APPENDIX F

25-Year Storm Uproad Hydraulic Analysis – FlowMaster Output

25 YEAR STORM, Sub-Area 3 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	1.96	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.17	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	0.51	ft²
Wetted Perimeter	6.79	ft
Hydraulic Radius	0.08	ft

25 YEAR STORM, Sub-Area 3 - Section A

Results

Top Width		6.75	ft
Normal Depth		0.17	ft
Critical Depth		0.23	ft
Critical Slope		0.00522	ft/ft
Velocity		3.82	ft/s
Velocity Head		0.23	ft
Specific Energy		0.39	ft
Froude Number		2.45	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.17	ft
Critical Depth	0.23	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00522	ft/ft

25 YEAR STORM, Sub-Area 3 - Section A

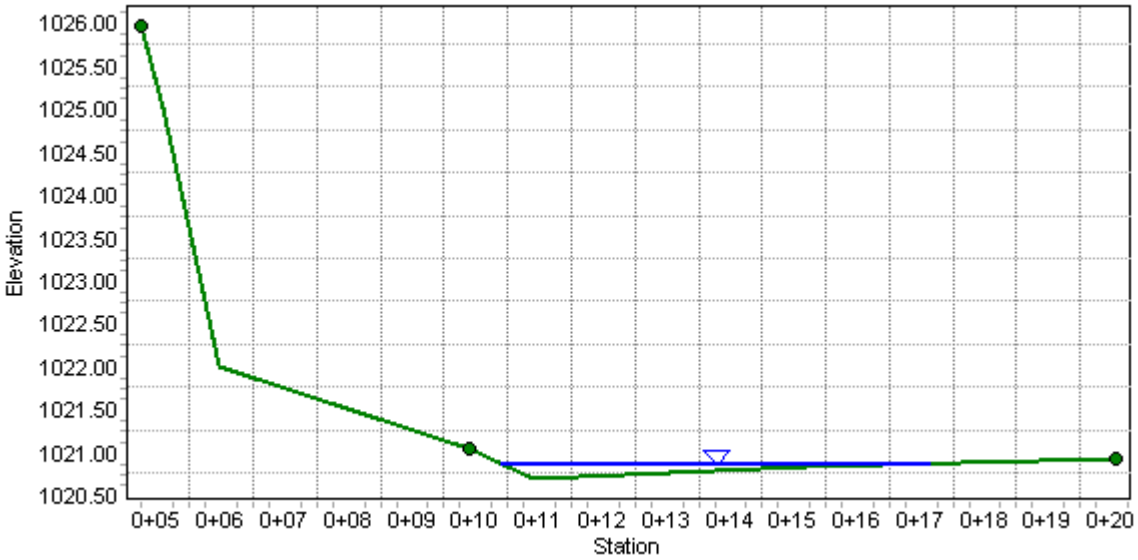
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.17	ft
Discharge	1.96	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 4 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	3.32	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.20	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	0.78	ft²
Wetted Perimeter	8.77	ft
Hydraulic Radius	0.09	ft

25 YEAR STORM, Sub-Area 4 - Section A

Results

Top Width		8.73	ft
Normal Depth		0.20	ft
Critical Depth		0.28	ft
Critical Slope		0.00469	ft/ft
Velocity		4.25	ft/s
Velocity Head		0.28	ft
Specific Energy		0.48	ft
Froude Number		2.51	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.20	ft
Critical Depth	0.28	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00469	ft/ft

25 YEAR STORM, Sub-Area 4 - Section A

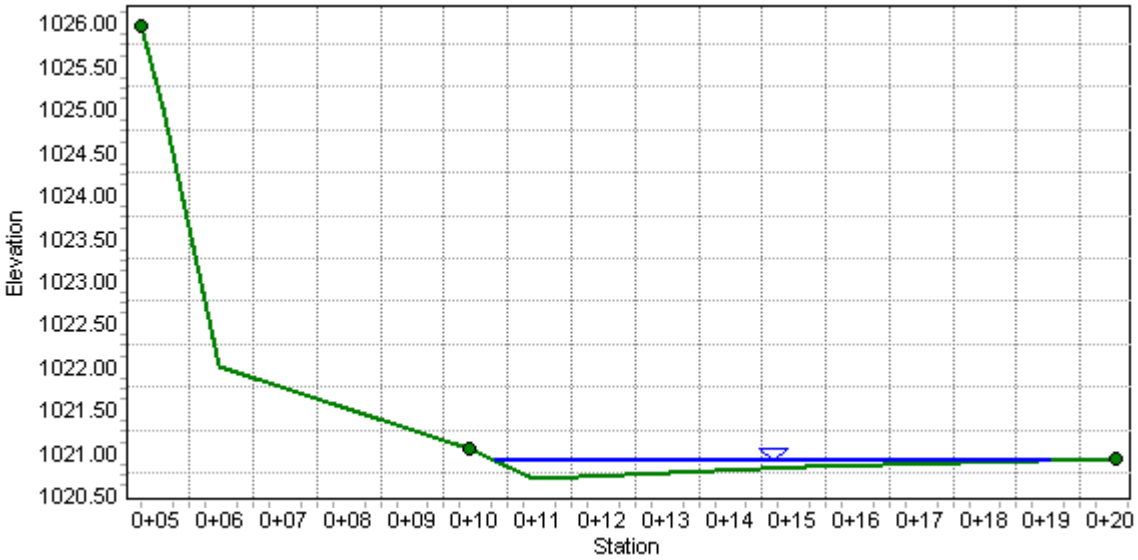
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.20	ft
Discharge	3.32	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 5 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	4.83	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.23	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	1.02	ft²
Wetted Perimeter	9.86	ft
Hydraulic Radius	0.10	ft

25 YEAR STORM, Sub-Area 5 - Section A

Results

Top Width		9.81	ft
Normal Depth		0.23	ft
Critical Depth		0.32	ft
Critical Slope		0.00435	ft/ft
Velocity		4.72	ft/s
Velocity Head		0.35	ft
Specific Energy		0.57	ft
Froude Number		2.58	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.23	ft
Critical Depth	0.32	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00435	ft/ft

25 YEAR STORM, Sub-Area 5 - Section A

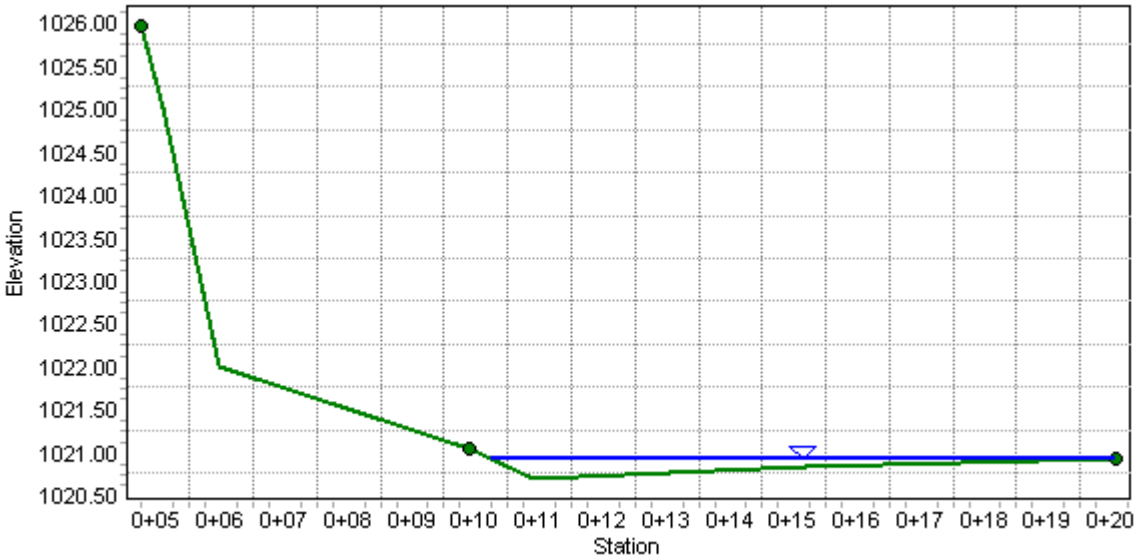
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.23	ft
Discharge	4.83	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 6 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	6.49	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.25	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	1.23	ft²
Wetted Perimeter	9.94	ft
Hydraulic Radius	0.12	ft

25 YEAR STORM, Sub-Area 6 - Section A

Results

Top Width		9.87	ft
Normal Depth		0.25	ft
Critical Depth		0.36	ft
Critical Slope		0.00411	ft/ft
Velocity		5.30	ft/s
Velocity Head		0.44	ft
Specific Energy		0.68	ft
Froude Number		2.65	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.25	ft
Critical Depth	0.36	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00411	ft/ft

25 YEAR STORM, Sub-Area 6 - Section A

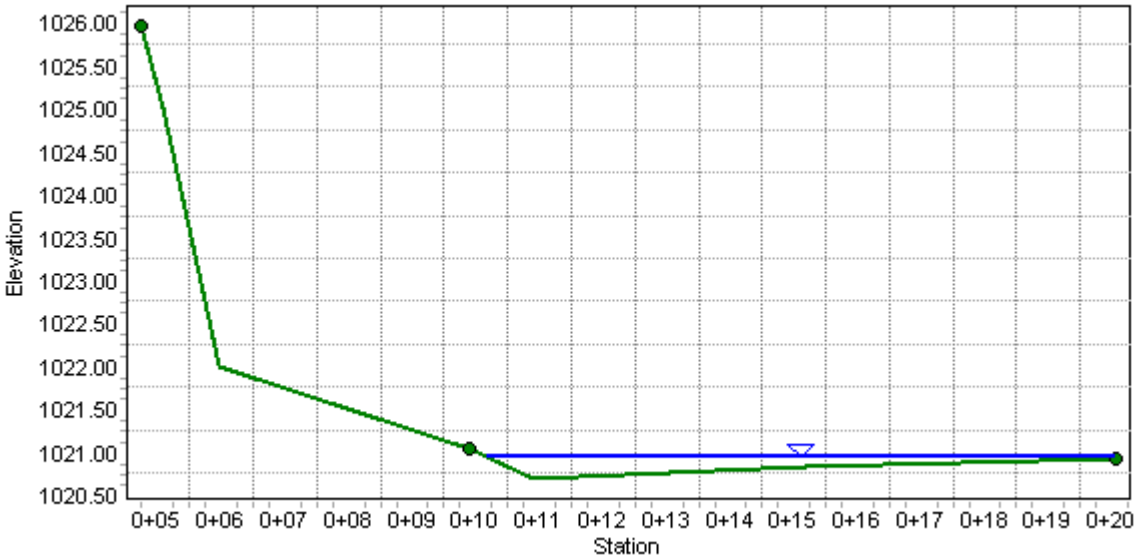
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.25	ft
Discharge	6.49	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 7 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	9.47	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.28	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	1.55	ft²
Wetted Perimeter	10.08	ft
Hydraulic Radius	0.15	ft

25 YEAR STORM, Sub-Area 7 - Section A

Results

Top Width		9.97	ft
Normal Depth		0.28	ft
Critical Depth		0.43	ft
Critical Slope		0.00384	ft/ft
Velocity		6.12	ft/s
Velocity Head		0.58	ft
Specific Energy		0.86	ft
Froude Number		2.74	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.28	ft
Critical Depth	0.43	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00384	ft/ft

25 YEAR STORM, Sub-Area 7 - Section A

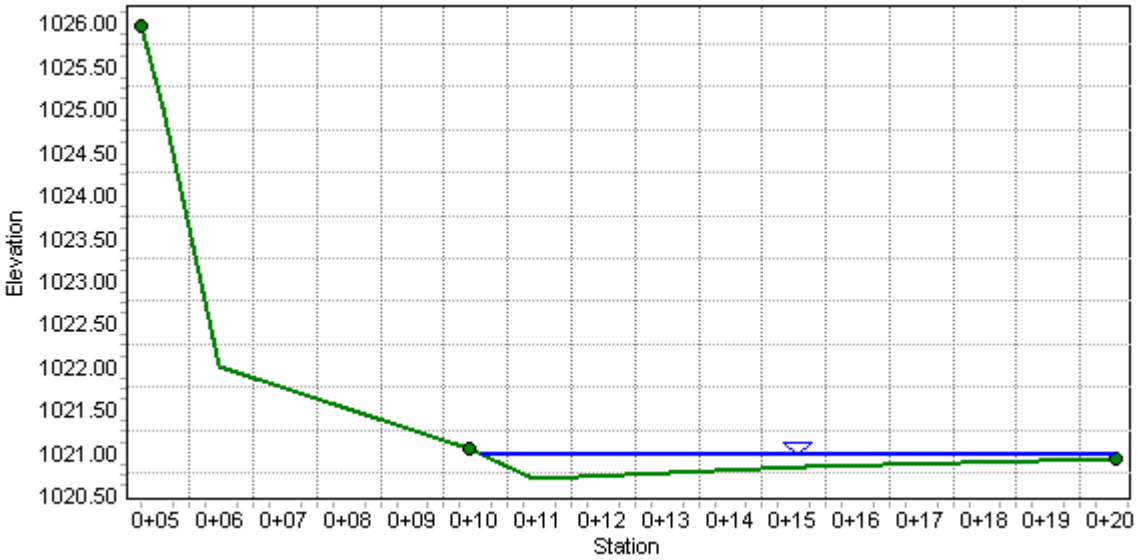
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.28	ft
Discharge	9.47	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 8 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	11.26	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.30	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	1.72	ft²
Wetted Perimeter	10.15	ft
Hydraulic Radius	0.17	ft

25 YEAR STORM, Sub-Area 8 - Section A

Results

Top Width		10.02	ft
Normal Depth		0.30	ft
Critical Depth		0.47	ft
Critical Slope		0.00372	ft/ft
Velocity		6.55	ft/s
Velocity Head		0.67	ft
Specific Energy		0.96	ft
Froude Number		2.79	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.30	ft
Critical Depth	0.47	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00372	ft/ft

25 YEAR STORM, Sub-Area 8 - Section A

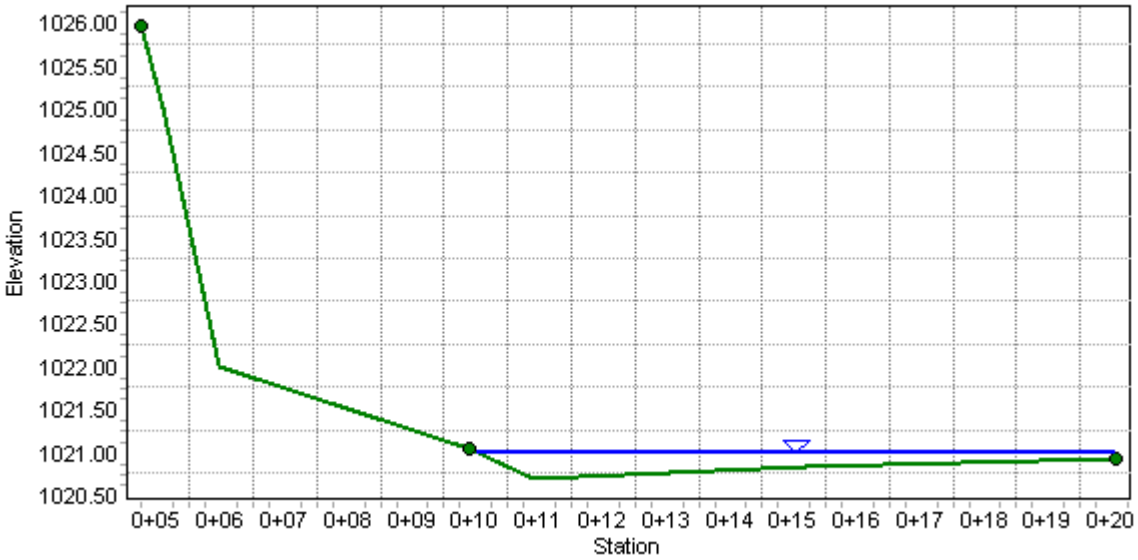
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.30	ft
Discharge	11.26	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 9 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03400	ft/ft
Discharge	12.14	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.31	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	1.82	ft²
Wetted Perimeter	10.19	ft
Hydraulic Radius	0.18	ft

25 YEAR STORM, Sub-Area 9 - Section A

Results

Top Width		10.04	ft
Normal Depth		0.31	ft
Critical Depth		0.49	ft
Critical Slope		0.00367	ft/ft
Velocity		6.68	ft/s
Velocity Head		0.69	ft
Specific Energy		1.00	ft
Froude Number		2.77	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.31	ft
Critical Depth	0.49	ft
Channel Slope	0.03400	ft/ft
Critical Slope	0.00367	ft/ft

25 YEAR STORM, Sub-Area 9 - Section A

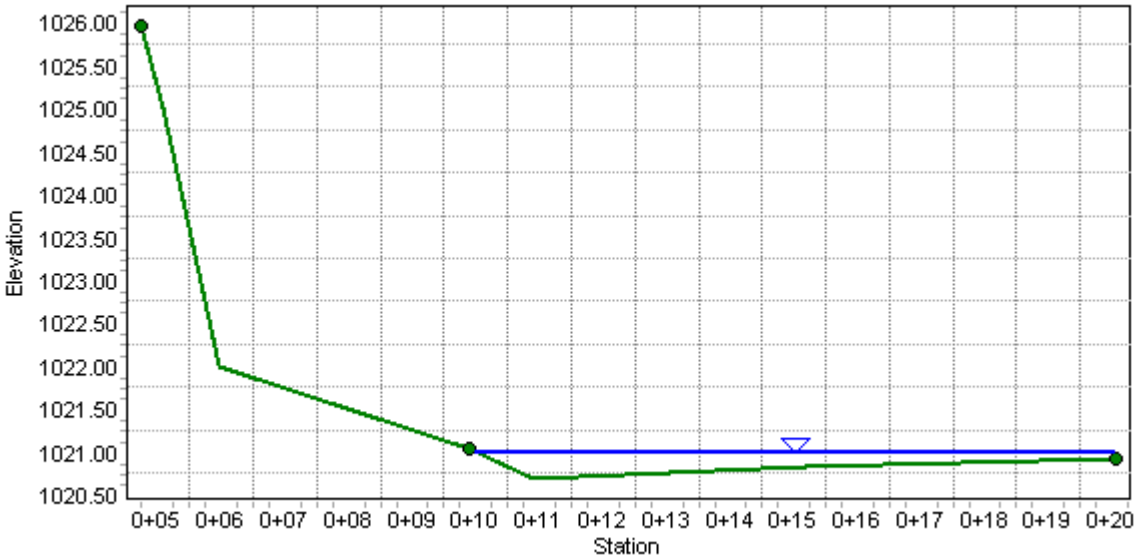
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03400	ft/ft
Normal Depth	0.31	ft
Discharge	12.14	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 10 - Section B

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03200	ft/ft
Discharge	13.66	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1024.46
0+06	1019.51
0+09	1019.00
0+10	1018.92
0+11	1018.81
0+15	1018.77
0+18	1019.00
0+19	1019.06
0+20	1019.06

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1024.46)	(0+10, 1018.92)	0.020
(0+10, 1018.92)	(0+20, 1019.06)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.31	ft
Elevation Range	1018.77 to 1024.46 ft	
Flow Area	2.15	ft²

25 YEAR STORM, Sub-Area 10 - Section B

Results

Wetted Perimeter		11.02	ft
Hydraulic Radius		0.20	ft
Top Width		10.97	ft
Normal Depth		0.31	ft
Critical Depth		0.48	ft
Critical Slope		0.00424	ft/ft
Velocity		6.35	ft/s
Velocity Head		0.63	ft
Specific Energy		0.94	ft
Froude Number		2.53	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.31	ft
Critical Depth	0.48	ft
Channel Slope	0.03200	ft/ft
Critical Slope	0.00424	ft/ft

25 YEAR STORM, Sub-Area 10 - Section B

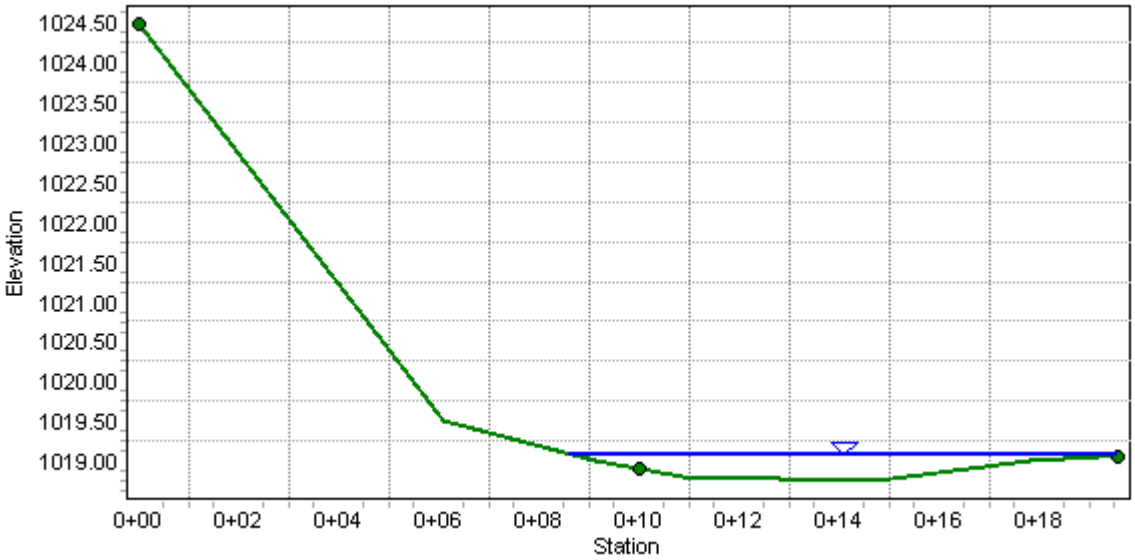
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03200	ft/ft
Normal Depth	0.31	ft
Discharge	13.66	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 11 - Section C

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04400	ft/ft
Discharge	15.87	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	1016.00
0+04	1015.00
0+06	1014.00
0+07	1013.00
0+09	1011.90
0+10	1012.29
0+15	1012.53
0+20	1012.58
0+20	1012.38
0+21	1012.26
0+25	1013.00
0+26	1013.28

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 1016.00)	(0+10, 1012.29)	0.020
(0+10, 1012.29)	(0+20, 1012.58)	0.013
(0+20, 1012.58)	(0+26, 1013.28)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

25 YEAR STORM, Sub-Area 11 - Section C

Results

Normal Depth		0.70	ft
Elevation Range	1011.90 to 1016.00 ft		
Flow Area		2.63	ft²
Wetted Perimeter		15.60	ft
Hydraulic Radius		0.17	ft
Top Width		15.19	ft
Normal Depth		0.70	ft
Critical Depth		0.86	ft
Critical Slope		0.00556	ft/ft
Velocity		6.04	ft/s
Velocity Head		0.57	ft
Specific Energy		1.27	ft
Froude Number		2.56	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.70	ft
Critical Depth	0.86	ft
Channel Slope	0.04400	ft/ft
Critical Slope	0.00556	ft/ft

25 YEAR STORM, Sub-Area 11 - Section C

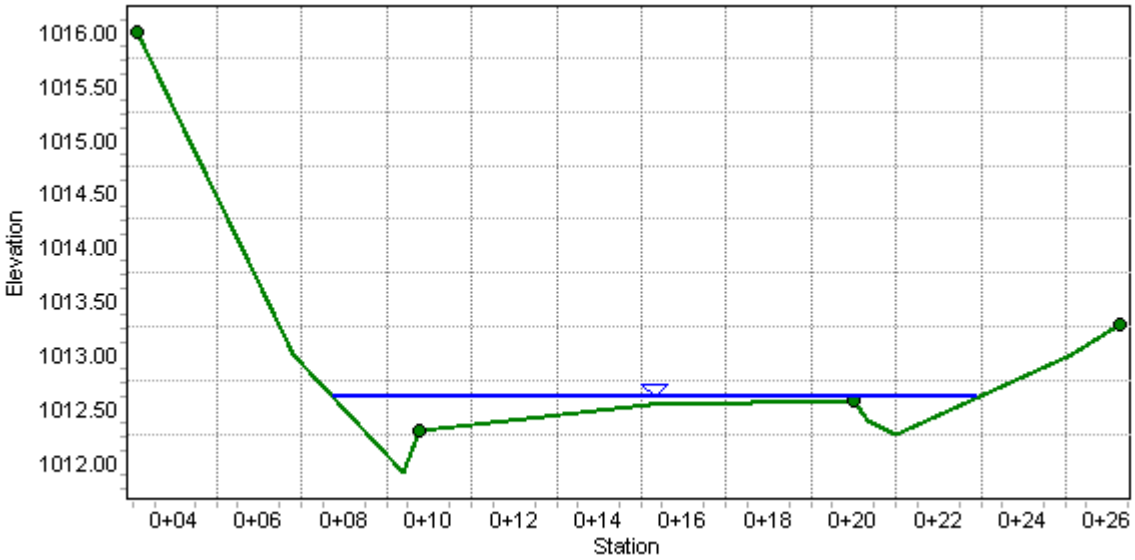
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04400	ft/ft
Normal Depth	0.70	ft
Discharge	15.87	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 12 - Section D

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03200	ft/ft
Discharge	16.79	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	1009.85
0+09	1009.52
0+10	1009.60
0+15	1009.52
0+22	1009.20
0+22	1009.62

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 1009.85)	(0+10, 1009.60)	0.020
(0+10, 1009.60)	(0+22, 1009.62)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.47	ft
Elevation Range	1009.20 to 1009.85 ft	
Flow Area	2.94	ft²
Wetted Perimeter	15.90	ft
Hydraulic Radius	0.18	ft
Top Width	15.67	ft

25 YEAR STORM, Sub-Area 12 - Section D

Results

Normal Depth		0.47	ft
Critical Depth		0.61	ft
Critical Slope		0.00510	ft/ft
Velocity		5.72	ft/s
Velocity Head		0.51	ft
Specific Energy		0.97	ft
Froude Number		2.33	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.47	ft
Critical Depth	0.61	ft
Channel Slope	0.03200	ft/ft
Critical Slope	0.00510	ft/ft

