01	0.26	0.01	0.01	0	0.01	0.93	0.01	0.01	0	-0.01	0.57	-0.01	-0.01	0	Zone 1
	9282	0.01	0.87	0.01	0.01	0	0	1.86	0	0	0	-0.01	1.17	-0.01	-0.01	0	
Ramblewood Rd. and N. Chatham Rd.	9224	0	1.94	0	0	0	0	3.04	0	0	0	-0.02	2.64	-0.02	-0.02	0	
	9094	0		0	0	0	-0.01		-0.01	-0.01	0	-0.01		-0.01	-0.01	0	
	9033	0.01		0	0	0	0		0	0	0	0		0	0	0	
	8938	0		-0.01	-0.01	0	0.01		0.01	0.01	0	0		0	0	0	
	8776	0.02		0.01	0.01	0	0.02		0.02	0.02	0	0.02		0.02	0.02	0	
	8628	0		0	0	0	0.01		0.01	0.01	0	0.01		0.01	0.01	0	
	8459	-0.01		-0.01	-0.01	0	0		0	0	0	0.02		0.02	0.02	0	
	8329	0.01		0.01	0.01	0	0.01		0.01	0.01	0	0.01		0.01	0.01	0	
	8166	-0.01		-0.01	-0.01	0	-0.01		-0.01	-0.01	0	-0.02		-0.02	-0.02	0	
	8010	0		0	0	0	0		0	0	0	0		0	0	0	
N. Chatham Rd.	7921	0.46		0.29	0.66	0.89	0.55		0.15	0.72	0.7	1.54		0.13	1.75	0.5	
	7735	0.32	0	0.32	0.53	1.17	0.07	-0.01	0.2	0.26	1.15	-0.08	-0.03	0.18	0.13	0.96	Zone 2
	7645	0.59	0.02	0.37	0.77	1.33	0.29	0.02	0.18	0.46	1.2	0.09	0.03	0.17	0.26	0.63	
	7560	1.01	0.01	0.41	1.19	1.55	0.65	0.02	0.15	0.81	1.41	0.35	0.08	0.16	0.48	0.47	
	7499	2	0.01	0.41	2.16	2.08	1.39	0	0.14	1.54	2.05	0.41	0.01	0.1	0.58	0.47	
Private Drive to School/Church	7437	2.52	0	0.39	2.79	3.47	1.57	0.01	0.13	1.65	2.78	0.64	0.01	0.09	0.88	1.15	
	7358	0	0.02	0.36	0.27	1.26	0.08	0.08	0.23	0.27	1.5	-0.08	0.11	0.24	0.19	1.54	
	7261	0	0.03	0.4	0.32	1.06	0	0	0.28	0.25	1.42	-0.08	-0.01	0.22	0.18	1.53	
	7059	0.02	0.08	0.4	0.32	0.56	0	0.01	0.31	0.28	0.94	-0.14	0.01	0.25	0.21	0.96	
	6890	0.04	0.12	0.33	0.26	0.15	0.05	0.16	0.35	0.32	0.29	-0.13	-0.03	0.24	0.18	0.37	
	6690	-0.2	-0.21	0.05	-0.02	0	-0.25	-0.25	0.04	0.01	0	-0.05	-0.02	0.17	0.14	-0.04	
	6326	0.3	0.32	0.55	0.49	0	0.32	0.36	0.61	0.58	0	0.01	0.15	0.24	0.21	-0.07	
	6045	-0.03	-0.04	0.33	0.24	0	-0.04	-0.05	0.28	0.24	0	-0.1	-0.04	0.24	0.19	-0.07	
	5847	-0.02	-0.02	0.31	0.23	0	0	0.02	0.24	0.21	0	0.01	0.17	0.27	0.24	-0.06	
	5668	-0.03	-0.03	0.25	0.18	0	0	0.06	0.24	0.21	0	-0.06	0.21	0.26	0.22	-0.06	
	5520	0.09	0.04	0.37	0.3	0	0.02	0.14	0.33	0.3	0	-0.05	0.24	0.25	0.21	-0.06	
	5442	0	-0.01	0.29	0.22	0	0	0.12	0.3	0.27	0	-0.06	0.23	0.26	0.21	-0.06	

Legend	
	< 0
	0
	> 0 to 3
	> 3