25 YEAR STORM, Sub-Area 12 - Section D

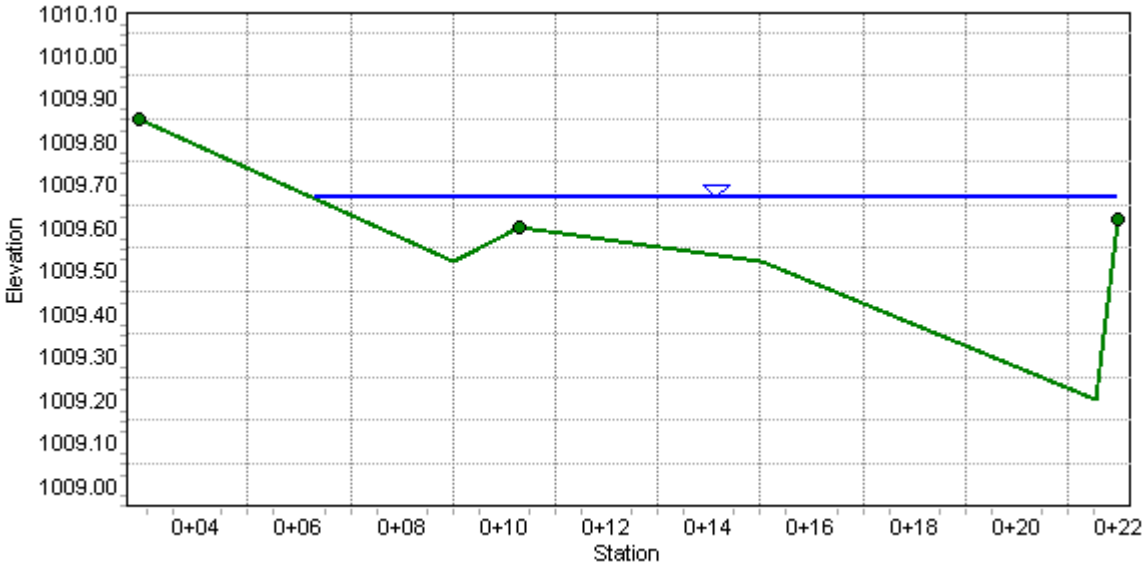
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03200	ft/ft
Normal Depth	0.47	ft
Discharge	16.79	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 13 - Section E

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03800	ft/ft
Discharge	23.82	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+06	1012.00
0+09	1006.00
0+10	1005.46
0+11	1005.47
0+15	1005.66
0+20	1005.85
0+20	1005.93

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+06, 1012.00)	(0+11, 1005.47)	0.020
(0+11, 1005.47)	(0+20, 1005.93)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.46	ft
Elevation Range	1005.46 to 1012.00 ft	
Flow Area	2.94	ft²
Wetted Perimeter	11.32	ft
Hydraulic Radius	0.26	ft

25 YEAR STORM, Sub-Area 13 - Section E

Results

Top Width		11.02	ft
Normal Depth		0.46	ft
Critical Depth		0.72	ft
Critical Slope		0.00415	ft/ft
Velocity		8.11	ft/s
Velocity Head		1.02	ft
Specific Energy		1.48	ft
Froude Number		2.77	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.46	ft
Critical Depth	0.72	ft
Channel Slope	0.03800	ft/ft
Critical Slope	0.00415	ft/ft

25 YEAR STORM, Sub-Area 13 - Section E

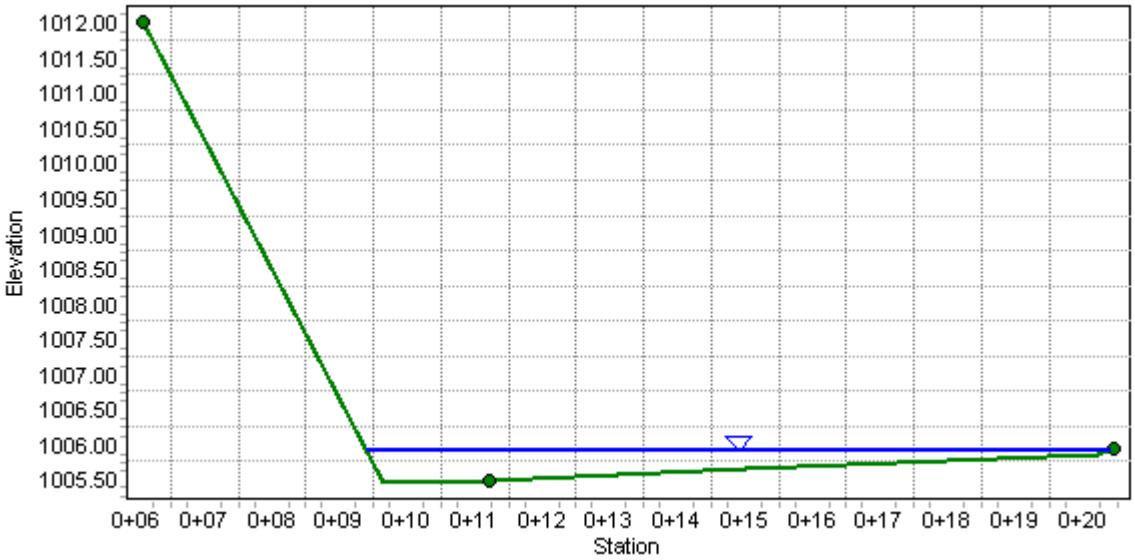
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03800	ft/ft
Normal Depth	0.46	ft
Discharge	23.82	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 14 - Section F

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.06300	ft/ft
Discharge	24.38	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+07	1007.00
0+07	1006.00
0+08	1005.00
0+09	1004.00
0+11	1003.89
0+11	1003.99
0+15	1004.07
0+20	1004.06
0+21	1004.22

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+07, 1007.00)	(0+11, 1003.99)	0.020
(0+11, 1003.99)	(0+21, 1004.22)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.37	ft
Elevation Range	1003.89 to 1007.00 ft	
Flow Area	2.67	ft²

25 YEAR STORM, Sub-Area 14 - Section F

Results

Wetted Perimeter		12.78	ft
Hydraulic Radius		0.21	ft
Top Width		12.60	ft
Normal Depth		0.37	ft
Critical Depth		0.65	ft
Critical Slope		0.00407	ft/ft
Velocity		9.13	ft/s
Velocity Head		1.30	ft
Specific Energy		1.67	ft
Froude Number		3.50	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.37	ft
Critical Depth	0.65	ft
Channel Slope	0.06300	ft/ft
Critical Slope	0.00407	ft/ft

25 YEAR STORM, Sub-Area 14 - Section F

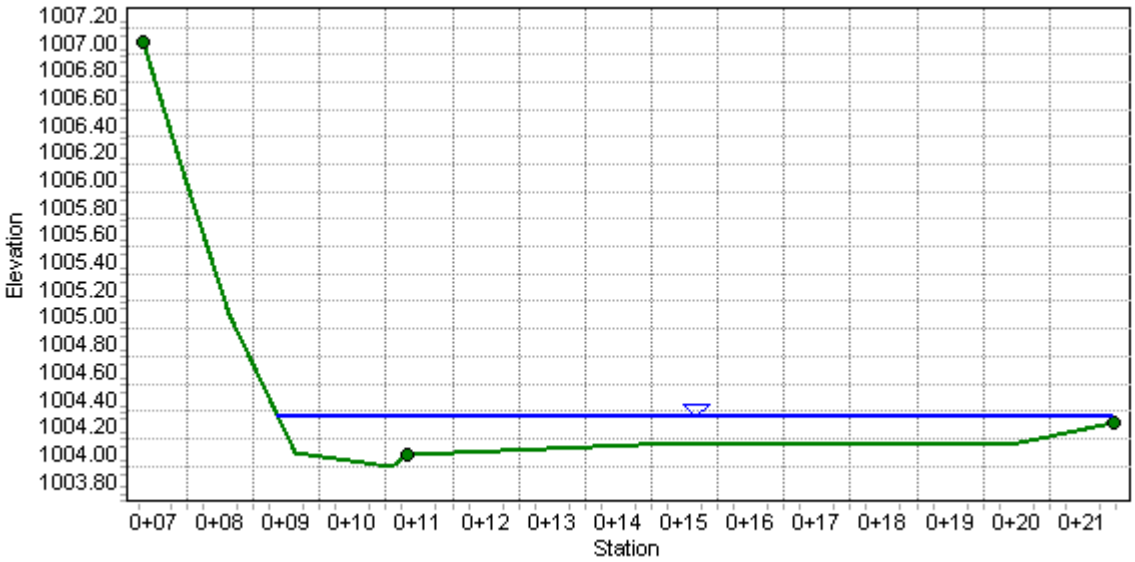
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.06300	ft/ft
Normal Depth	0.37	ft
Discharge	24.38	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 15 - Section G

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Discharge	25.39	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	1006.00
0+06	1002.00
0+06	1001.60
0+10	1001.27
0+10	1001.40
0+15	1001.63
0+20	1001.72
0+21	1001.46
0+23	1001.78

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 1006.00)	(0+10, 1001.40)	0.020
(0+10, 1001.40)	(0+20, 1001.72)	0.013
(0+20, 1001.72)	(0+23, 1001.78)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.51	ft
Elevation Range	1001.27 to 1006.00 ft	

25 YEAR STORM, Sub-Area 15 - Section G

Results

Flow Area		3.78	ft²
Wetted Perimeter		17.50	ft
Hydraulic Radius		0.22	ft
Top Width		17.30	ft
Normal Depth		0.51	ft
Critical Depth		0.69	ft
Critical Slope		0.00560	ft/ft
Velocity		6.71	ft/s
Velocity Head		0.70	ft
Specific Energy		1.21	ft
Froude Number		2.53	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.51	ft
Critical Depth	0.69	ft
Channel Slope	0.04300	ft/ft
Critical Slope	0.00560	ft/ft

25 YEAR STORM, Sub-Area 15 - Section G

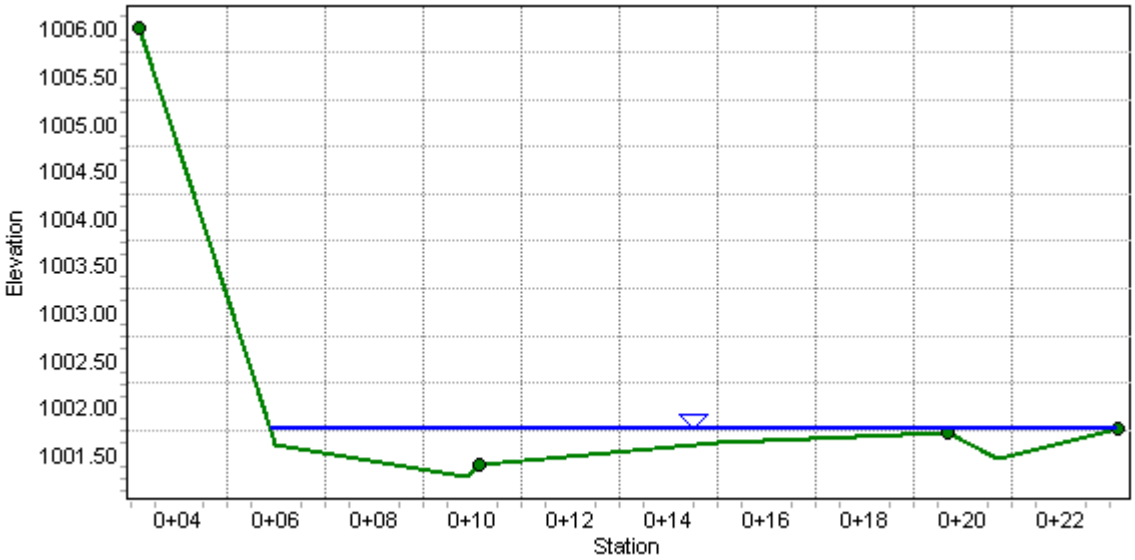
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Normal Depth	0.51	ft
Discharge	25.39	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 16 - Section H

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03700	ft/ft
Discharge	27.08	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	1003.00
0+04	1002.00
0+07	1000.00
0+08	998.66
0+10	998.66
0+11	998.75
0+15	998.89
0+20	998.91
0+21	998.71
0+23	999.00
0+26	999.28

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 1003.00)	(0+11, 998.75)	0.020
(0+11, 998.75)	(0+20, 998.91)	0.013
(0+20, 998.91)	(0+26, 999.28)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

25 YEAR STORM, Sub-Area 16 - Section H

Results

Normal Depth		0.43	ft
Elevation Range	998.66 to 1003.00 ft		
Flow Area		4.00	ft²
Wetted Perimeter		16.53	ft
Hydraulic Radius		0.24	ft
Top Width		16.30	ft
Normal Depth		0.43	ft
Critical Depth		0.63	ft
Critical Slope		0.00539	ft/ft
Velocity		6.77	ft/s
Velocity Head		0.71	ft
Specific Energy		1.14	ft
Froude Number		2.41	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.43	ft
Critical Depth	0.63	ft
Channel Slope	0.03700	ft/ft
Critical Slope	0.00539	ft/ft

25 YEAR STORM, Sub-Area 16 - Section H

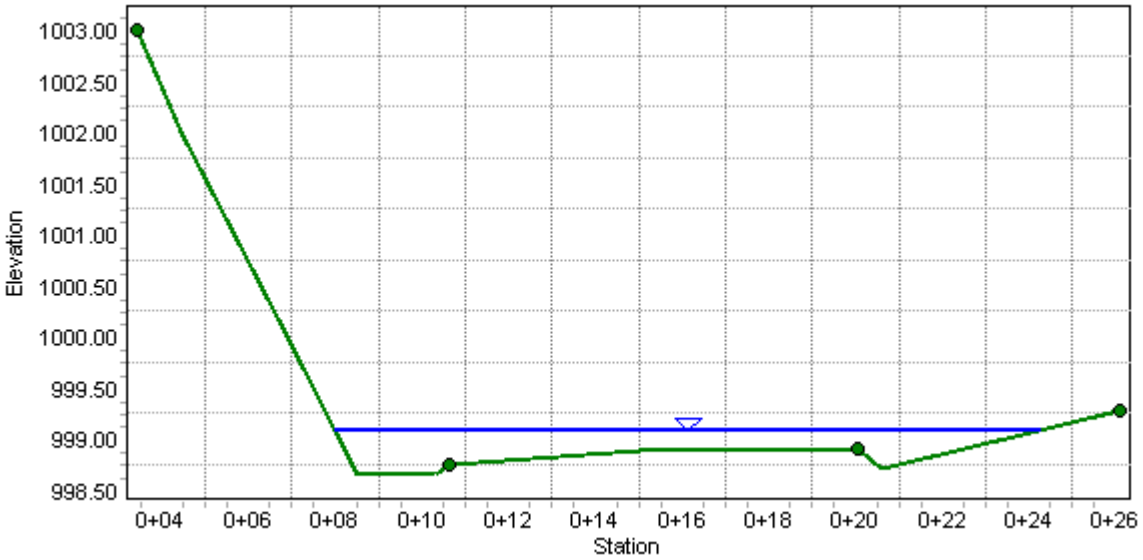
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03700	ft/ft
Normal Depth	0.43	ft
Discharge	27.08	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 17 - Section I

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02700	ft/ft
Discharge	27.62	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+02	1000.00
0+03	999.00
0+03	998.00
0+09	996.64
0+10	996.92
0+15	997.04
0+20	996.91
0+21	996.68
0+23	996.31
0+25	997.00
0+26	997.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+02, 1000.00)	(0+10, 996.92)	0.020
(0+10, 996.92)	(0+20, 996.91)	0.013
(0+20, 996.91)	(0+26, 997.00)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

25 YEAR STORM, Sub-Area 17 - Section I

Results

Normal Depth		0.80	ft
Elevation Range	996.31 to 1000.00 ft		
Flow Area		4.75	ft²
Wetted Perimeter		19.00	ft
Hydraulic Radius		0.25	ft
Top Width		18.60	ft
Normal Depth		0.80	ft
Critical Depth		0.96	ft
Critical Slope		0.00571	ft/ft
Velocity		5.82	ft/s
Velocity Head		0.53	ft
Specific Energy		1.33	ft
Froude Number		2.03	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.80	ft
Critical Depth	0.96	ft
Channel Slope	0.02700	ft/ft
Critical Slope	0.00571	ft/ft

25 YEAR STORM, Sub-Area 17 - Section I

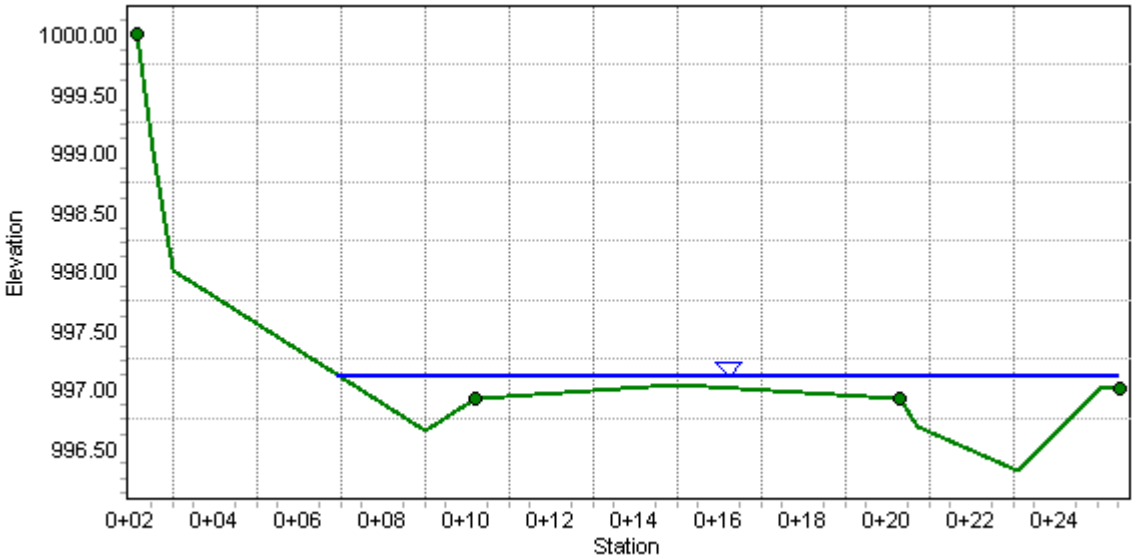
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02700	ft/ft
Normal Depth	0.80	ft
Discharge	27.62	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 18 - Section J

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05300	ft/ft
Discharge	28.96	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+01	1000.00
0+02	999.00
0+06	996.00
0+07	994.95
0+08	995.11
0+08	995.21
0+15	995.33
0+22	995.19
0+23	994.90
0+25	994.97

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+01, 1000.00)	(0+08, 995.21)	0.020
(0+08, 995.21)	(0+22, 995.19)	0.013
(0+22, 995.19)	(0+25, 994.97)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.50	ft

25 YEAR STORM, Sub-Area 18 - Section J

Results

Elevation Range	994.90 to 1000.00 ft		
Flow Area		3.82	ft²
Wetted Perimeter		19.46	ft
Hydraulic Radius		0.20	ft
Top Width		18.78	ft
Normal Depth		0.50	ft
Critical Depth		0.72	ft
Critical Slope		0.00486	ft/ft
Velocity		7.58	ft/s
Velocity Head		0.89	ft
Specific Energy		1.40	ft
Froude Number		2.96	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.50	ft
Critical Depth	0.72	ft
Channel Slope	0.05300	ft/ft
Critical Slope	0.00486	ft/ft

25 YEAR STORM, Sub-Area 18 - Section J

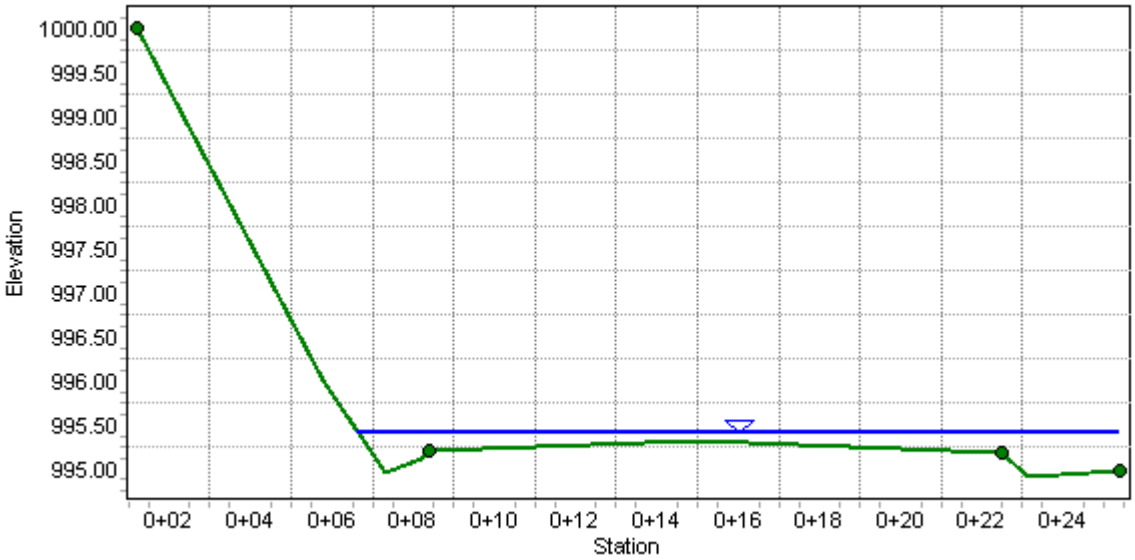
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05300	ft/ft
Normal Depth	0.50	ft
Discharge	28.96	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 19 - Section K

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	29.79	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+02	995.00
0+06	990.00
0+07	989.00
0+09	988.00
0+10	987.85
0+17	988.00
0+20	988.08
0+20	988.23
0+21	988.31

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+02, 995.00)	(0+10, 987.85)	0.020
(0+10, 987.85)	(0+20, 988.23)	0.013
(0+20, 988.23)	(0+21, 988.31)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.42	ft
Elevation Range	987.85 to 995.00 ft	

25 YEAR STORM, Sub-Area 19 - Section K

Results

Flow Area		3.47	ft²
Wetted Perimeter		12.19	ft
Hydraulic Radius		0.28	ft
Top Width		12.05	ft
Normal Depth		0.42	ft
Critical Depth		0.71	ft
Critical Slope		0.00365	ft/ft
Velocity		8.59	ft/s
Velocity Head		1.15	ft
Specific Energy		1.57	ft
Froude Number		2.83	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.42	ft
Critical Depth	0.71	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00365	ft/ft

25 YEAR STORM, Sub-Area 19 - Section K

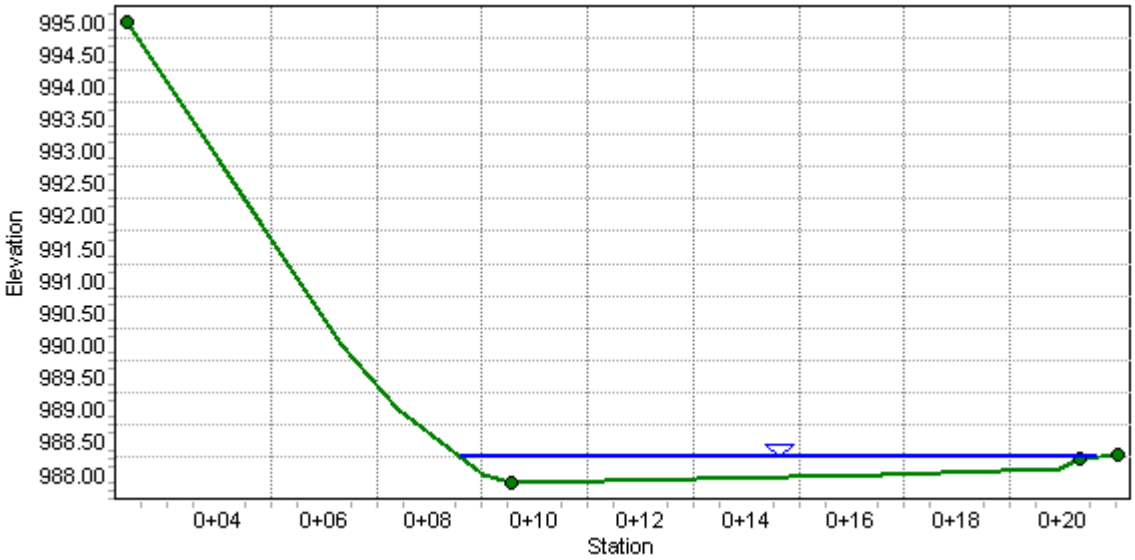
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.42	ft
Discharge	29.79	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 20 - Section L

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.06100	ft/ft
Discharge	29.88	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+01	992.00
0+03	990.00
0+06	985.00
0+07	984.00
0+10	983.29
0+11	983.66
0+15	983.76
0+19	983.74
0+19	984.00
0+19	984.21
0+20	984.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+01, 992.00)	(0+11, 983.66)	0.020
(0+11, 983.66)	(0+20, 984.00)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.67	ft

25 YEAR STORM, Sub-Area 20 - Section L

Results

Elevation Range	983.29 to 992.00 ft		
Flow Area		3.14	ft²
Wetted Perimeter		12.31	ft
Hydraulic Radius		0.26	ft
Top Width		12.02	ft
Normal Depth		0.67	ft
Critical Depth		0.98	ft
Critical Slope		0.00468	ft/ft
Velocity		9.51	ft/s
Velocity Head		1.40	ft
Specific Energy		2.07	ft
Froude Number		3.28	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.67	ft
Critical Depth	0.98	ft
Channel Slope	0.06100	ft/ft
Critical Slope	0.00468	ft/ft

25 YEAR STORM, Sub-Area 20 - Section L

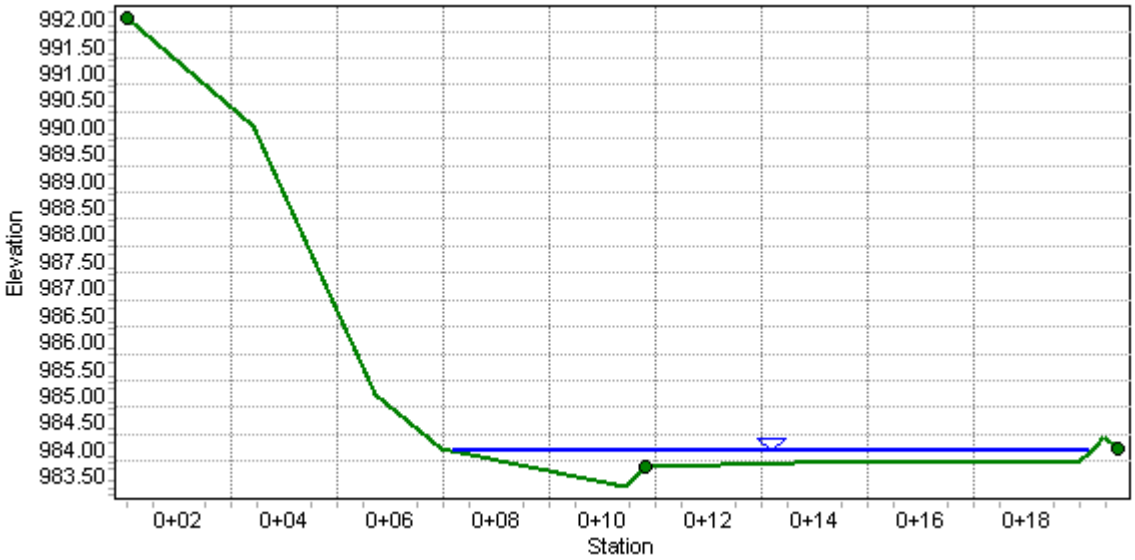
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.06100	ft/ft
Normal Depth	0.67	ft
Discharge	29.88	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 21 - Section M

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03300	ft/ft
Discharge	29.97	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+06	985.00
0+07	980.00
0+08	978.00
0+09	977.78
0+10	977.74
0+10	977.81
0+15	978.01
0+20	977.95
0+20	977.96
0+21	977.98
0+23	978.16

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+06, 985.00)	(0+10, 977.81)	0.020
(0+10, 977.81)	(0+23, 978.16)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.48	ft

25 YEAR STORM, Sub-Area 21 - Section M

Results

Elevation Range	977.74 to 985.00 ft		
Flow Area		3.81	ft²
Wetted Perimeter		14.51	ft
Hydraulic Radius		0.26	ft
Top Width		14.26	ft
Normal Depth		0.48	ft
Critical Depth		0.73	ft
Critical Slope		0.00381	ft/ft
Velocity		7.87	ft/s
Velocity Head		0.96	ft
Specific Energy		1.44	ft
Froude Number		2.69	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.48	ft
Critical Depth	0.73	ft
Channel Slope	0.03300	ft/ft
Critical Slope	0.00381	ft/ft

25 YEAR STORM, Sub-Area 21 - Section M

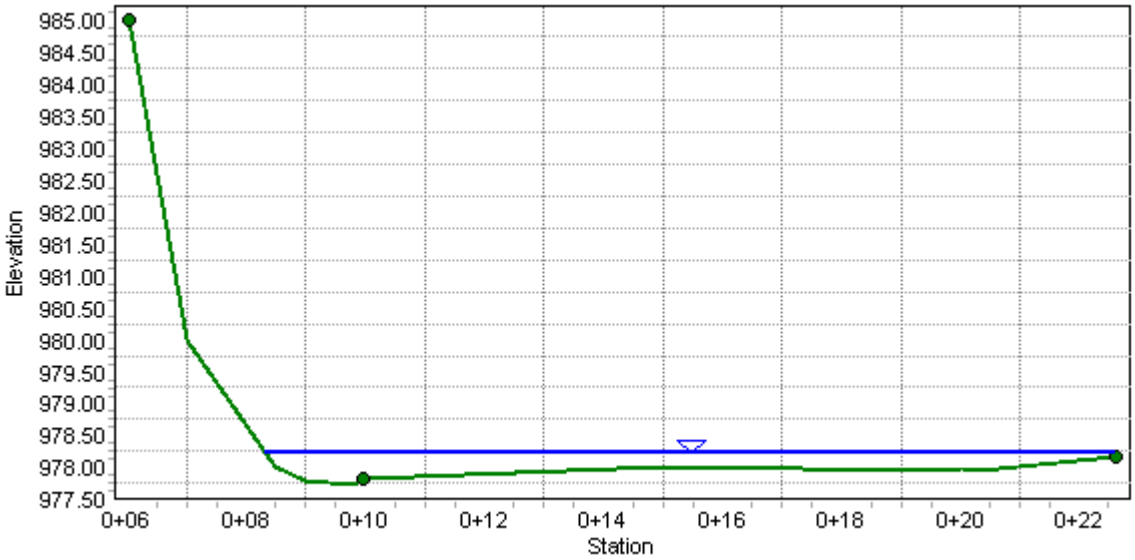
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03300	ft/ft
Normal Depth	0.48	ft
Discharge	29.97	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 22 - Section N

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Discharge	30.20	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	977.51
0+07	975.00
0+08	974.00
0+09	972.56
0+09	972.99
0+15	973.30
0+20	973.31
0+20	973.13
0+21	972.91
0+22	973.17

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 977.51)	(0+09, 972.99)	0.020
(0+09, 972.99)	(0+20, 973.31)	0.013
(0+20, 973.31)	(0+22, 973.17)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.90	ft

25 YEAR STORM, Sub-Area 22 - Section N

Results

Elevation Range	972.56 to 977.51 ft		
Flow Area		3.91	ft²
Wetted Perimeter		14.32	ft
Hydraulic Radius		0.27	ft
Top Width		13.30	ft
Normal Depth		0.90	ft
Critical Depth		1.15	ft
Critical Slope		0.00482	ft/ft
Velocity		7.72	ft/s
Velocity Head		0.93	ft
Specific Energy		1.83	ft
Froude Number		2.51	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.90	ft
Critical Depth	1.15	ft
Channel Slope	0.03600	ft/ft
Critical Slope	0.00482	ft/ft

25 YEAR STORM, Sub-Area 22 - Section N

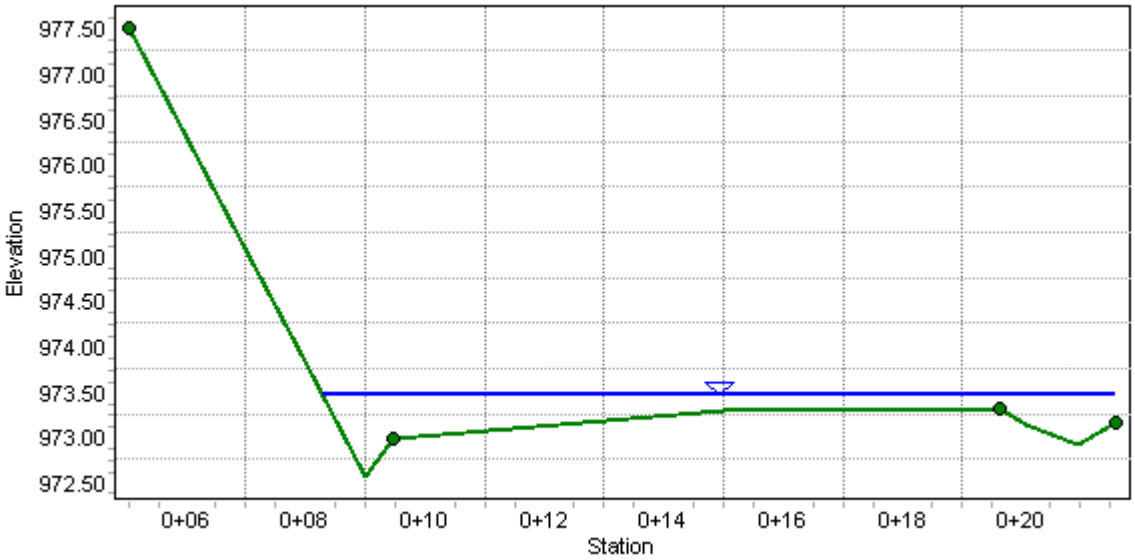
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Normal Depth	0.90	ft
Discharge	30.20	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 23 - Section O

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03700	ft/ft
Discharge	30.60	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+04	973.78
0+08	970.00
0+09	968.84
0+10	969.00
0+15	969.27
0+20	969.20
0+20	969.03
0+22	969.09
0+28	969.48

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+04, 973.78)	(0+10, 969.00)	0.020
(0+10, 969.00)	(0+20, 969.20)	0.013
(0+20, 969.20)	(0+28, 969.48)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.60	ft
Elevation Range	968.84 to 973.78 ft	

25 YEAR STORM, Sub-Area 23 - Section O

Results

Flow Area	4.55	ft²
Wetted Perimeter	18.68	ft
Hydraulic Radius	0.24	ft
Top Width	18.34	ft
Normal Depth	0.60	ft
Critical Depth	0.79	ft
Critical Slope	0.00554	ft/ft
Velocity	6.72	ft/s
Velocity Head	0.70	ft
Specific Energy	1.30	ft
Froude Number	2.38	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.60	ft
Critical Depth	0.79	ft
Channel Slope	0.03700	ft/ft
Critical Slope	0.00554	ft/ft

25 YEAR STORM, Sub-Area 23 - Section O

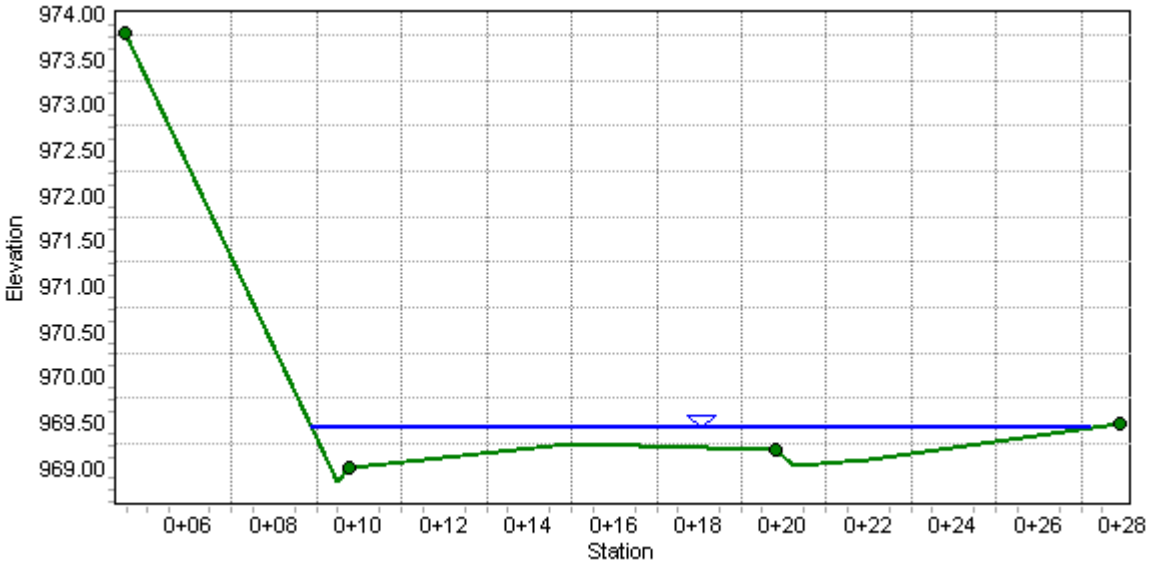
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03700	ft/ft
Normal Depth	0.60	ft
Discharge	30.60	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 24 - Section P

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04400	ft/ft
Discharge	30.94	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+06	970.00
0+08	966.00
0+10	965.10
0+10	965.32
0+15	965.53
0+19	965.72
0+20	965.93
0+20	965.41
0+21	965.16
0+23	965.44
0+27	965.47

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+06, 970.00)	(0+10, 965.32)	0.020
(0+10, 965.32)	(0+20, 965.41)	0.013
(0+20, 965.41)	(0+27, 965.47)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

25 YEAR STORM, Sub-Area 24 - Section P

Results

Normal Depth		0.60	ft
Elevation Range	965.10 to 970.00 ft		
Flow Area		4.27	ft²
Wetted Perimeter		17.72	ft
Hydraulic Radius		0.24	ft
Top Width		17.07	ft
Normal Depth		0.60	ft
Critical Depth		0.82	ft
Critical Slope		0.00570	ft/ft
Velocity		7.25	ft/s
Velocity Head		0.82	ft
Specific Energy		1.42	ft
Froude Number		2.55	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.60	ft
Critical Depth	0.82	ft
Channel Slope	0.04400	ft/ft
Critical Slope	0.00570	ft/ft

25 YEAR STORM, Sub-Area 24 - Section P

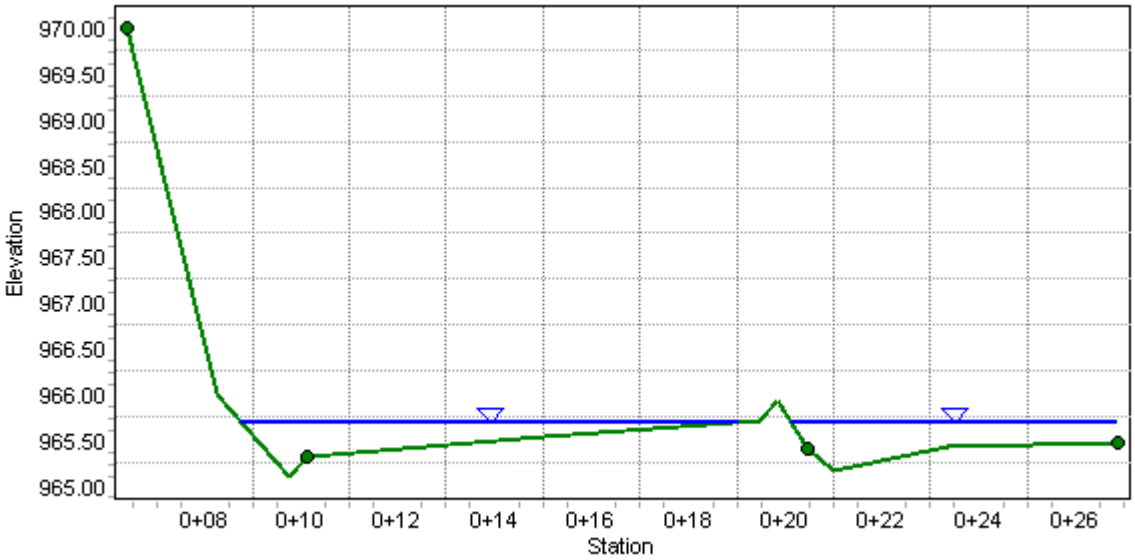
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04400	ft/ft
Normal Depth	0.60	ft
Discharge	30.94	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 25 - Section Q

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Discharge	31.30	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	962.00
0+08	960.52
0+10	960.44
0+10	960.62
0+15	960.89
0+19	960.86
0+20	961.37
0+20	960.80

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 962.00)	(0+10, 960.62)	0.020
(0+10, 960.62)	(0+20, 960.80)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.61	ft
Elevation Range	960.44 to 962.00 ft	
Flow Area	3.49	ft²
Wetted Perimeter	13.00	ft

25 YEAR STORM, Sub-Area 25 - Section Q

Results

Hydraulic Radius		0.27	ft
Top Width		12.35	ft
Normal Depth		0.61	ft
Critical Depth		0.91	ft
Critical Slope		0.00451	ft/ft
Velocity		8.97	ft/s
Velocity Head		1.25	ft
Specific Energy		1.86	ft
Froude Number		2.97	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.61	ft
Critical Depth	0.91	ft
Channel Slope	0.04700	ft/ft
Critical Slope	0.00451	ft/ft

25 YEAR STORM, Sub-Area 25 - Section Q

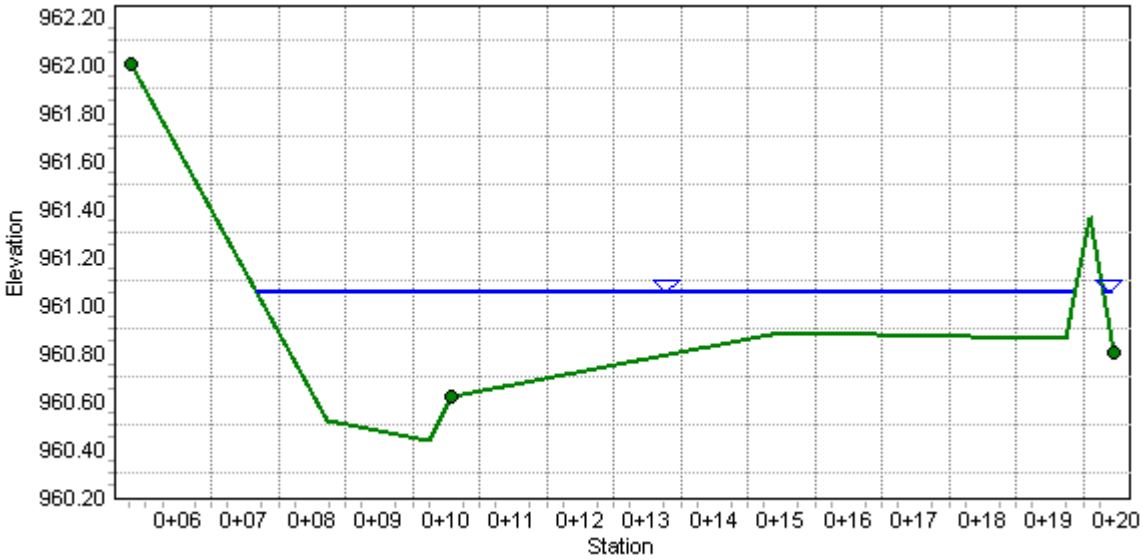
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Normal Depth	0.61	ft
Discharge	31.30	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 26 - Section R

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Discharge	31.83	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	954.85
0+07	953.08
0+09	951.55
0+10	951.49
0+10	951.60
0+15	951.76
0+20	951.70
0+21	951.46
0+22	951.45
0+23	951.81

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 954.85)	(0+10, 951.60)	0.020
(0+10, 951.60)	(0+20, 951.70)	0.013
(0+20, 951.70)	(0+23, 951.81)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.48	ft

25 YEAR STORM, Sub-Area 26 - Section R

Results

Elevation Range	951.45 to 954.85 ft		
Flow Area		3.94	ft²
Wetted Perimeter		14.97	ft
Hydraulic Radius		0.26	ft
Top Width		14.57	ft
Normal Depth		0.48	ft
Critical Depth		0.74	ft
Critical Slope		0.00474	ft/ft
Velocity		8.08	ft/s
Velocity Head		1.01	ft
Specific Energy		1.49	ft
Froude Number		2.74	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.48	ft
Critical Depth	0.74	ft
Channel Slope	0.04300	ft/ft
Critical Slope	0.00474	ft/ft

25 YEAR STORM, Sub-Area 26 - Section R

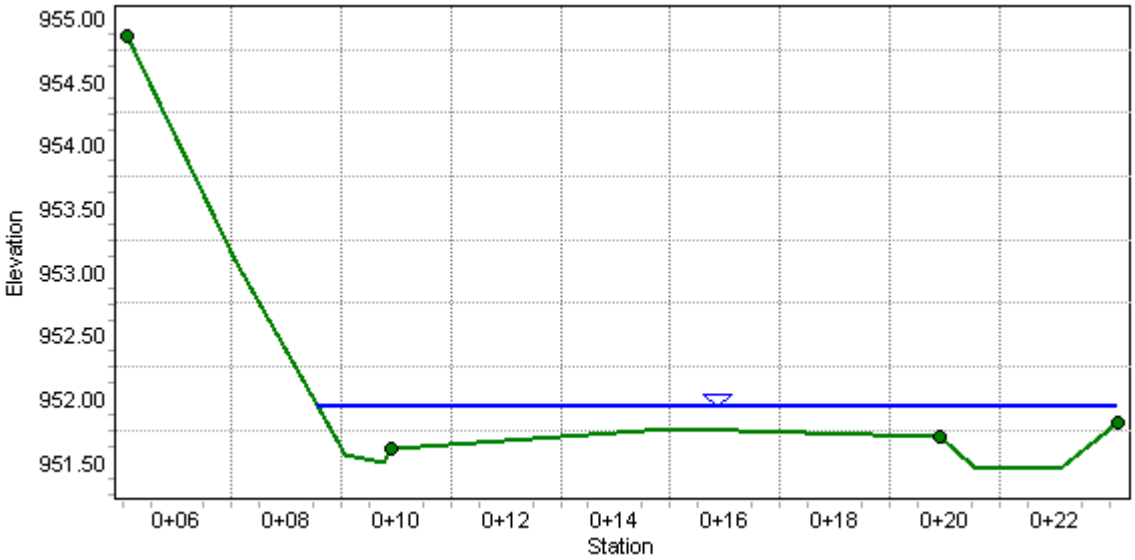
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Normal Depth	0.48	ft
Discharge	31.83	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 27 - Section S

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05800	ft/ft
Discharge	32.47	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	951.00
0+06	950.00
0+08	949.00
0+09	948.76
0+09	948.89
0+15	949.21
0+21	949.17
0+21	949.01
0+22	949.05
0+23	949.46

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 951.00)	(0+09, 948.89)	0.020
(0+09, 948.89)	(0+21, 949.17)	0.013
(0+21, 949.17)	(0+23, 949.46)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.57	ft

25 YEAR STORM, Sub-Area 27 - Section S

Results

Elevation Range	948.76 to 951.00 ft		
Flow Area		3.66	ft²
Wetted Perimeter		15.84	ft
Hydraulic Radius		0.23	ft
Top Width		15.55	ft
Normal Depth		0.57	ft
Critical Depth		0.84	ft
Critical Slope		0.00444	ft/ft
Velocity		8.87	ft/s
Velocity Head		1.22	ft
Specific Energy		1.79	ft
Froude Number		3.22	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.57	ft
Critical Depth	0.84	ft
Channel Slope	0.05800	ft/ft
Critical Slope	0.00444	ft/ft

25 YEAR STORM, Sub-Area 27 - Section S

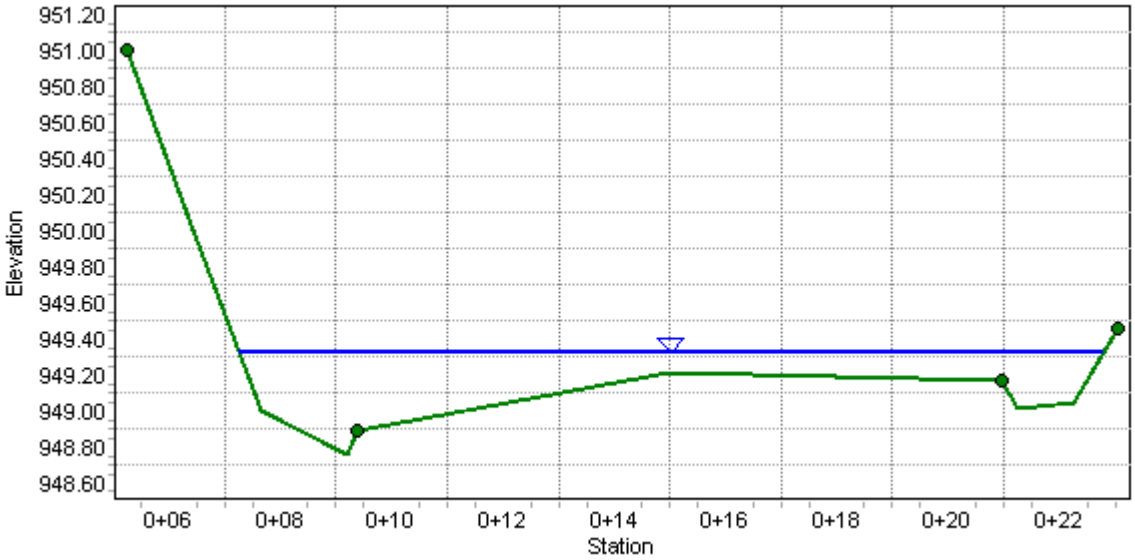
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05800	ft/ft
Normal Depth	0.57	ft
Discharge	32.47	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 28 - Section T

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Discharge	32.93	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	946.45
0+07	945.00
0+09	943.56
0+09	942.63
0+10	942.74
0+10	942.91
0+15	943.01
0+21	942.76
0+21	942.69
0+26	942.78

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 946.45)	(0+10, 942.91)	0.020
(0+10, 942.91)	(0+21, 942.76)	0.013
(0+21, 942.76)	(0+26, 942.78)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.49	ft

25 YEAR STORM, Sub-Area 28 - Section T

Results

Elevation Range	942.63 to 946.45 ft		
Flow Area		4.63	ft²
Wetted Perimeter		17.68	ft
Hydraulic Radius		0.26	ft
Top Width		16.99	ft
Normal Depth		0.49	ft
Critical Depth		0.71	ft
Critical Slope		0.00526	ft/ft
Velocity		7.12	ft/s
Velocity Head		0.79	ft
Specific Energy		1.28	ft
Froude Number		2.40	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.49	ft
Critical Depth	0.71	ft
Channel Slope	0.03600	ft/ft
Critical Slope	0.00526	ft/ft

25 YEAR STORM, Sub-Area 28 - Section T

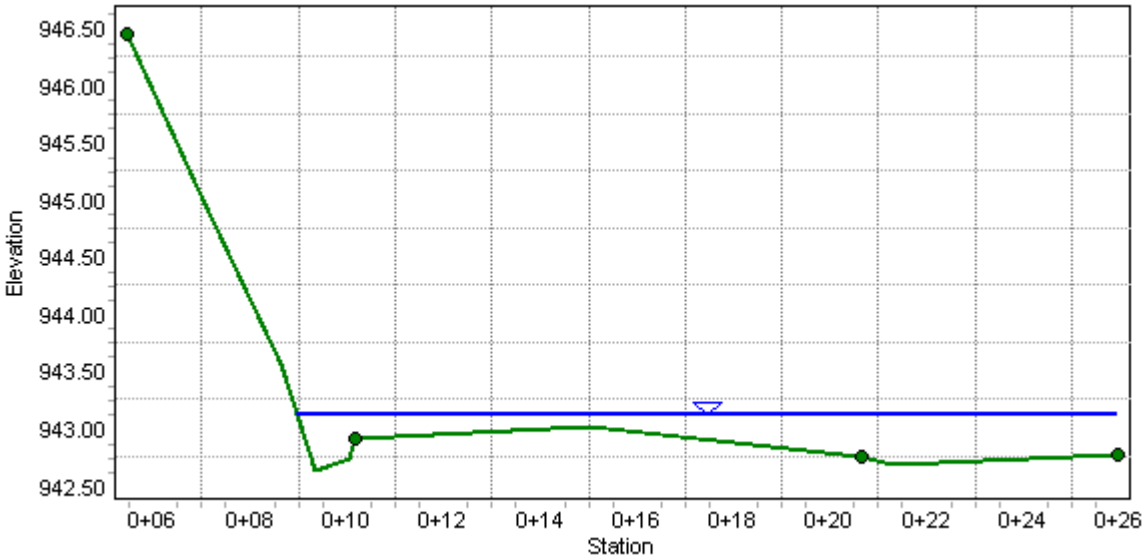
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Normal Depth	0.49	ft
Discharge	32.93	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 29 - Section U

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04500	ft/ft
Discharge	34.25	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	937.77
0+08	935.00
0+09	934.17
0+10	934.15
0+15	934.18
0+22	933.76
0+22	933.69
0+24	934.35

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 937.77)	(0+10, 934.15)	0.020
(0+10, 934.15)	(0+22, 933.76)	0.013
(0+22, 933.76)	(0+24, 934.35)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.62	ft
Elevation Range	933.69 to 937.77 ft	
Flow Area	3.90	ft²

25 YEAR STORM, Sub-Area 29 - Section U

Results

Wetted Perimeter		14.98	ft
Hydraulic Radius		0.26	ft
Top Width		14.77	ft
Normal Depth		0.62	ft
Critical Depth		0.91	ft
Critical Slope		0.00404	ft/ft
Velocity		8.77	ft/s
Velocity Head		1.20	ft
Specific Energy		1.82	ft
Froude Number		3.01	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.62	ft
Critical Depth	0.91	ft
Channel Slope	0.04500	ft/ft
Critical Slope	0.00404	ft/ft

25 YEAR STORM, Sub-Area 29 - Section U

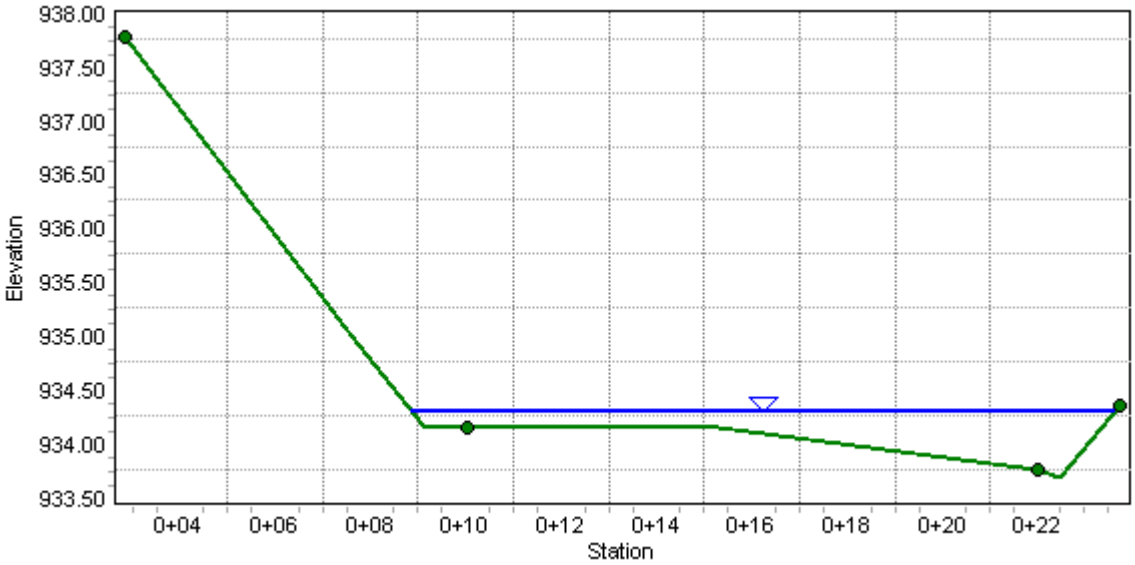
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04500	ft/ft
Normal Depth	0.62	ft
Discharge	34.25	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 30 - Section V

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Discharge	37.37	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+02	921.25
0+05	920.00
0+07	918.84
0+08	918.91
0+15	919.53
0+21	919.41
0+22	919.38
0+25	919.63

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+02, 921.25)	(0+08, 918.91)	0.020
(0+08, 918.91)	(0+21, 919.41)	0.013
(0+21, 919.41)	(0+25, 919.63)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.74	ft
Elevation Range	918.84 to 921.25 ft	
Flow Area	4.75	ft²

25 YEAR STORM, Sub-Area 30 - Section V

Results

Wetted Perimeter		19.00	ft
Hydraulic Radius		0.25	ft
Top Width		18.80	ft
Normal Depth		0.74	ft
Critical Depth		0.98	ft
Critical Slope		0.00463	ft/ft
Velocity		7.87	ft/s
Velocity Head		0.96	ft
Specific Energy		1.70	ft
Froude Number		2.76	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.74	ft
Critical Depth	0.98	ft
Channel Slope	0.04300	ft/ft
Critical Slope	0.00463	ft/ft

25 YEAR STORM, Sub-Area 30 - Section V

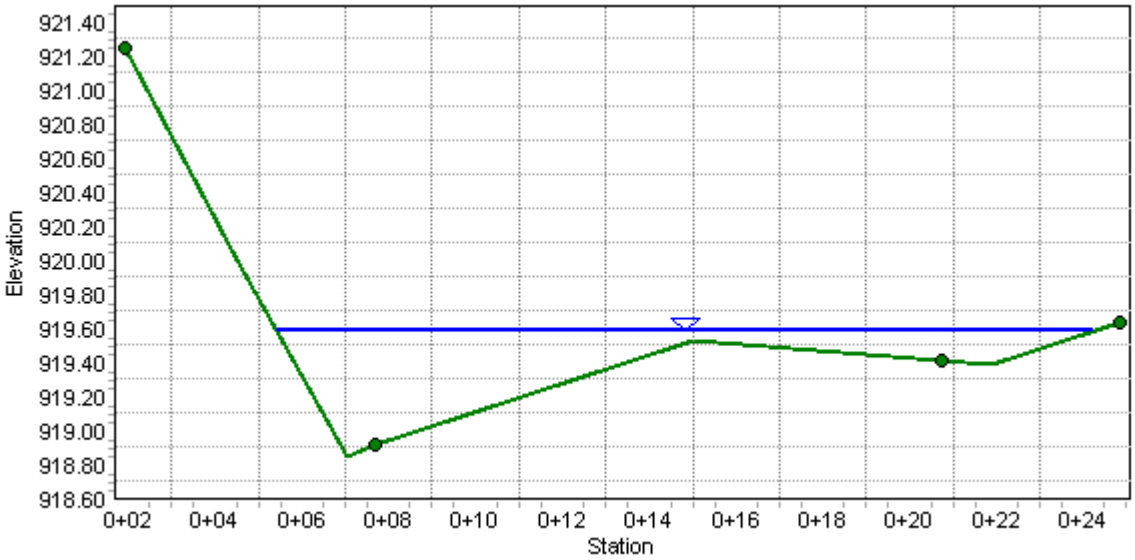
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Normal Depth	0.74	ft
Discharge	37.37	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 31 - Section W

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03800	ft/ft
Discharge	38.58	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	908.24
0+06	906.31
0+09	906.35
0+10	906.60
0+15	906.74

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 908.24)	(0+10, 906.60)	0.020
(0+10, 906.60)	(0+15, 906.74)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.67	ft
Elevation Range	906.31 to 908.24 ft	
Flow Area	4.08	ft²
Wetted Perimeter	10.33	ft
Hydraulic Radius	0.40	ft
Top Width	9.85	ft
Normal Depth	0.67	ft

25 YEAR STORM, Sub-Area 31 - Section W

Results

Critical Depth		1.04	ft
Critical Slope		0.00491	ft/ft
Velocity		9.45	ft/s
Velocity Head		1.39	ft
Specific Energy		2.06	ft
Froude Number		2.59	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.67	ft
Critical Depth	1.04	ft
Channel Slope	0.03800	ft/ft
Critical Slope	0.00491	ft/ft

25 YEAR STORM, Sub-Area 31 - Section W

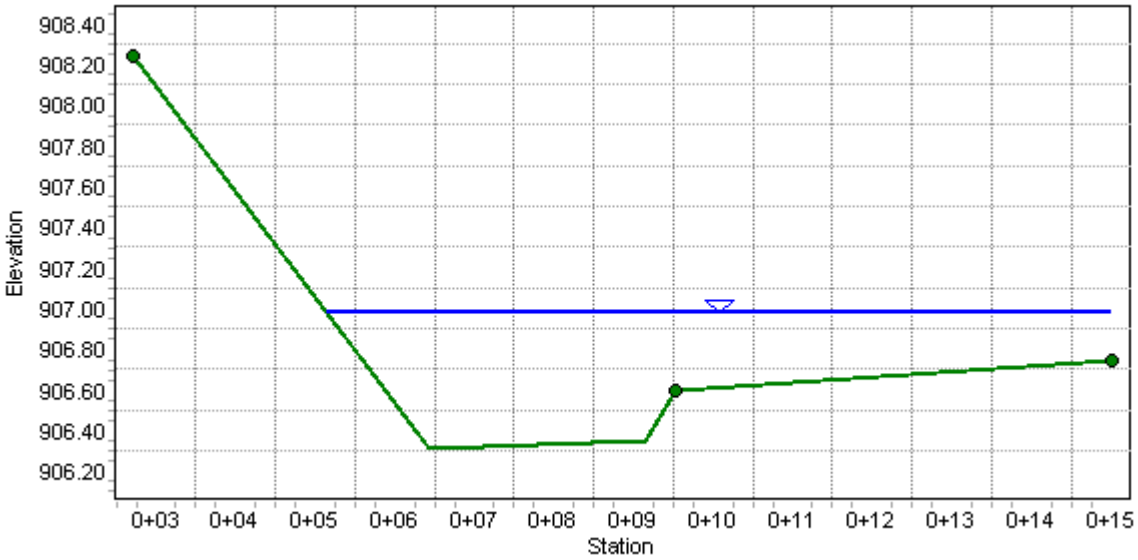
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03800	ft/ft
Normal Depth	0.67	ft
Discharge	38.58	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 32 - Section X

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02000	ft/ft
Discharge	40.12	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	906.00
0+05	905.00
0+05	904.57
0+07	904.00
0+10	903.14
0+15	903.17
0+20	903.07
0+20	903.55
0+21	903.02

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 906.00)	(0+10, 903.14)	0.020
(0+10, 903.14)	(0+21, 903.02)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.55	ft
Elevation Range	903.02 to 906.00 ft	
Flow Area	5.13	ft²

25 YEAR STORM, Sub-Area 32 - Section X

Results

Wetted Perimeter		13.86	ft
Hydraulic Radius		0.37	ft
Top Width		12.80	ft
Normal Depth		0.55	ft
Critical Depth		0.83	ft
Critical Slope		0.00366	ft/ft
Velocity		7.83	ft/s
Velocity Head		0.95	ft
Specific Energy		1.50	ft
Froude Number		2.18	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.55	ft
Critical Depth	0.83	ft
Channel Slope	0.02000	ft/ft
Critical Slope	0.00366	ft/ft

25 YEAR STORM, Sub-Area 32 - Section X

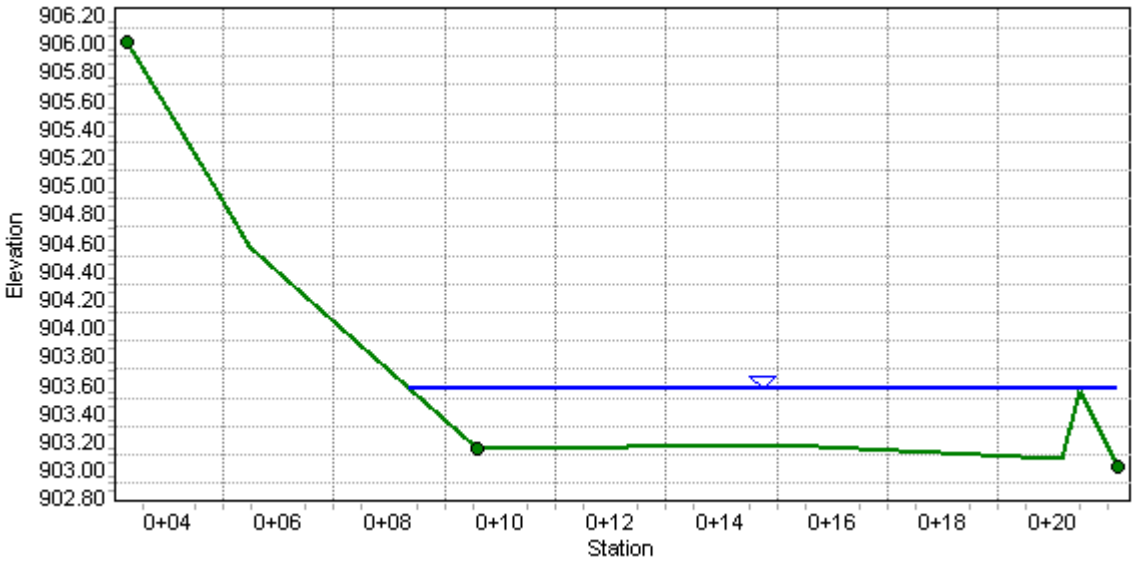
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02000	ft/ft
Normal Depth	0.55	ft
Discharge	40.12	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 33 - Section Y

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02100	ft/ft
Discharge	41.26	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+02	902.00
0+05	901.24
0+11	901.09
0+15	901.21
0+22	901.12
0+22	901.70
0+23	901.42

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+02, 902.00)	(0+11, 901.09)	0.020
(0+11, 901.09)	(0+23, 901.42)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.43	ft
Elevation Range	901.09 to 902.00 ft	
Flow Area	6.28	ft²
Wetted Perimeter	18.58	ft
Hydraulic Radius	0.34	ft

25 YEAR STORM, Sub-Area 33 - Section Y

Results

Top Width		18.18	ft
Normal Depth		0.43	ft
Critical Depth		0.63	ft
Critical Slope		0.00482	ft/ft
Velocity		6.57	ft/s
Velocity Head		0.67	ft
Specific Energy		1.10	ft
Froude Number		1.97	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.43	ft
Critical Depth	0.63	ft
Channel Slope	0.02100	ft/ft
Critical Slope	0.00482	ft/ft

25 YEAR STORM, Sub-Area 33 - Section Y

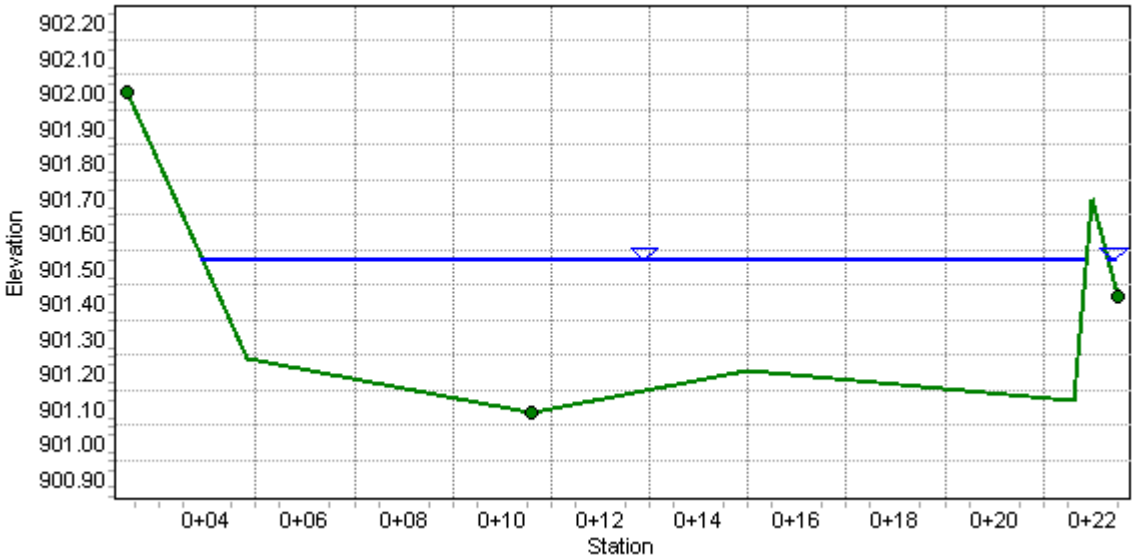
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02100	ft/ft
Normal Depth	0.43	ft
Discharge	41.26	ft³/s

Cross Section Image



25 YEAR STORM, Sub-Area 34 - Section Z

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.00900	ft/ft
Discharge	41.94	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	896.18
0+06	896.00
0+09	895.75
0+15	895.84
0+25	895.94
0+29	896.63

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 896.18)	(0+09, 895.75)	0.020
(0+09, 895.75)	(0+25, 895.94)	0.013
(0+25, 895.94)	(0+29, 896.63)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.53	ft
Elevation Range	895.75 to 896.63 ft	
Flow Area	8.91	ft²
Wetted Perimeter	23.78	ft
Hydraulic Radius	0.37	ft

25 YEAR STORM, Sub-Area 34 - Section Z

Results

Top Width		23.64	ft
Normal Depth		0.53	ft
Critical Depth		0.61	ft
Critical Slope		0.00464	ft/ft
Velocity		4.71	ft/s
Velocity Head		0.34	ft
Specific Energy		0.87	ft
Froude Number		1.35	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.53	ft
Critical Depth	0.61	ft
Channel Slope	0.00900	ft/ft
Critical Slope	0.00464	ft/ft

25 YEAR STORM, Sub-Area 34 - Section Z

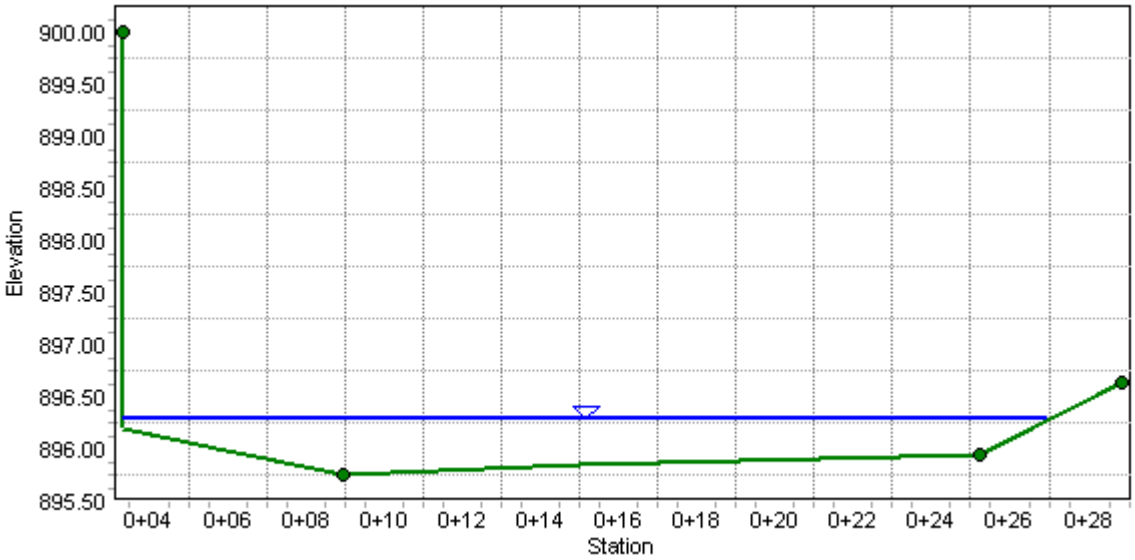
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.00900	ft/ft
Normal Depth	0.53	ft
Discharge	41.94	ft³/s

Cross Section Image



10 YEAR STORM, Section AA

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Discharge	29.97	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+01	978.00
0+03	977.00
0+07	976.09
0+09	976.00
0+09	975.98
0+11	976.00
0+15	976.08
0+18	976.00
0+20	975.88
0+20	976.36

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+01, 978.00)	(0+09, 975.98)	0.020
(0+09, 975.98)	(0+20, 976.36)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.42	ft
Elevation Range	975.88 to 978.00 ft	

10 YEAR STORM, Section AA

Results

Flow Area	3.81	ft²
Wetted Perimeter	14.47	ft
Hydraulic Radius	0.26	ft
Top Width	14.26	ft
Normal Depth	0.42	ft
Critical Depth	0.67	ft
Critical Slope	0.00416	ft/ft
Velocity	7.87	ft/s
Velocity Head	0.96	ft
Specific Energy	1.38	ft
Froude Number	2.69	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.42	ft
Critical Depth	0.67	ft
Channel Slope	0.03600	ft/ft
Critical Slope	0.00416	ft/ft

25 YEAR STORM, Section AA

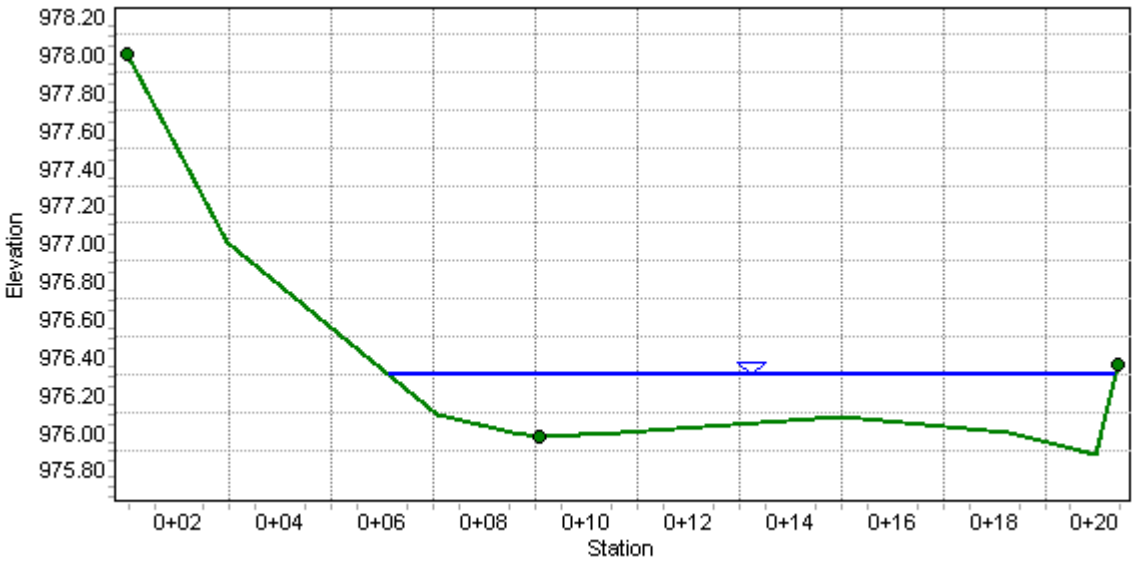
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Normal Depth	0.42	ft
Discharge	29.97	ft³/s

Cross Section Image



25 YEAR STORM, Section BB

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Discharge	29.97	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+08	977.00
0+08	976.00
0+09	975.00
0+09	974.00
0+10	973.84
0+10	974.08
0+15	974.35
0+20	974.44
0+21	974.21
0+23	974.45
0+26	974.63

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+08, 977.00)	(0+10, 974.08)	0.020
(0+10, 974.08)	(0+20, 974.44)	0.013
(0+20, 974.44)	(0+26, 974.63)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

25 YEAR STORM, Section BB

Results

Normal Depth		0.74	ft
Elevation Range	973.84 to 977.00 ft		
Flow Area		4.31	ft²
Wetted Perimeter		17.05	ft
Hydraulic Radius		0.25	ft
Top Width		16.45	ft
Normal Depth		0.74	ft
Critical Depth		0.95	ft
Critical Slope		0.00533	ft/ft
Velocity		6.96	ft/s
Velocity Head		0.75	ft
Specific Energy		1.49	ft
Froude Number		2.40	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.74	ft
Critical Depth	0.95	ft
Channel Slope	0.03600	ft/ft
Critical Slope	0.00533	ft/ft

25 YEAR STORM, Section BB

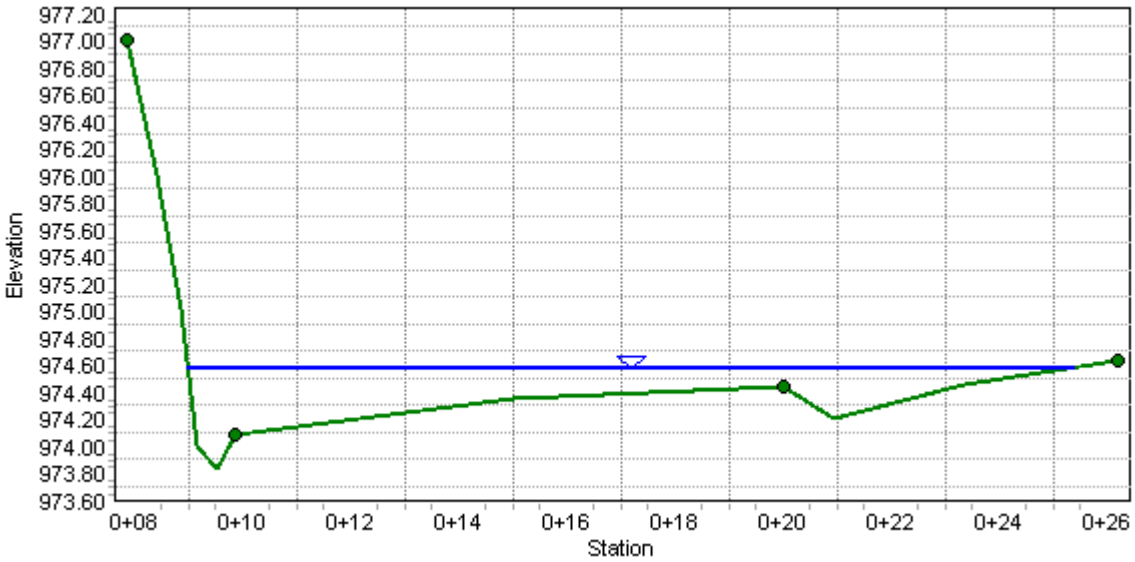
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Normal Depth	0.74	ft
Discharge	29.97	ft³/s

Cross Section Image



25 YEAR STORM, Section CC

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Discharge	31.30	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	964.50
0+08	959.62
0+10	958.34
0+11	958.24
0+11	958.42
0+15	958.54
0+20	958.41
0+20	958.23

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 964.50)	(0+11, 958.42)	0.020
(0+11, 958.42)	(0+20, 958.41)	0.013
(0+20, 958.41)	(0+20, 958.23)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.53	ft
Elevation Range	958.23 to 964.50 ft	
Flow Area	3.38	ft²

25 YEAR STORM, Section CC

Results

Wetted Perimeter		11.80	ft
Hydraulic Radius		0.29	ft
Top Width		11.06	ft
Normal Depth		0.53	ft
Critical Depth		0.86	ft
Critical Slope		0.00448	ft/ft
Velocity		9.25	ft/s
Velocity Head		1.33	ft
Specific Energy		1.86	ft
Froude Number		2.95	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.53	ft
Critical Depth	0.86	ft
Channel Slope	0.04700	ft/ft
Critical Slope	0.00448	ft/ft

25 YEAR STORM, Section CC

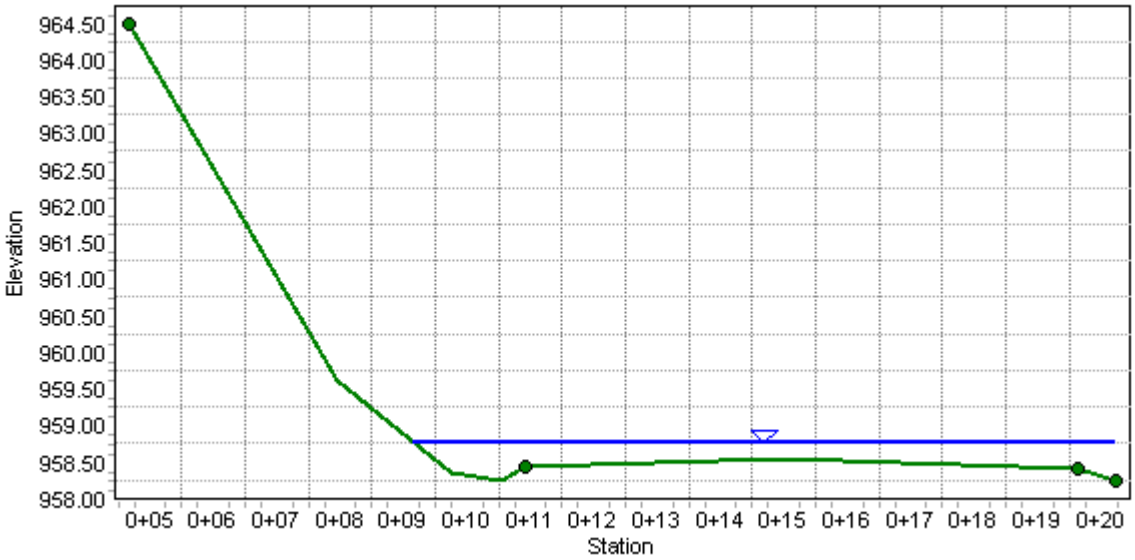
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Normal Depth	0.53	ft
Discharge	31.30	ft³/s

Cross Section Image



25 YEAR STORM, Section DD

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Discharge	31.30	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	962.83
0+07	957.90
0+09	957.22
0+10	957.30
0+15	957.41
0+20	957.24
0+21	957.05
0+23	957.40

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 962.83)	(0+10, 957.30)	0.020
(0+10, 957.30)	(0+20, 957.24)	0.013
(0+20, 957.24)	(0+23, 957.40)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.52	ft
Elevation Range	957.05 to 962.83 ft	
Flow Area	3.87	ft²

25 YEAR STORM, Section DD

Results

Wetted Perimeter		15.46	ft
Hydraulic Radius		0.25	ft
Top Width		15.19	ft
Normal Depth		0.52	ft
Critical Depth		0.78	ft
Critical Slope		0.00484	ft/ft
Velocity		8.09	ft/s
Velocity Head		1.02	ft
Specific Energy		1.54	ft
Froude Number		2.83	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.52	ft
Critical Depth	0.78	ft
Channel Slope	0.04700	ft/ft
Critical Slope	0.00484	ft/ft

25 YEAR STORM, Section DD

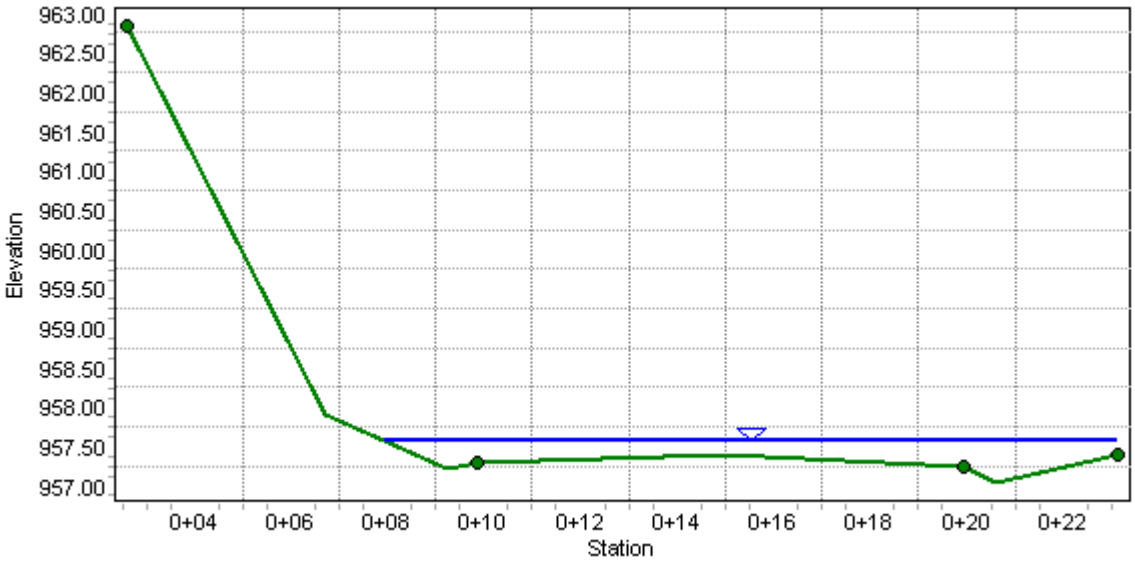
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Normal Depth	0.52	ft
Discharge	31.30	ft³/s

Cross Section Image



25 YEAR STORM, Section EE

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Discharge	31.30	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	962.83
0+07	957.90
0+09	957.22
0+10	957.30
0+15	957.41
0+20	957.24
0+21	957.05
0+23	957.40

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 962.83)	(0+10, 957.30)	0.020
(0+10, 957.30)	(0+20, 957.24)	0.013
(0+20, 957.24)	(0+23, 957.40)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.52	ft
Elevation Range	957.05 to 962.83 ft	
Flow Area	3.87	ft²

25 YEAR STORM, Section EE

Results

Wetted Perimeter		15.46	ft
Hydraulic Radius		0.25	ft
Top Width		15.19	ft
Normal Depth		0.52	ft
Critical Depth		0.78	ft
Critical Slope		0.00484	ft/ft
Velocity		8.09	ft/s
Velocity Head		1.02	ft
Specific Energy		1.54	ft
Froude Number		2.83	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.52	ft
Critical Depth	0.78	ft
Channel Slope	0.04700	ft/ft
Critical Slope	0.00484	ft/ft

25 YEAR STORM, Section EE

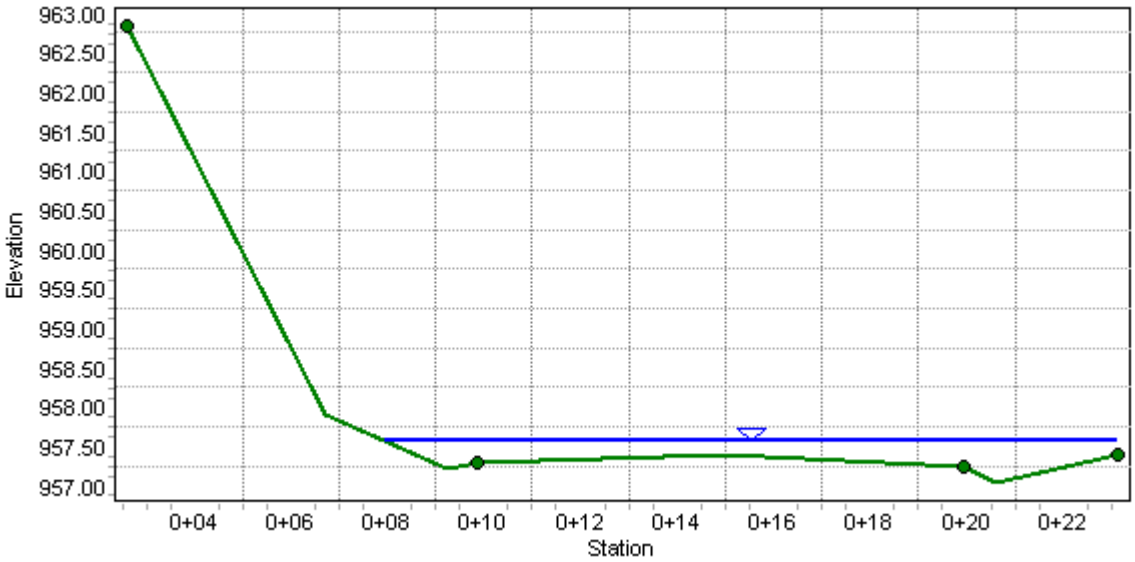
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Normal Depth	0.52	ft
Discharge	31.30	ft³/s

Cross Section Image



APPENDIX G

50-Year Storm Uproad Hydraulic Analysis – FlowMaster Output

50 YEAR STORM, Sub-Area 3 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	2.22	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.17	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	0.57	ft²
Wetted Perimeter	7.23	ft
Hydraulic Radius	0.08	ft

50 YEAR STORM, Sub-Area 3 - Section A

Results

Top Width		7.20	ft
Normal Depth		0.17	ft
Critical Depth		0.24	ft
Critical Slope		0.00509	ft/ft
Velocity		3.92	ft/s
Velocity Head		0.24	ft
Specific Energy		0.41	ft
Froude Number		2.46	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.17	ft
Critical Depth	0.24	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00509	ft/ft

50 YEAR STORM, Sub-Area 3 - Section A

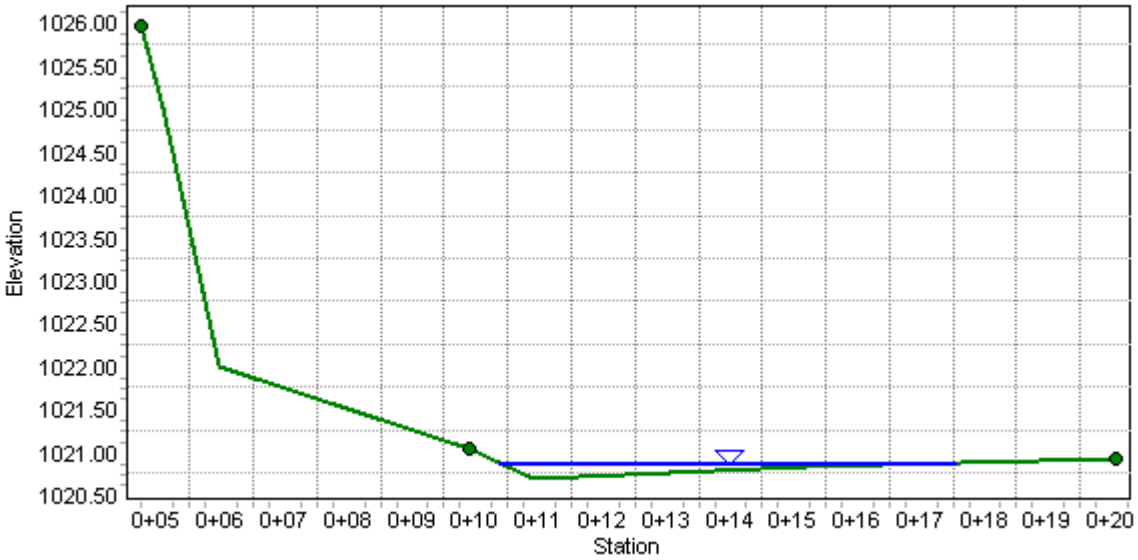
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.17	ft
Discharge	2.22	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 4 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	3.75	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.21	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	0.86	ft²
Wetted Perimeter	9.26	ft
Hydraulic Radius	0.09	ft

50 YEAR STORM, Sub-Area 4 - Section A

Results

Top Width		9.22	ft
Normal Depth		0.21	ft
Critical Depth		0.29	ft
Critical Slope		0.00457	ft/ft
Velocity		4.37	ft/s
Velocity Head		0.30	ft
Specific Energy		0.51	ft
Froude Number		2.52	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.21	ft
Critical Depth	0.29	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00457	ft/ft

50 YEAR STORM, Sub-Area 4 - Section A

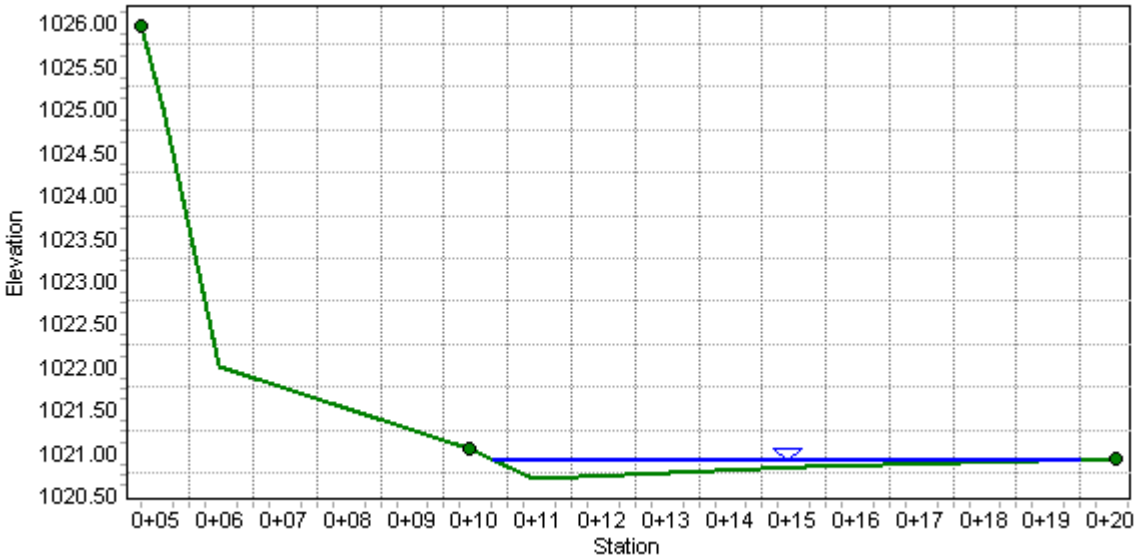
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.21	ft
Discharge	3.75	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 5 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	5.46	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.24	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	1.10	ft²
Wetted Perimeter	9.89	ft
Hydraulic Radius	0.11	ft

50 YEAR STORM, Sub-Area 5 - Section A

Results

Top Width		9.83	ft
Normal Depth		0.24	ft
Critical Depth		0.34	ft
Critical Slope		0.00425	ft/ft
Velocity		4.95	ft/s
Velocity Head		0.38	ft
Specific Energy		0.62	ft
Froude Number		2.61	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.24	ft
Critical Depth	0.34	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00425	ft/ft

50 YEAR STORM, Sub-Area 5 - Section A

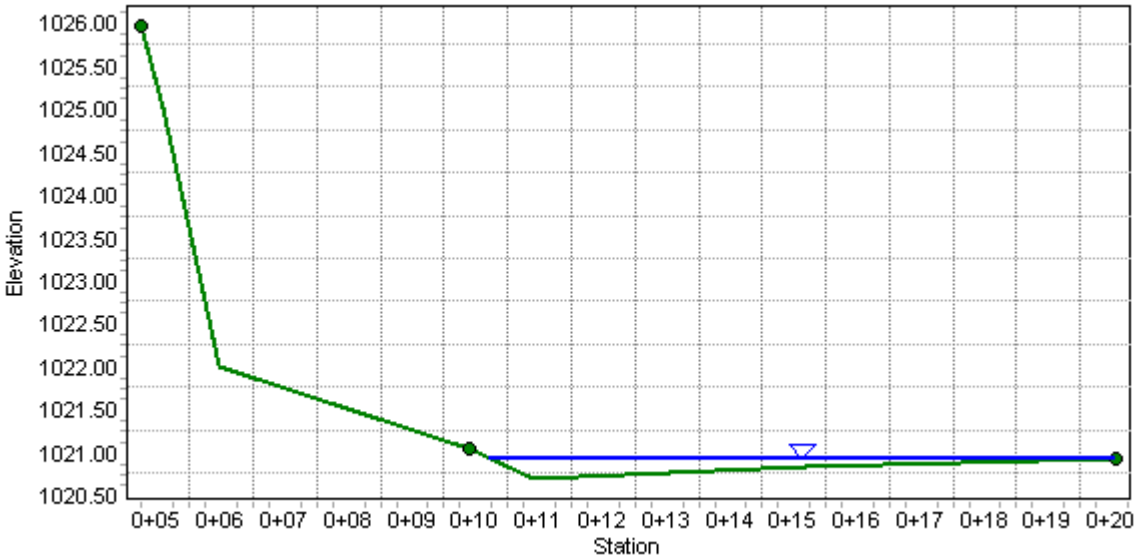
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.24	ft
Discharge	5.46	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 6 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	7.34	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.26	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	1.32	ft²
Wetted Perimeter	9.98	ft
Hydraulic Radius	0.13	ft

50 YEAR STORM, Sub-Area 6 - Section A

Results

Top Width		9.90	ft
Normal Depth		0.26	ft
Critical Depth		0.38	ft
Critical Slope		0.00402	ft/ft
Velocity		5.55	ft/s
Velocity Head		0.48	ft
Specific Energy		0.74	ft
Froude Number		2.68	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.26	ft
Critical Depth	0.38	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00402	ft/ft

50 YEAR STORM, Sub-Area 6 - Section A

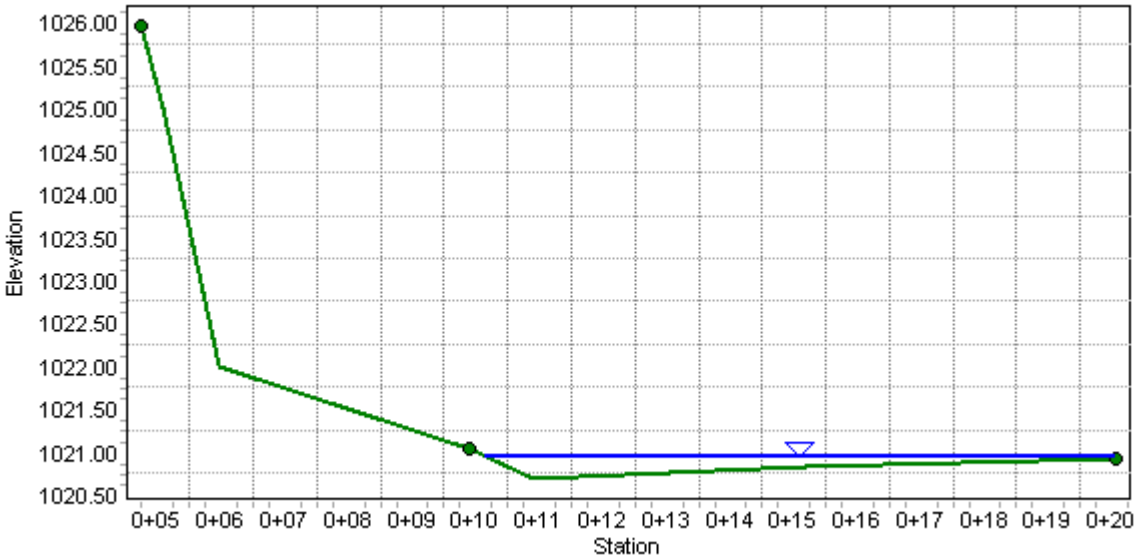
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.26	ft
Discharge	7.34	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 7 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	10.72	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.29	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	1.67	ft²
Wetted Perimeter	10.12	ft
Hydraulic Radius	0.16	ft

50 YEAR STORM, Sub-Area 7 - Section A

Results

Top Width		10.00	ft
Normal Depth		0.29	ft
Critical Depth		0.46	ft
Critical Slope		0.00376	ft/ft
Velocity		6.43	ft/s
Velocity Head		0.64	ft
Specific Energy		0.93	ft
Froude Number		2.77	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.29	ft
Critical Depth	0.46	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00376	ft/ft

Cross Section for Sub-Area 7 - Section A

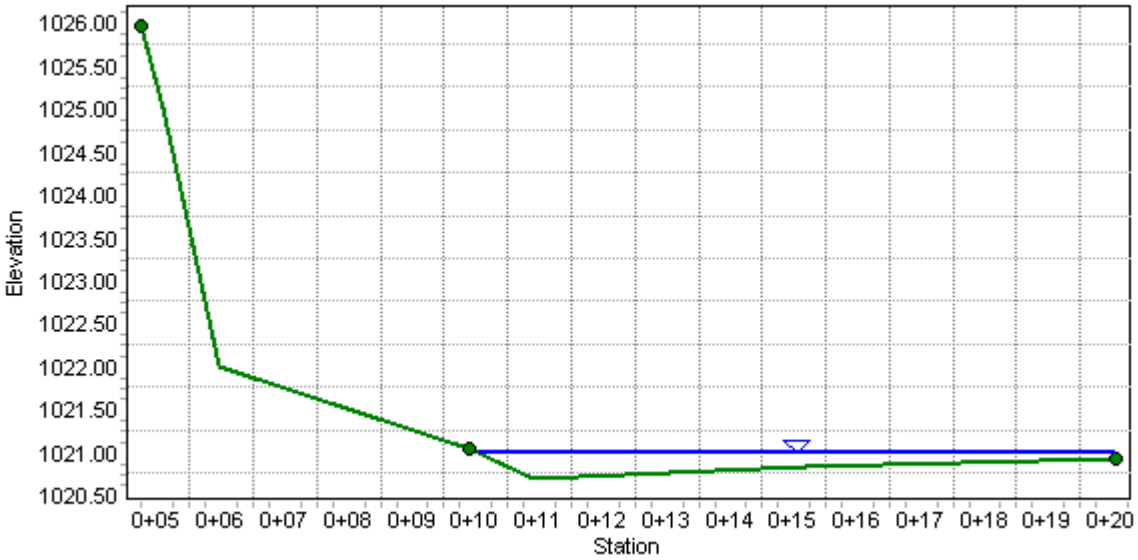
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.29	ft
Discharge	10.72	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 8 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	12.76	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.31	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	1.86	ft²
Wetted Perimeter	10.20	ft
Hydraulic Radius	0.18	ft

50 YEAR STORM, Sub-Area 8 - Section A

Results

Top Width		10.06	ft
Normal Depth		0.31	ft
Critical Depth		0.50	ft
Critical Slope		0.00364	ft/ft
Velocity		6.87	ft/s
Velocity Head		0.73	ft
Specific Energy		1.04	ft
Froude Number		2.82	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.31	ft
Critical Depth	0.50	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00364	ft/ft

50 YEAR STORM, Sub-Area 8 - Section A

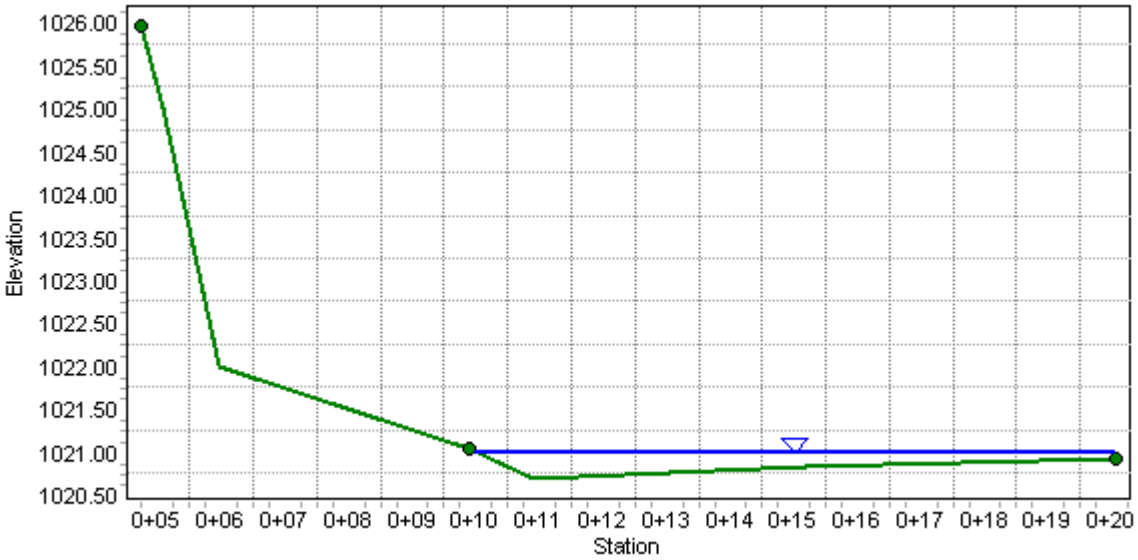
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.31	ft
Discharge	12.76	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 9 - Section A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03400	ft/ft
Discharge	13.76	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	1025.96
0+05	1025.00
0+06	1022.00
0+10	1021.03
0+11	1020.69
0+15	1020.82
0+20	1020.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 1025.96)	(0+10, 1021.03)	0.020
(0+10, 1021.03)	(0+20, 1020.91)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.32	ft
Elevation Range	1020.69 to 1025.96 ft	
Flow Area	1.96	ft²
Wetted Perimeter	10.24	ft
Hydraulic Radius	0.19	ft

50 YEAR STORM, Sub-Area 9 - Section A

Results

Top Width		10.09	ft
Normal Depth		0.32	ft
Critical Depth		0.52	ft
Critical Slope		0.00360	ft/ft
Velocity		7.01	ft/s
Velocity Head		0.76	ft
Specific Energy		1.08	ft
Froude Number		2.80	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.32	ft
Critical Depth	0.52	ft
Channel Slope	0.03400	ft/ft
Critical Slope	0.00360	ft/ft

50 YEAR STORM, Sub-Area 9 - Section A

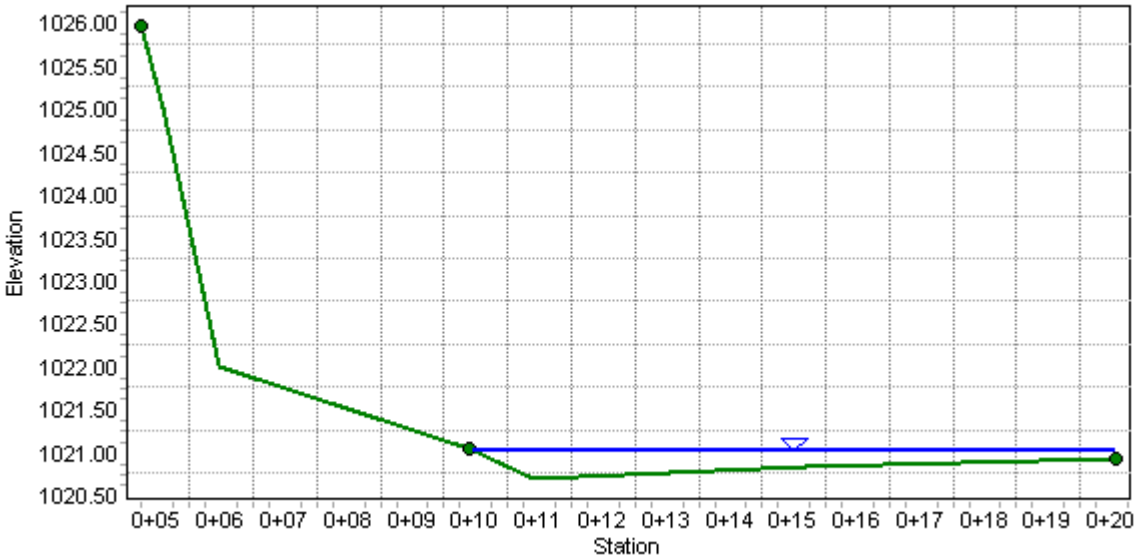
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03400	ft/ft
Normal Depth	0.32	ft
Discharge	13.76	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 10 - Section B

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03200	ft/ft
Discharge	15.49	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1024.46
0+06	1019.51
0+09	1019.00
0+10	1018.92
0+11	1018.81
0+15	1018.77
0+18	1019.00
0+19	1019.06
0+20	1019.06

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1024.46)	(0+10, 1018.92)	0.020
(0+10, 1018.92)	(0+20, 1019.06)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.33	ft
Elevation Range	1018.77 to 1024.46 ft	
Flow Area	2.34	ft²

50 YEAR STORM, Sub-Area 10 - Section B

Results

Wetted Perimeter		11.14	ft
Hydraulic Radius		0.21	ft
Top Width		11.07	ft
Normal Depth		0.33	ft
Critical Depth		0.52	ft
Critical Slope		0.00419	ft/ft
Velocity		6.63	ft/s
Velocity Head		0.68	ft
Specific Energy		1.01	ft
Froude Number		2.55	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.33	ft
Critical Depth	0.52	ft
Channel Slope	0.03200	ft/ft
Critical Slope	0.00419	ft/ft

50 YEAR STORM, Sub-Area 10 - Section B

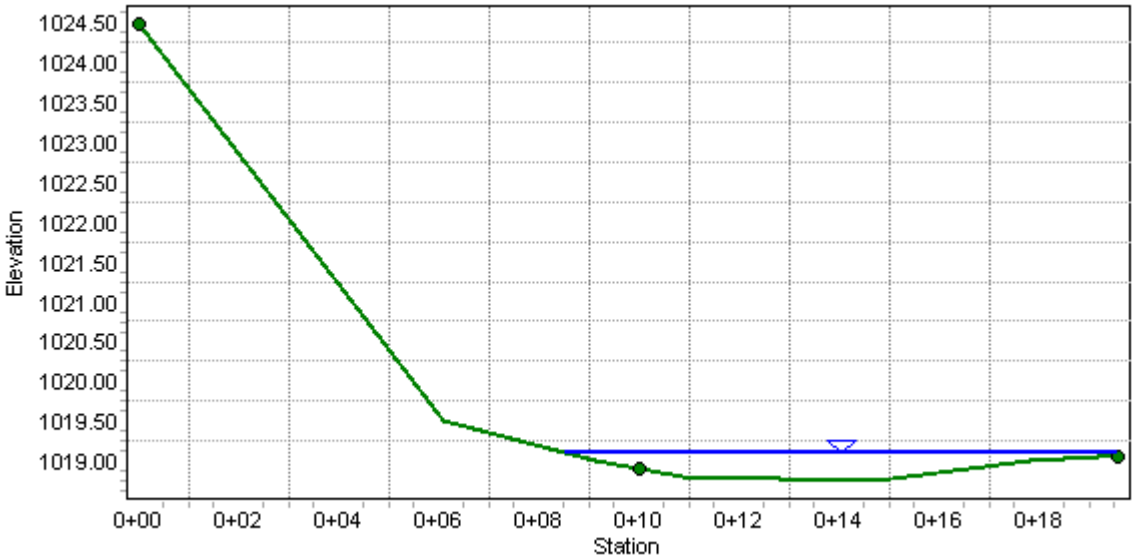
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03200	ft/ft
Normal Depth	0.33	ft
Discharge	15.49	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 11 - Section C

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04400	ft/ft
Discharge	18.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	1016.00
0+04	1015.00
0+06	1014.00
0+07	1013.00
0+09	1011.90
0+10	1012.29
0+15	1012.53
0+20	1012.58
0+20	1012.38
0+21	1012.26
0+25	1013.00
0+26	1013.28

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 1016.00)	(0+10, 1012.29)	0.020
(0+10, 1012.29)	(0+20, 1012.58)	0.013
(0+20, 1012.58)	(0+26, 1013.28)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

50 YEAR STORM, Sub-Area 11 - Section C

Results

Normal Depth		0.72	ft
Elevation Range	1011.90 to 1016.00 ft		
Flow Area		2.85	ft²
Wetted Perimeter		15.72	ft
Hydraulic Radius		0.18	ft
Top Width		15.30	ft
Normal Depth		0.72	ft
Critical Depth		0.89	ft
Critical Slope		0.00545	ft/ft
Velocity		6.32	ft/s
Velocity Head		0.62	ft
Specific Energy		1.34	ft
Froude Number		2.58	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.72	ft
Critical Depth	0.89	ft
Channel Slope	0.04400	ft/ft
Critical Slope	0.00545	ft/ft

50 YEAR STORM, Sub-Area 11 - Section C

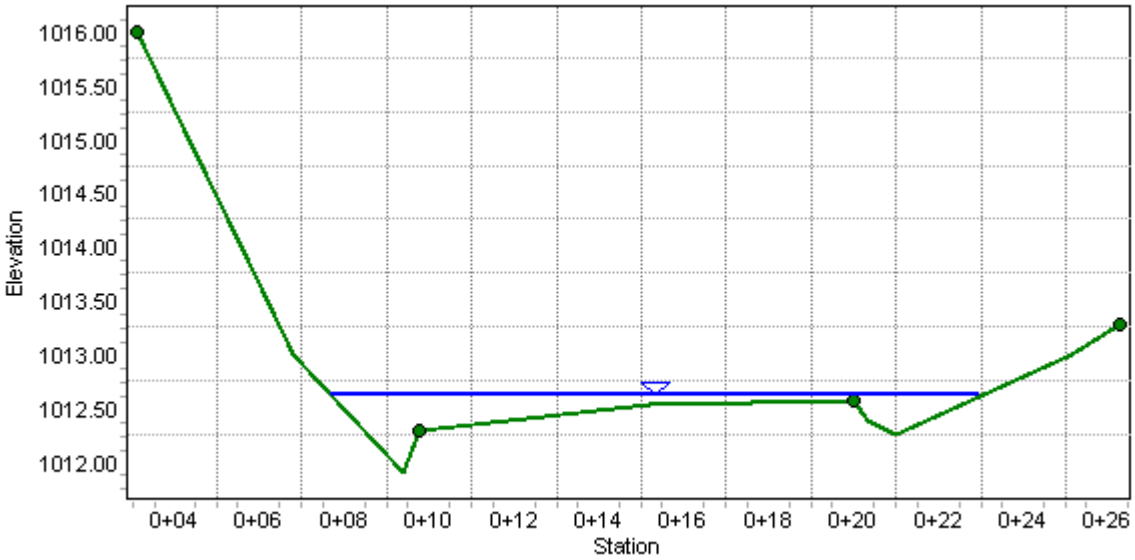
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04400	ft/ft
Normal Depth	0.72	ft
Discharge	18.00	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 12 - Section D

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03200	ft/ft
Discharge	19.04	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	1009.85
0+09	1009.52
0+10	1009.60
0+15	1009.52
0+22	1009.20
0+22	1009.62

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 1009.85)	(0+10, 1009.60)	0.020
(0+10, 1009.60)	(0+22, 1009.62)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.48	ft
Elevation Range	1009.20 to 1009.85 ft	
Flow Area	3.21	ft²
Wetted Perimeter	16.23	ft
Hydraulic Radius	0.20	ft
Top Width	15.99	ft

50 YEAR STORM, Sub-Area 12 - Section D

Results

Normal Depth	0.48	ft
Critical Depth	0.64	ft
Critical Slope	0.00507	ft/ft
Velocity	5.94	ft/s
Velocity Head	0.55	ft
Specific Energy	1.03	ft
Froude Number	2.34	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.48	ft
Critical Depth	0.64	ft
Channel Slope	0.03200	ft/ft
Critical Slope	0.00507	ft/ft

50 YEAR STORM, Sub-Area 12 - Section D

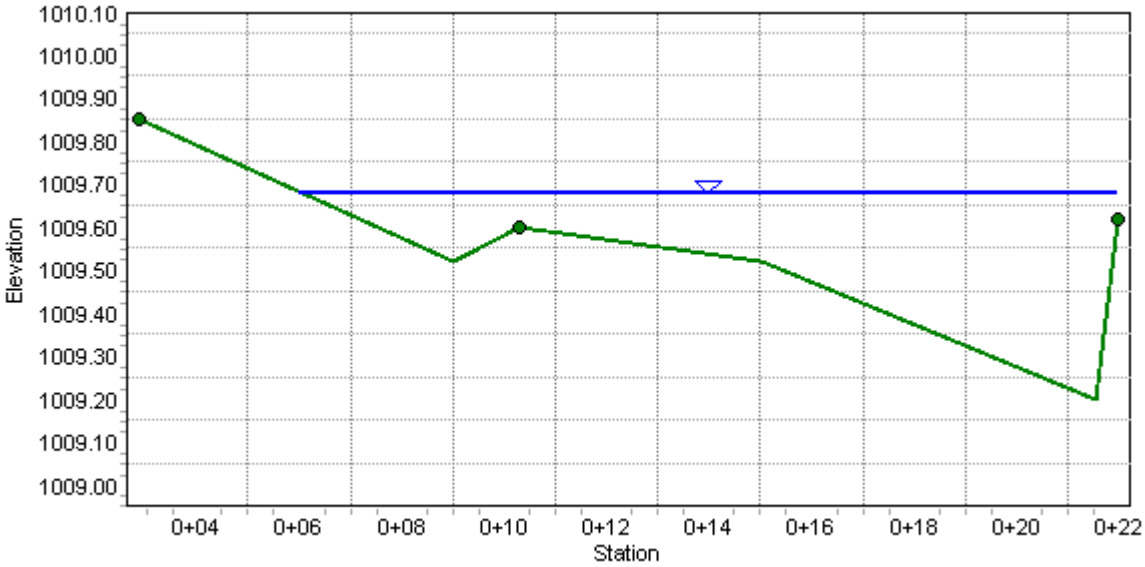
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03200	ft/ft
Normal Depth	0.48	ft
Discharge	19.04	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 13 - Section E

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03800	ft/ft
Discharge	27.06	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+06	1012.00
0+09	1006.00
0+10	1005.46
0+11	1005.47
0+15	1005.66
0+20	1005.85
0+20	1005.93

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+06, 1012.00)	(0+11, 1005.47)	0.020
(0+11, 1005.47)	(0+20, 1005.93)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.48	ft
Elevation Range	1005.46 to 1012.00 ft	
Flow Area	3.18	ft²
Wetted Perimeter	11.39	ft
Hydraulic Radius	0.28	ft

50 YEAR STORM, Sub-Area 13 - Section E

Results

Top Width		11.08	ft
Normal Depth		0.48	ft
Critical Depth		0.76	ft
Critical Slope		0.00407	ft/ft
Velocity		8.51	ft/s
Velocity Head		1.13	ft
Specific Energy		1.60	ft
Froude Number		2.80	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.48	ft
Critical Depth	0.76	ft
Channel Slope	0.03800	ft/ft
Critical Slope	0.00407	ft/ft

50 YEAR STORM, Sub-Area 13 - Section E

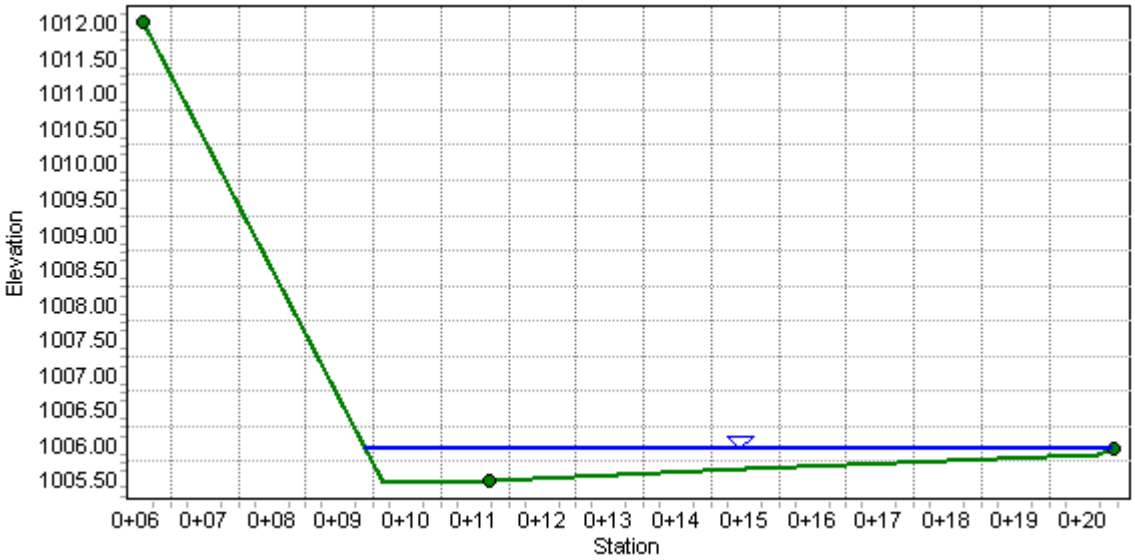
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03800	ft/ft
Normal Depth	0.48	ft
Discharge	27.06	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 14 - Section F

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.06300	ft/ft
Discharge	27.70	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+07	1007.00
0+07	1006.00
0+08	1005.00
0+09	1004.00
0+11	1003.89
0+11	1003.99
0+15	1004.07
0+20	1004.06
0+21	1004.22

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+07, 1007.00)	(0+11, 1003.99)	0.020
(0+11, 1003.99)	(0+21, 1004.22)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.39	ft
Elevation Range	1003.89 to 1007.00 ft	
Flow Area	2.88	ft²

50 YEAR STORM, Sub-Area 14 - Section F

Results

Wetted Perimeter		12.82	ft
Hydraulic Radius		0.22	ft
Top Width		12.62	ft
Normal Depth		0.39	ft
Critical Depth		0.69	ft
Critical Slope		0.00399	ft/ft
Velocity		9.60	ft/s
Velocity Head		1.43	ft
Specific Energy		1.82	ft
Froude Number		3.54	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.39	ft
Critical Depth	0.69	ft
Channel Slope	0.06300	ft/ft
Critical Slope	0.00399	ft/ft

50 YEAR STORM, Sub-Area 14 - Section F

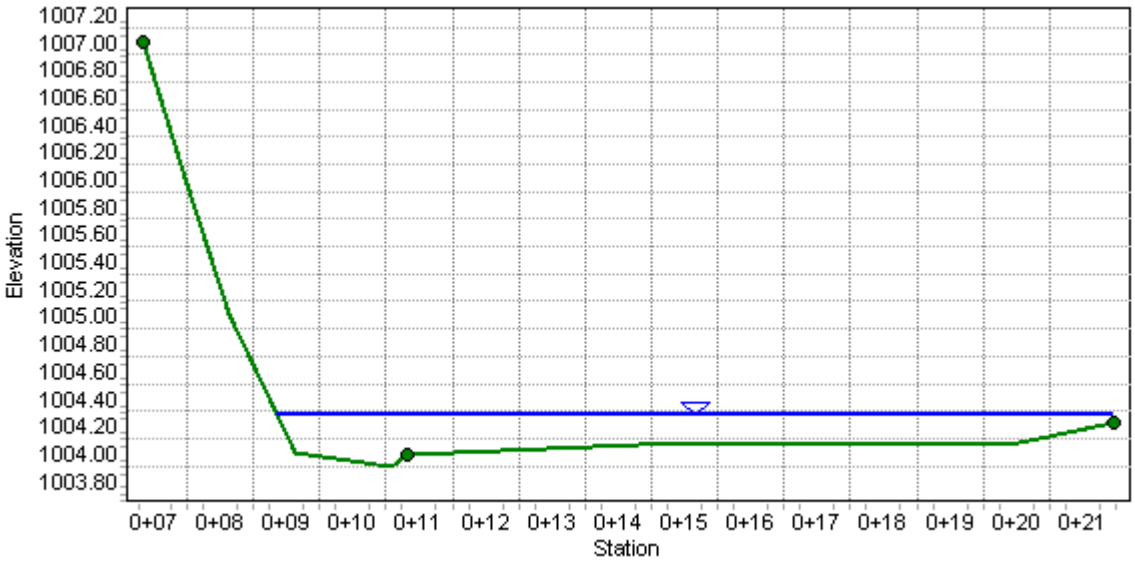
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.06300	ft/ft
Normal Depth	0.39	ft
Discharge	27.70	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 15 - Section G

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Discharge	28.85	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	1006.00
0+06	1002.00
0+06	1001.60
0+10	1001.27
0+10	1001.40
0+15	1001.63
0+20	1001.72
0+21	1001.46
0+23	1001.78

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 1006.00)	(0+10, 1001.40)	0.020
(0+10, 1001.40)	(0+20, 1001.72)	0.013
(0+20, 1001.72)	(0+23, 1001.78)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.52	ft
Elevation Range	1001.27 to 1006.00 ft	

50 YEAR STORM, Sub-Area 15 - Section G

Results

Flow Area		4.09	ft²
Wetted Perimeter		17.56	ft
Hydraulic Radius		0.23	ft
Top Width		17.34	ft
Normal Depth		0.52	ft
Critical Depth		0.73	ft
Critical Slope		0.00547	ft/ft
Velocity		7.05	ft/s
Velocity Head		0.77	ft
Specific Energy		1.30	ft
Froude Number		2.56	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.52	ft
Critical Depth	0.73	ft
Channel Slope	0.04300	ft/ft
Critical Slope	0.00547	ft/ft

50 YEAR STORM, Sub-Area 15 - Section G

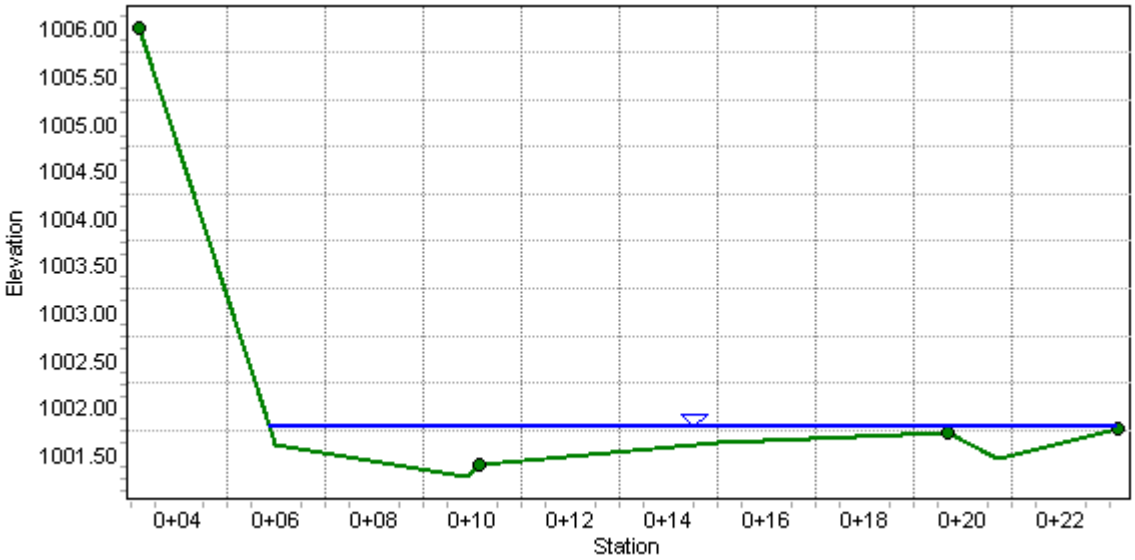
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Normal Depth	0.52	ft
Discharge	28.85	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 16 - Section H

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03700	ft/ft
Discharge	30.77	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	1003.00
0+04	1002.00
0+07	1000.00
0+08	998.66
0+10	998.66
0+11	998.75
0+15	998.89
0+20	998.91
0+21	998.71
0+23	999.00
0+26	999.28

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 1003.00)	(0+11, 998.75)	0.020
(0+11, 998.75)	(0+20, 998.91)	0.013
(0+20, 998.91)	(0+26, 999.28)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

50 YEAR STORM, Sub-Area 16 - Section H

Results

Normal Depth		0.45	ft
Elevation Range	998.66 to 1003.00 ft		
Flow Area		4.35	ft²
Wetted Perimeter		16.76	ft
Hydraulic Radius		0.26	ft
Top Width		16.53	ft
Normal Depth		0.45	ft
Critical Depth		0.67	ft
Critical Slope		0.00530	ft/ft
Velocity		7.07	ft/s
Velocity Head		0.78	ft
Specific Energy		1.23	ft
Froude Number		2.43	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.45	ft
Critical Depth	0.67	ft
Channel Slope	0.03700	ft/ft
Critical Slope	0.00530	ft/ft

50 YEAR STORM, Sub-Area 16 - Section H

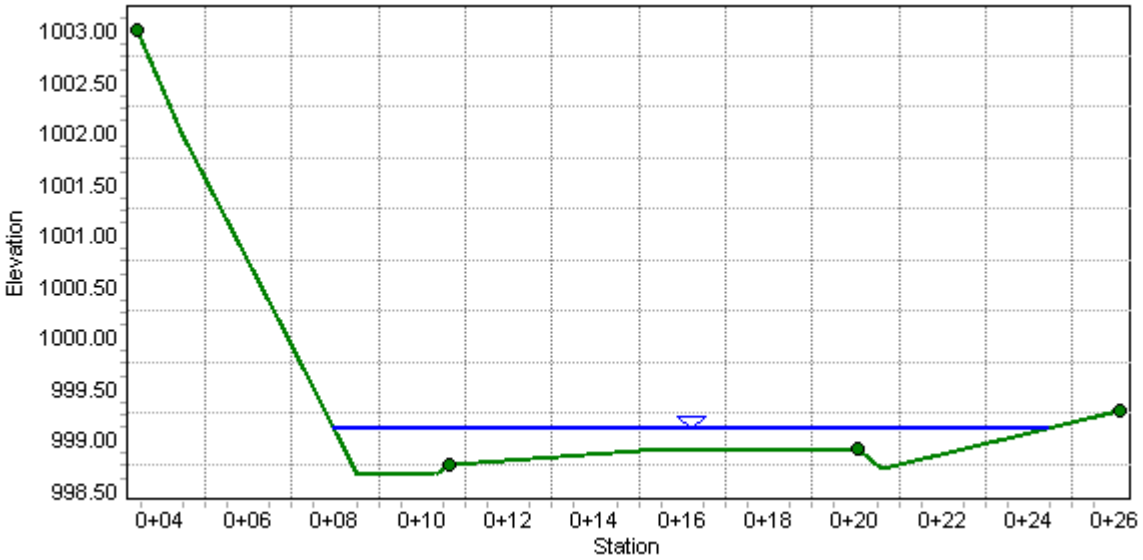
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03700	ft/ft
Normal Depth	0.45	ft
Discharge	30.77	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 17 - Section I

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02700	ft/ft
Discharge	31.29	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+02	1000.00
0+03	999.00
0+03	998.00
0+09	996.64
0+10	996.92
0+15	997.04
0+20	996.91
0+21	996.68
0+23	996.31
0+25	997.00
0+26	997.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+02, 1000.00)	(0+10, 996.92)	0.020
(0+10, 996.92)	(0+20, 996.91)	0.013
(0+20, 996.91)	(0+26, 997.00)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

50 YEAR STORM, Sub-Area 17 - Section I

Results

Normal Depth		0.82	ft
Elevation Range	996.31 to 1000.00 ft		
Flow Area		5.13	ft²
Wetted Perimeter		19.12	ft
Hydraulic Radius		0.27	ft
Top Width		18.69	ft
Normal Depth		0.82	ft
Critical Depth		0.99	ft
Critical Slope		0.00559	ft/ft
Velocity		6.09	ft/s
Velocity Head		0.58	ft
Specific Energy		1.40	ft
Froude Number		2.05	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.82	ft
Critical Depth	0.99	ft
Channel Slope	0.02700	ft/ft
Critical Slope	0.00559	ft/ft

50 YEAR STORM, Sub-Area 17 - Section I

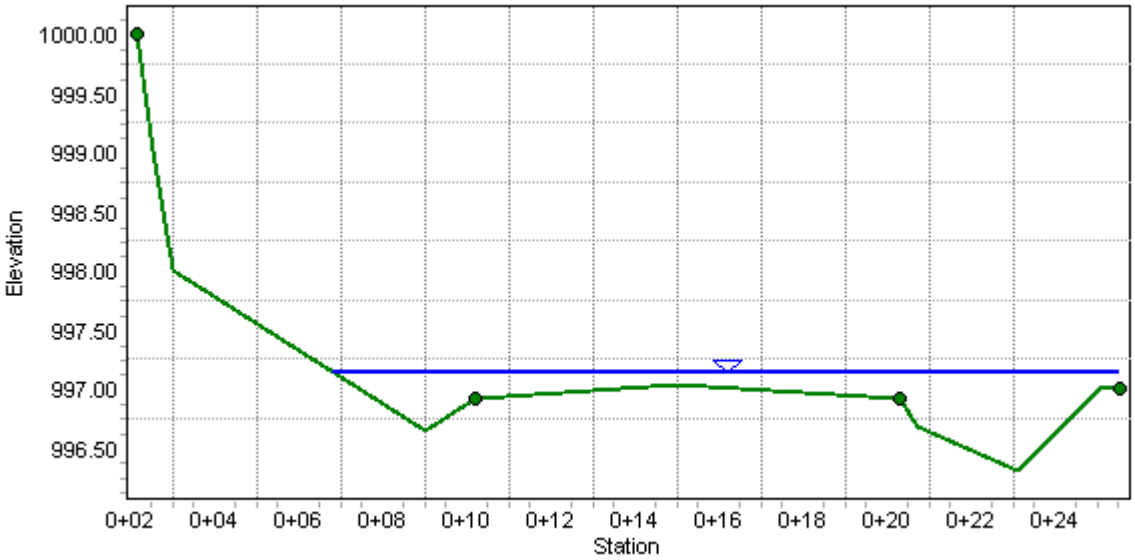
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02700	ft/ft
Normal Depth	0.82	ft
Discharge	31.29	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 18 - Section J

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05300	ft/ft
Discharge	32.95	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+01	1000.00
0+02	999.00
0+06	996.00
0+07	994.95
0+08	995.11
0+08	995.21
0+15	995.33
0+22	995.19
0+23	994.90
0+25	994.97

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+01, 1000.00)	(0+08, 995.21)	0.020
(0+08, 995.21)	(0+22, 995.19)	0.013
(0+22, 995.19)	(0+25, 994.97)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.52	ft

50 YEAR STORM, Sub-Area 18 - Section J

Results

Elevation Range	994.90 to 1000.00 ft		
Flow Area		4.13	ft²
Wetted Perimeter		19.51	ft
Hydraulic Radius		0.21	ft
Top Width		18.80	ft
Normal Depth		0.52	ft
Critical Depth		0.76	ft
Critical Slope		0.00474	ft/ft
Velocity		7.97	ft/s
Velocity Head		0.99	ft
Specific Energy		1.51	ft
Froude Number		3.00	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.52	ft
Critical Depth	0.76	ft
Channel Slope	0.05300	ft/ft
Critical Slope	0.00474	ft/ft

50 YEAR STORM, Sub-Area 18 - Section J

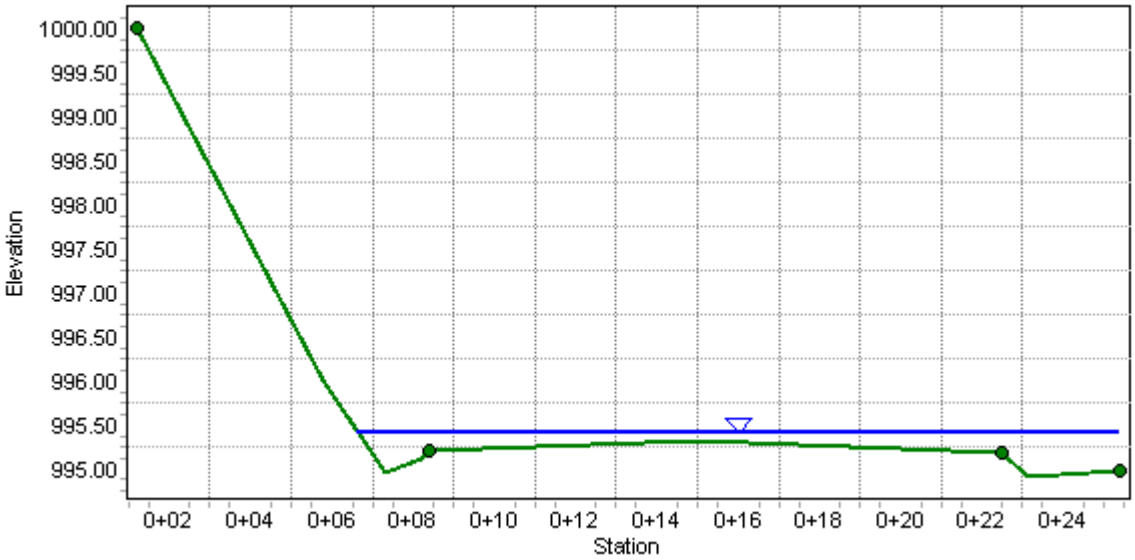
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05300	ft/ft
Normal Depth	0.52	ft
Discharge	32.95	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 19 - Section K

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Discharge	33.90	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+02	995.00
0+06	990.00
0+07	989.00
0+09	988.00
0+10	987.85
0+17	988.00
0+20	988.08
0+20	988.23
0+21	988.31

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+02, 995.00)	(0+10, 987.85)	0.020
(0+10, 987.85)	(0+20, 988.23)	0.013
(0+20, 988.23)	(0+21, 988.31)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.45	ft
Elevation Range	987.85 to 995.00 ft	

50 YEAR STORM, Sub-Area 19 - Section K

Results

Flow Area		3.81	ft²
Wetted Perimeter		12.50	ft
Hydraulic Radius		0.31	ft
Top Width		12.36	ft
Normal Depth		0.45	ft
Critical Depth		0.76	ft
Critical Slope		0.00367	ft/ft
Velocity		8.89	ft/s
Velocity Head		1.23	ft
Specific Energy		1.68	ft
Froude Number		2.82	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.45	ft
Critical Depth	0.76	ft
Channel Slope	0.03500	ft/ft
Critical Slope	0.00367	ft/ft

50 YEAR STORM, Sub-Area 19 - Section K

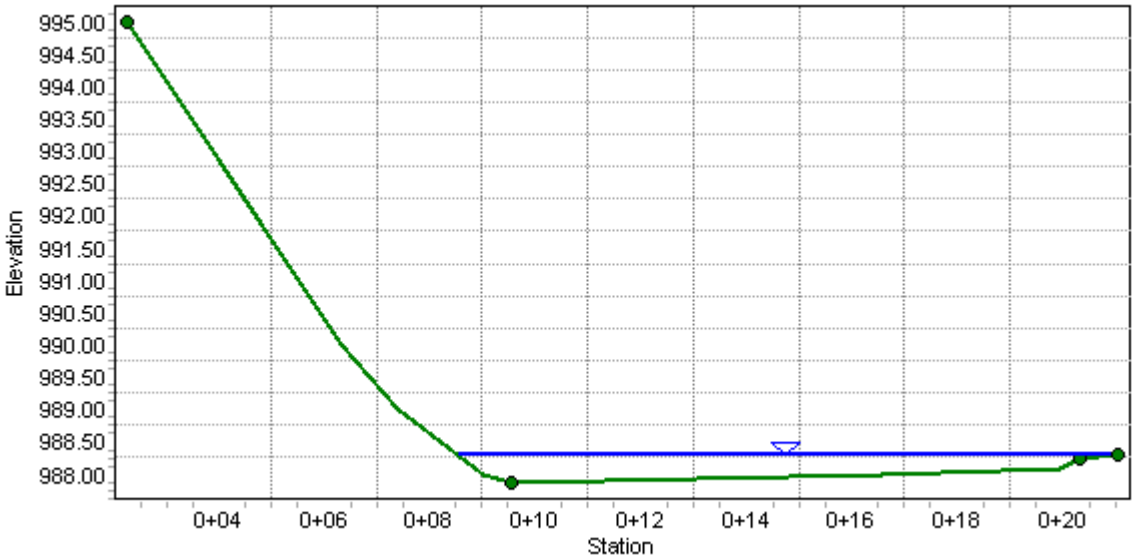
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03500	ft/ft
Normal Depth	0.45	ft
Discharge	33.90	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 20 - Section L

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.06100	ft/ft
Discharge	34.01	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+01	992.00
0+03	990.00
0+06	985.00
0+07	984.00
0+10	983.29
0+11	983.66
0+15	983.76
0+19	983.74
0+19	984.00
0+19	984.21
0+20	984.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+01, 992.00)	(0+11, 983.66)	0.020
(0+11, 983.66)	(0+20, 984.00)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.69	ft

50 YEAR STORM, Sub-Area 20 - Section L

Results

Elevation Range	983.29 to 992.00 ft		
Flow Area		3.42	ft²
Wetted Perimeter		12.46	ft
Hydraulic Radius		0.27	ft
Top Width		12.16	ft
Normal Depth		0.69	ft
Critical Depth		1.03	ft
Critical Slope		0.00460	ft/ft
Velocity		9.94	ft/s
Velocity Head		1.54	ft
Specific Energy		2.23	ft
Froude Number		3.30	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.69	ft
Critical Depth	1.03	ft
Channel Slope	0.06100	ft/ft
Critical Slope	0.00460	ft/ft

50 YEAR STORM, Sub-Area 20 - Section L

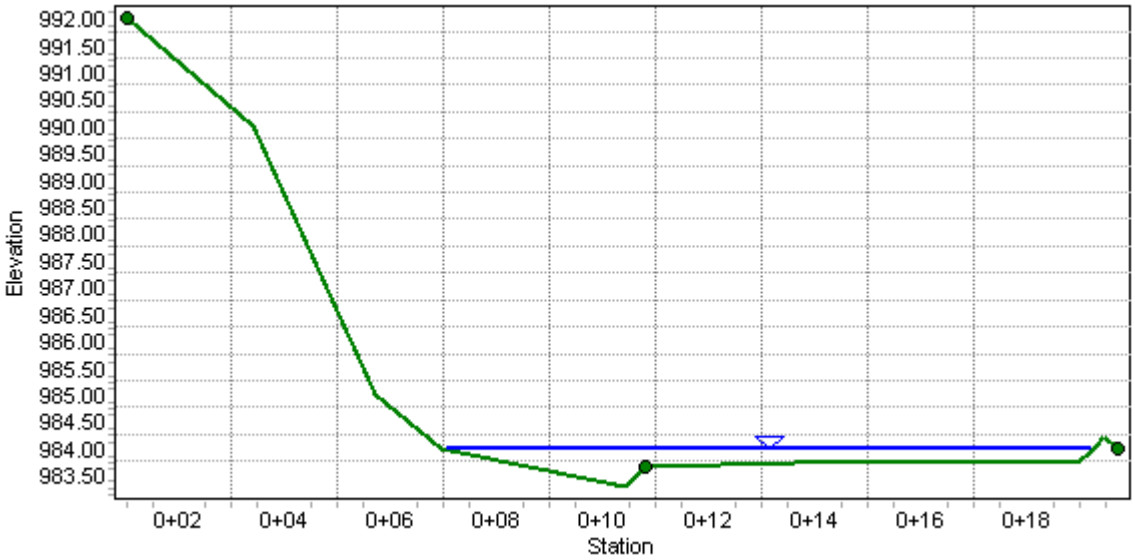
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.06100	ft/ft
Normal Depth	0.69	ft
Discharge	34.01	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 21 - Section M

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03300	ft/ft
Discharge	34.12	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+06	985.00
0+07	980.00
0+08	978.00
0+09	977.78
0+10	977.74
0+10	977.81
0+15	978.01
0+20	977.95
0+20	977.96
0+21	977.98
0+23	978.16

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+06, 985.00)	(0+10, 977.81)	0.020
(0+10, 977.81)	(0+23, 978.16)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.50	ft

50 YEAR STORM, Sub-Area 21 - Section M

Results

Elevation Range	977.74 to 985.00 ft		
Flow Area		4.12	ft²
Wetted Perimeter		14.56	ft
Hydraulic Radius		0.28	ft
Top Width		14.28	ft
Normal Depth		0.50	ft
Critical Depth		0.77	ft
Critical Slope		0.00373	ft/ft
Velocity		8.28	ft/s
Velocity Head		1.06	ft
Specific Energy		1.56	ft
Froude Number		2.71	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.50	ft
Critical Depth	0.77	ft
Channel Slope	0.03300	ft/ft
Critical Slope	0.00373	ft/ft

50 YEAR STORM, Sub-Area 21 - Section M

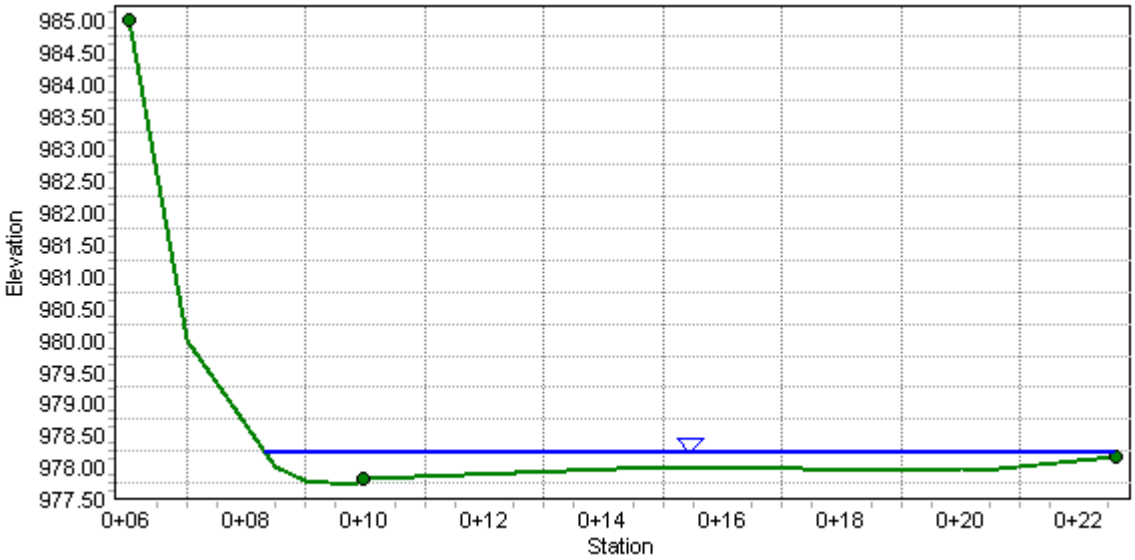
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03300	ft/ft
Normal Depth	0.50	ft
Discharge	34.12	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 22 - Section N

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Discharge	34.38	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	977.51
0+07	975.00
0+08	974.00
0+09	972.56
0+09	972.99
0+15	973.30
0+20	973.31
0+20	973.13
0+21	972.91
0+22	973.17

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 977.51)	(0+09, 972.99)	0.020
(0+09, 972.99)	(0+20, 973.31)	0.013
(0+20, 973.31)	(0+22, 973.17)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.93	ft

50 YEAR STORM, Sub-Area 22 - Section N

Results

Elevation Range	972.56 to 977.51 ft		
Flow Area		4.23	ft²
Wetted Perimeter		14.37	ft
Hydraulic Radius		0.29	ft
Top Width		13.32	ft
Normal Depth		0.93	ft
Critical Depth		1.20	ft
Critical Slope		0.00472	ft/ft
Velocity		8.12	ft/s
Velocity Head		1.03	ft
Specific Energy		1.95	ft
Froude Number		2.54	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.93	ft
Critical Depth	1.20	ft
Channel Slope	0.03600	ft/ft
Critical Slope	0.00472	ft/ft

50 YEAR STORM, Sub-Area 22 - Section N

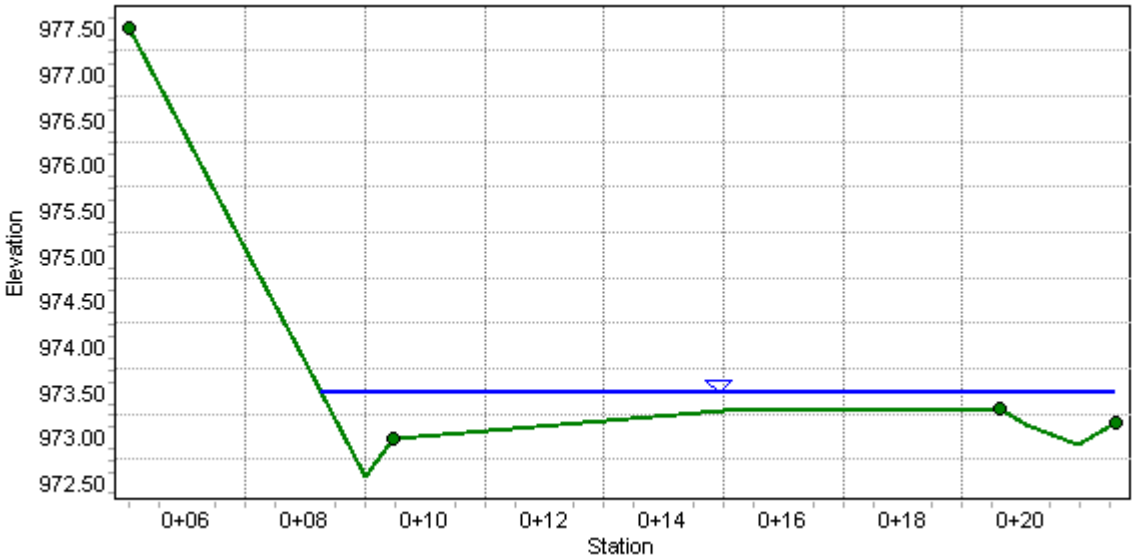
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Normal Depth	0.93	ft
Discharge	34.38	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 23 - Section O

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03700	ft/ft
Discharge	34.84	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+04	973.78
0+08	970.00
0+09	968.84
0+10	969.00
0+15	969.27
0+20	969.20
0+20	969.03
0+22	969.09
0+28	969.48

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+04, 973.78)	(0+10, 969.00)	0.020
(0+10, 969.00)	(0+20, 969.20)	0.013
(0+20, 969.20)	(0+28, 969.48)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.62	ft
Elevation Range	968.84 to 973.78 ft	

50 YEAR STORM, Sub-Area 23 - Section O

Results

Flow Area		4.98	ft²
Wetted Perimeter		19.06	ft
Hydraulic Radius		0.26	ft
Top Width		18.71	ft
Normal Depth		0.62	ft
Critical Depth		0.83	ft
Critical Slope		0.00545	ft/ft
Velocity		7.00	ft/s
Velocity Head		0.76	ft
Specific Energy		1.38	ft
Froude Number		2.39	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.62	ft
Critical Depth	0.83	ft
Channel Slope	0.03700	ft/ft
Critical Slope	0.00545	ft/ft

50 YEAR STORM, Sub-Area 23 - Section O

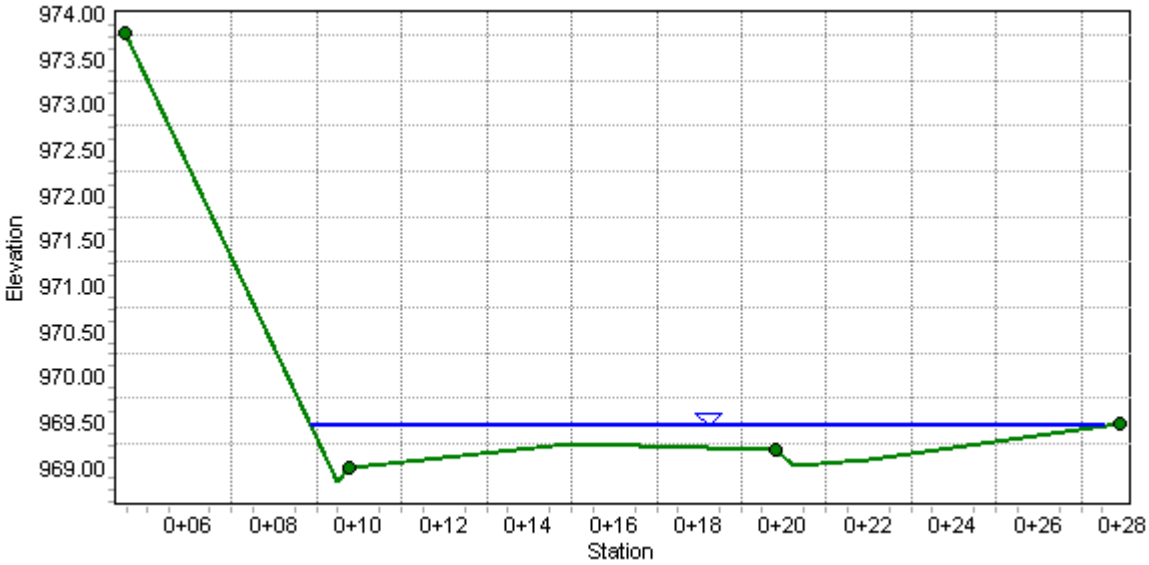
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03700	ft/ft
Normal Depth	0.62	ft
Discharge	34.84	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 24 - Section P

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04400	ft/ft
Discharge	35.23	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+06	970.00
0+08	966.00
0+10	965.10
0+10	965.32
0+15	965.53
0+19	965.72
0+20	965.93
0+20	965.41
0+21	965.16
0+23	965.44
0+27	965.47

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+06, 970.00)	(0+10, 965.32)	0.020
(0+10, 965.32)	(0+20, 965.41)	0.013
(0+20, 965.41)	(0+27, 965.47)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

50 YEAR STORM, Sub-Area 24 - Section P

Results

Normal Depth		0.62	ft
Elevation Range	965.10 to 970.00 ft		
Flow Area		4.66	ft²
Wetted Perimeter		18.25	ft
Hydraulic Radius		0.26	ft
Top Width		17.57	ft
Normal Depth		0.62	ft
Critical Depth		0.86	ft
Critical Slope		0.00552	ft/ft
Velocity		7.56	ft/s
Velocity Head		0.89	ft
Specific Energy		1.51	ft
Froude Number		2.59	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.62	ft
Critical Depth	0.86	ft
Channel Slope	0.04400	ft/ft
Critical Slope	0.00552	ft/ft

50 YEAR STORM, Sub-Area 24 - Section P

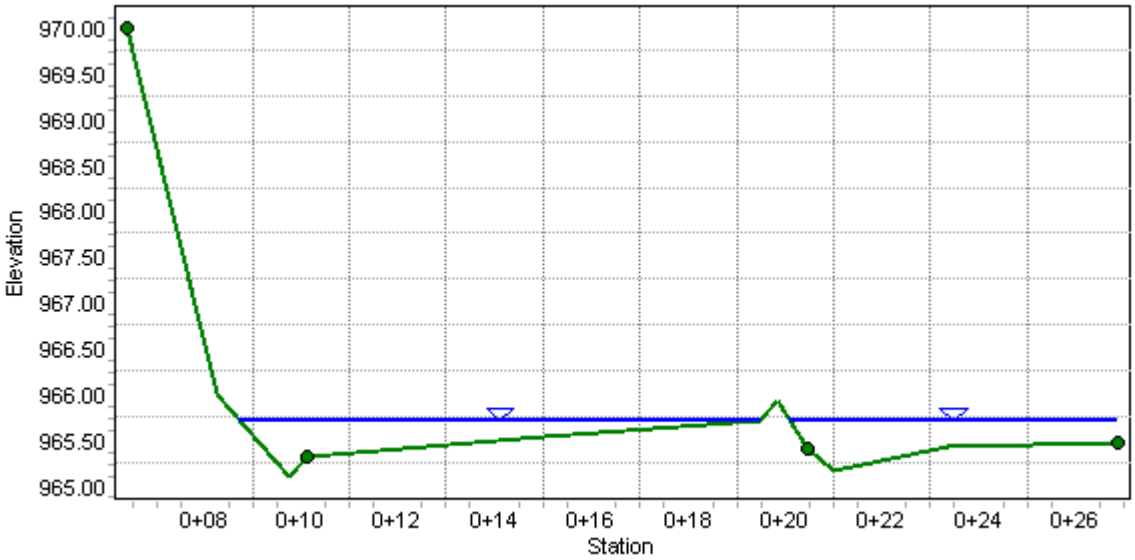
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04400	ft/ft
Normal Depth	0.62	ft
Discharge	35.23	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 25 - Section Q

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Discharge	35.63	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	962.00
0+08	960.52
0+10	960.44
0+10	960.62
0+15	960.89
0+19	960.86
0+20	961.37
0+20	960.80

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 962.00)	(0+10, 960.62)	0.020
(0+10, 960.62)	(0+20, 960.80)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.63	ft
Elevation Range	960.44 to 962.00 ft	
Flow Area	3.79	ft²
Wetted Perimeter	13.14	ft

50 YEAR STORM, Sub-Area 25 - Section Q

Results

Hydraulic Radius		0.29	ft
Top Width		12.43	ft
Normal Depth		0.63	ft
Critical Depth		0.96	ft
Critical Slope		0.00443	ft/ft
Velocity		9.39	ft/s
Velocity Head		1.37	ft
Specific Energy		2.00	ft
Froude Number		3.00	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.63	ft
Critical Depth	0.96	ft
Channel Slope	0.04700	ft/ft
Critical Slope	0.00443	ft/ft

50 YEAR STORM, Sub-Area 25 - Section Q

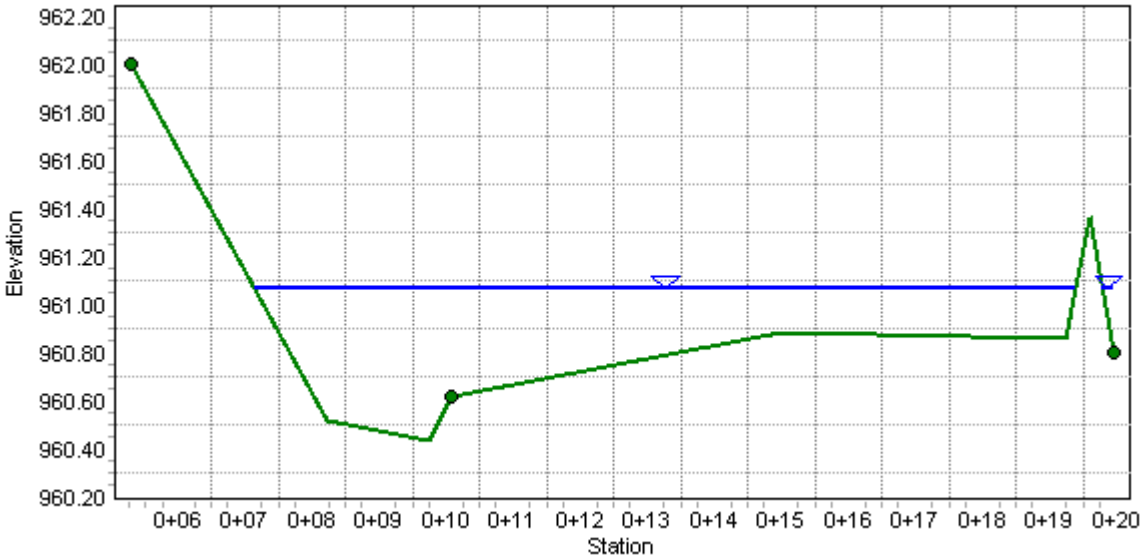
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Normal Depth	0.63	ft
Discharge	35.63	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 26 - Section R

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Discharge	36.25	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	954.85
0+07	953.08
0+09	951.55
0+10	951.49
0+10	951.60
0+15	951.76
0+20	951.70
0+21	951.46
0+22	951.45
0+23	951.81

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 954.85)	(0+10, 951.60)	0.020
(0+10, 951.60)	(0+20, 951.70)	0.013
(0+20, 951.70)	(0+23, 951.81)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.50	ft

50 YEAR STORM, Sub-Area 26 - Section R

Results

Elevation Range	951.45 to 954.85 ft		
Flow Area		4.27	ft²
Wetted Perimeter		15.03	ft
Hydraulic Radius		0.28	ft
Top Width		14.60	ft
Normal Depth		0.50	ft
Critical Depth		0.79	ft
Critical Slope		0.00465	ft/ft
Velocity		8.49	ft/s
Velocity Head		1.12	ft
Specific Energy		1.62	ft
Froude Number		2.77	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.50	ft
Critical Depth	0.79	ft
Channel Slope	0.04300	ft/ft
Critical Slope	0.00465	ft/ft

50 YEAR STORM, Sub-Area 26 - Section R

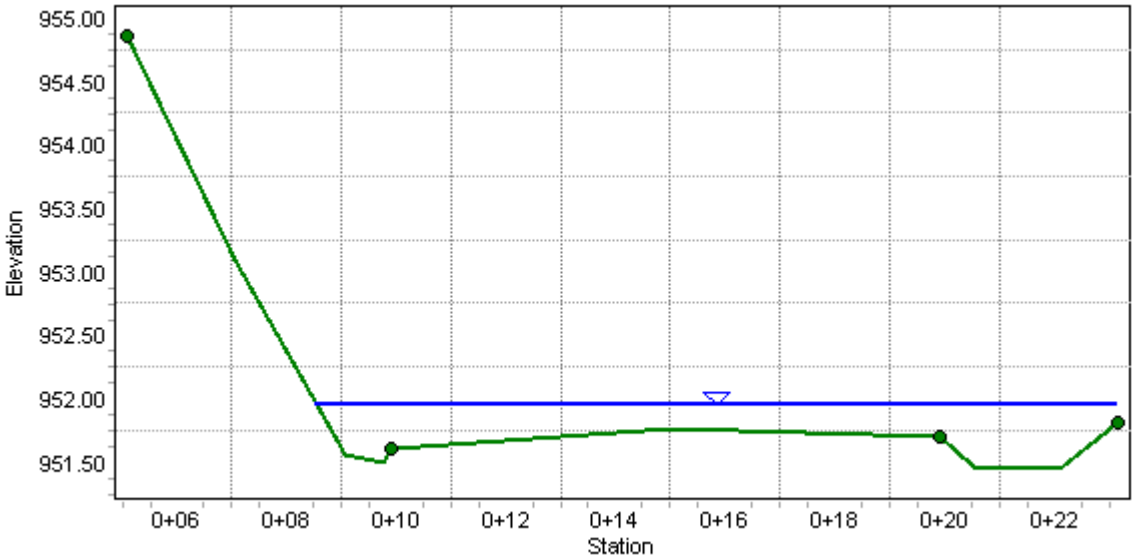
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Normal Depth	0.50	ft
Discharge	36.25	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 27 - Section S

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05800	ft/ft
Discharge	36.98	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	951.00
0+06	950.00
0+08	949.00
0+09	948.76
0+09	948.89
0+15	949.21
0+21	949.17
0+21	949.01
0+22	949.05
0+23	949.46

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 951.00)	(0+09, 948.89)	0.020
(0+09, 948.89)	(0+21, 949.17)	0.013
(0+21, 949.17)	(0+23, 949.46)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.59	ft

50 YEAR STORM, Sub-Area 27 - Section S

Results

Elevation Range	948.76 to 951.00 ft		
Flow Area		3.97	ft²
Wetted Perimeter		15.91	ft
Hydraulic Radius		0.25	ft
Top Width		15.61	ft
Normal Depth		0.59	ft
Critical Depth		0.89	ft
Critical Slope		0.00435	ft/ft
Velocity		9.32	ft/s
Velocity Head		1.35	ft
Specific Energy		1.94	ft
Froude Number		3.26	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.59	ft
Critical Depth	0.89	ft
Channel Slope	0.05800	ft/ft
Critical Slope	0.00435	ft/ft

50 YEAR STORM, Sub-Area 27 - Section S

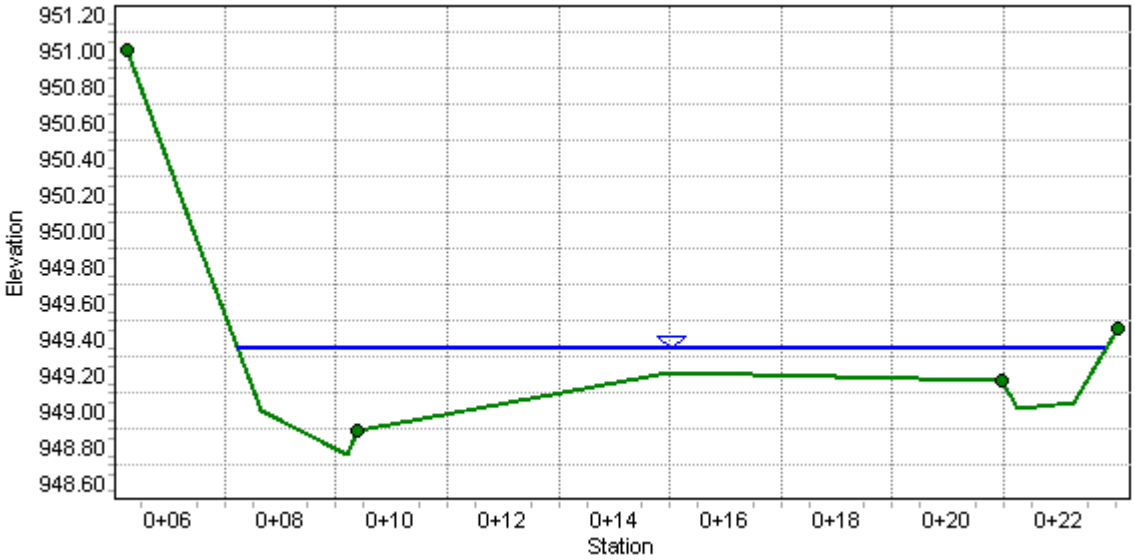
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05800	ft/ft
Normal Depth	0.59	ft
Discharge	36.98	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 28 - Section T

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Discharge	37.51	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	946.45
0+07	945.00
0+09	943.56
0+09	942.63
0+10	942.74
0+10	942.91
0+15	943.01
0+21	942.76
0+21	942.69
0+26	942.78

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 946.45)	(0+10, 942.91)	0.020
(0+10, 942.91)	(0+21, 942.76)	0.013
(0+21, 942.76)	(0+26, 942.78)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.52	ft

50 YEAR STORM, Sub-Area 28 - Section T

Results

Elevation Range	942.63 to 946.45 ft		
Flow Area		5.01	ft²
Wetted Perimeter		17.73	ft
Hydraulic Radius		0.28	ft
Top Width		17.01	ft
Normal Depth		0.52	ft
Critical Depth		0.75	ft
Critical Slope		0.00515	ft/ft
Velocity		7.48	ft/s
Velocity Head		0.87	ft
Specific Energy		1.39	ft
Froude Number		2.43	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.52	ft
Critical Depth	0.75	ft
Channel Slope	0.03600	ft/ft
Critical Slope	0.00515	ft/ft

50 YEAR STORM, Sub-Area 28 - Section T

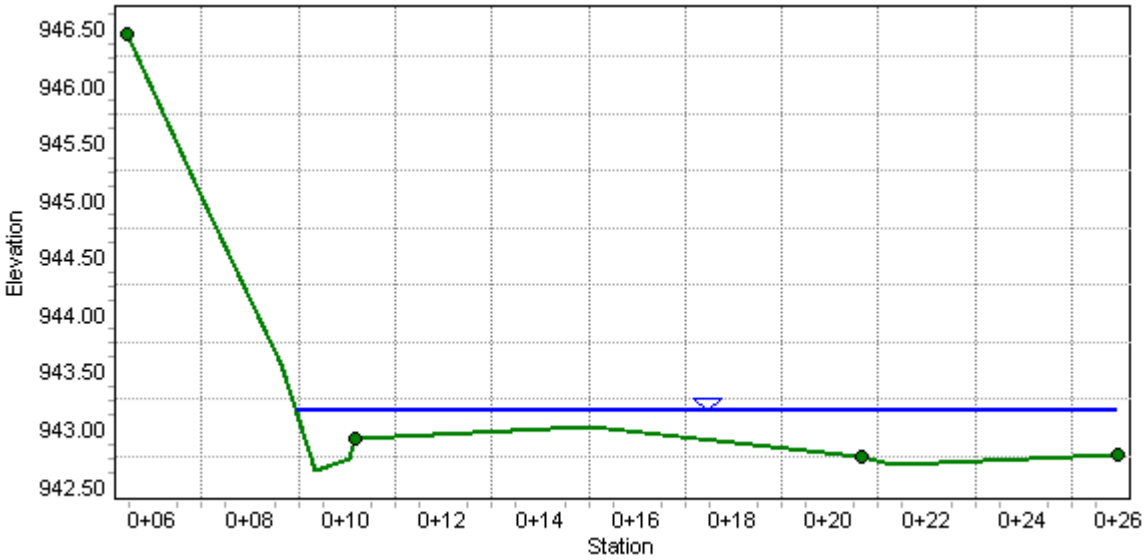
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Normal Depth	0.52	ft
Discharge	37.51	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 29 - Section U

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04500	ft/ft
Discharge	39.03	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	937.77
0+08	935.00
0+09	934.17
0+10	934.15
0+15	934.18
0+22	933.76
0+22	933.69
0+24	934.35

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 937.77)	(0+10, 934.15)	0.020
(0+10, 934.15)	(0+22, 933.76)	0.013
(0+22, 933.76)	(0+24, 934.35)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.64	ft
Elevation Range	933.69 to 937.77 ft	
Flow Area	4.24	ft²

50 YEAR STORM, Sub-Area 29 - Section U

Results

Wetted Perimeter		15.07	ft
Hydraulic Radius		0.28	ft
Top Width		14.85	ft
Normal Depth		0.64	ft
Critical Depth		0.96	ft
Critical Slope		0.00397	ft/ft
Velocity		9.21	ft/s
Velocity Head		1.32	ft
Specific Energy		1.96	ft
Froude Number		3.04	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.64	ft
Critical Depth	0.96	ft
Channel Slope	0.04500	ft/ft
Critical Slope	0.00397	ft/ft

50 YEAR STORM, Sub-Area 29 - Section U

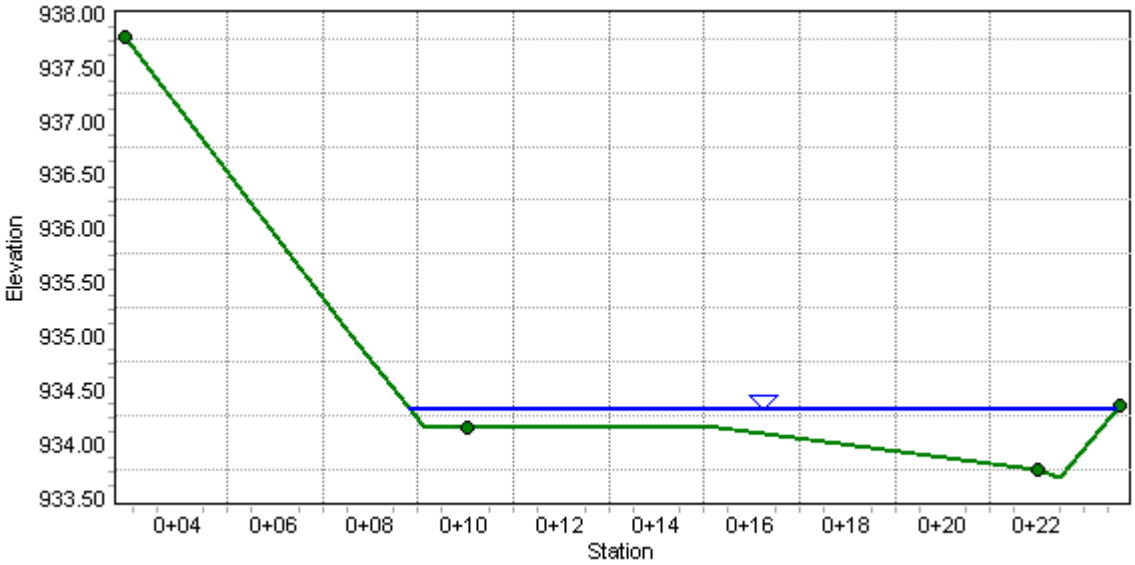
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04500	ft/ft
Normal Depth	0.64	ft
Discharge	39.03	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 30 - Section V

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Discharge	42.60	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+02	921.25
0+05	920.00
0+07	918.84
0+08	918.91
0+15	919.53
0+21	919.41
0+22	919.38
0+25	919.63

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+02, 921.25)	(0+08, 918.91)	0.020
(0+08, 918.91)	(0+21, 919.41)	0.013
(0+21, 919.41)	(0+25, 919.63)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.76	ft
Elevation Range	918.84 to 921.25 ft	
Flow Area	5.19	ft²

50 YEAR STORM, Sub-Area 30 - Section V

Results

Wetted Perimeter		19.34	ft
Hydraulic Radius		0.27	ft
Top Width		19.13	ft
Normal Depth		0.76	ft
Critical Depth		1.03	ft
Critical Slope		0.00457	ft/ft
Velocity		8.20	ft/s
Velocity Head		1.05	ft
Specific Energy		1.81	ft
Froude Number		2.78	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.76	ft
Critical Depth	1.03	ft
Channel Slope	0.04300	ft/ft
Critical Slope	0.00457	ft/ft

50 YEAR STORM, Sub-Area 30 - Section V

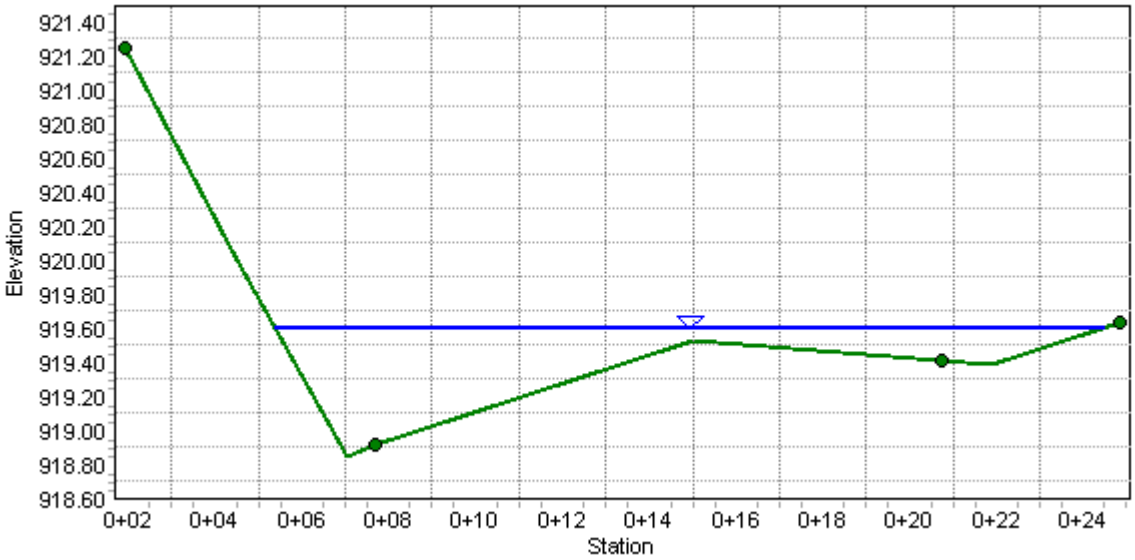
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04300	ft/ft
Normal Depth	0.76	ft
Discharge	42.60	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 31 - Section W

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03800	ft/ft
Discharge	44.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	908.24
0+06	906.31
0+09	906.35
0+10	906.60
0+15	906.74

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 908.24)	(0+10, 906.60)	0.020
(0+10, 906.60)	(0+15, 906.74)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.71	ft
Elevation Range	906.31 to 908.24 ft	
Flow Area	4.44	ft²
Wetted Perimeter	10.45	ft
Hydraulic Radius	0.42	ft
Top Width	9.92	ft
Normal Depth	0.71	ft

50 YEAR STORM, Sub-Area 31 - Section W

Results

Critical Depth		1.11	ft
Critical Slope		0.00483	ft/ft
Velocity		9.91	ft/s
Velocity Head		1.53	ft
Specific Energy		2.23	ft
Froude Number		2.61	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.71	ft
Critical Depth	1.11	ft
Channel Slope	0.03800	ft/ft
Critical Slope	0.00483	ft/ft

50 YEAR STORM, Sub-Area 31 - Section W

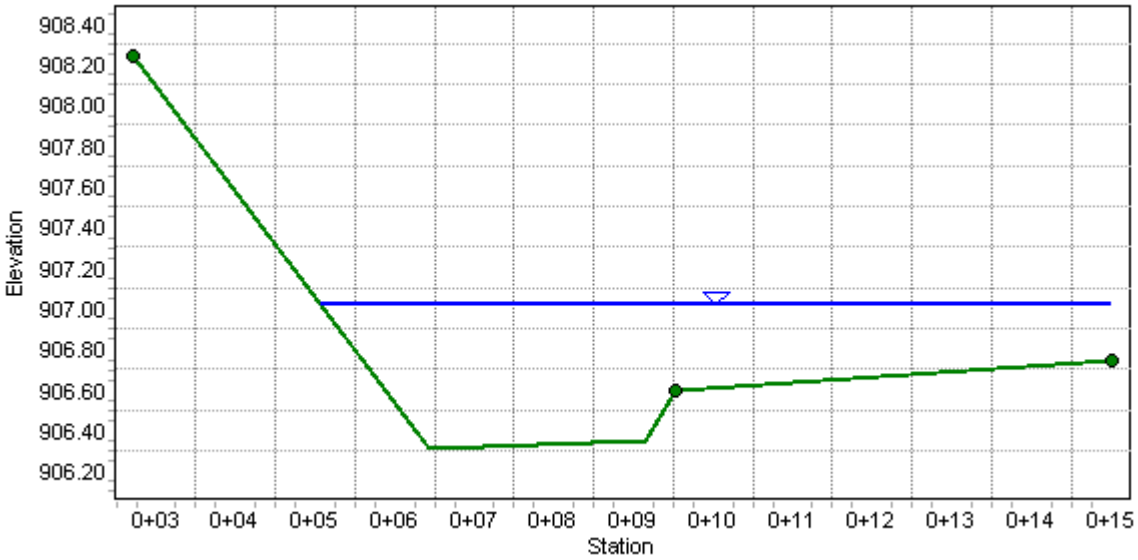
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03800	ft/ft
Normal Depth	0.71	ft
Discharge	44.00	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 32 - Section X

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02000	ft/ft
Discharge	45.80	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	906.00
0+05	905.00
0+05	904.57
0+07	904.00
0+10	903.14
0+15	903.17
0+20	903.07
0+20	903.55
0+21	903.02

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 906.00)	(0+10, 903.14)	0.020
(0+10, 903.14)	(0+21, 903.02)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.59	ft
Elevation Range	903.02 to 906.00 ft	
Flow Area	5.58	ft²

50 YEAR STORM, Sub-Area 32 - Section X

Results

Wetted Perimeter		14.01	ft
Hydraulic Radius		0.40	ft
Top Width		12.90	ft
Normal Depth		0.59	ft
Critical Depth		0.89	ft
Critical Slope		0.00362	ft/ft
Velocity		8.20	ft/s
Velocity Head		1.05	ft
Specific Energy		1.63	ft
Froude Number		2.20	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.59	ft
Critical Depth	0.89	ft
Channel Slope	0.02000	ft/ft
Critical Slope	0.00362	ft/ft

50 YEAR STORM, Sub-Area 32 - Section X

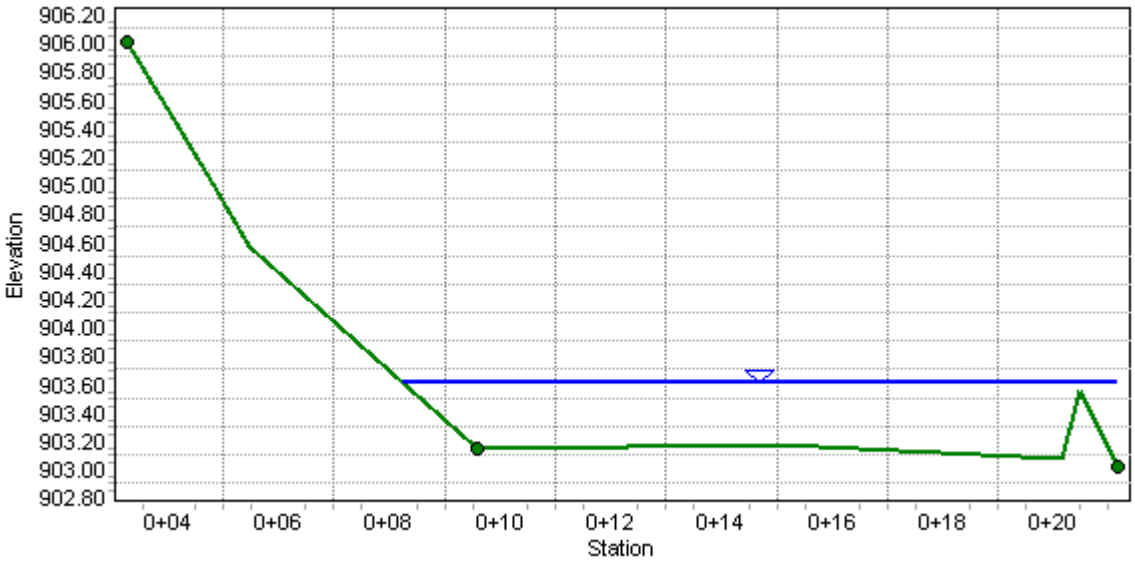
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02000	ft/ft
Normal Depth	0.59	ft
Discharge	45.80	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 33 - Section Y

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02100	ft/ft
Discharge	47.11	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+02	902.00
0+05	901.24
0+11	901.09
0+15	901.21
0+22	901.12
0+22	901.70
0+23	901.42

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+02, 902.00)	(0+11, 901.09)	0.020
(0+11, 901.09)	(0+23, 901.42)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.46	ft
Elevation Range	901.09 to 902.00 ft	
Flow Area	6.84	ft²
Wetted Perimeter	18.82	ft
Hydraulic Radius	0.36	ft

50 YEAR STORM, Sub-Area 33 - Section Y

Results

Top Width		18.36	ft
Normal Depth		0.46	ft
Critical Depth		0.68	ft
Critical Slope		0.00471	ft/ft
Velocity		6.89	ft/s
Velocity Head		0.74	ft
Specific Energy		1.20	ft
Froude Number		1.99	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.46	ft
Critical Depth	0.68	ft
Channel Slope	0.02100	ft/ft
Critical Slope	0.00471	ft/ft

50 YEAR STORM, Sub-Area 33 - Section Y

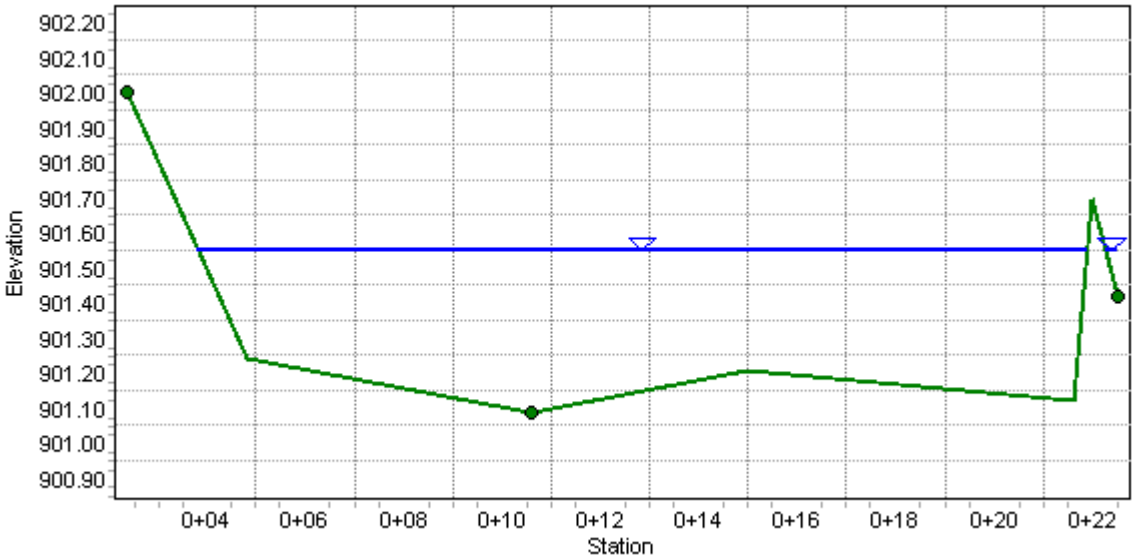
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02100	ft/ft
Normal Depth	0.46	ft
Discharge	47.11	ft³/s

Cross Section Image



50 YEAR STORM, Sub-Area 34 - Section Z

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.00900	ft/ft
Discharge	47.89	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	896.18
0+06	896.00
0+09	895.75
0+15	895.84
0+25	895.94
0+29	896.63

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 896.18)	(0+09, 895.75)	0.020
(0+09, 895.75)	(0+25, 895.94)	0.013
(0+25, 895.94)	(0+29, 896.63)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.56	ft
Elevation Range	895.75 to 896.63 ft	
Flow Area	9.69	ft²
Wetted Perimeter	23.99	ft
Hydraulic Radius	0.40	ft

50 YEAR STORM, Sub-Area 34 - Section Z

Results

Top Width		23.81	ft
Normal Depth		0.56	ft
Critical Depth		0.66	ft
Critical Slope		0.00455	ft/ft
Velocity		4.94	ft/s
Velocity Head		0.38	ft
Specific Energy		0.94	ft
Froude Number		1.36	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.56	ft
Critical Depth	0.66	ft
Channel Slope	0.00900	ft/ft
Critical Slope	0.00455	ft/ft

50 YEAR STORM, Sub-Area 34 - Section Z

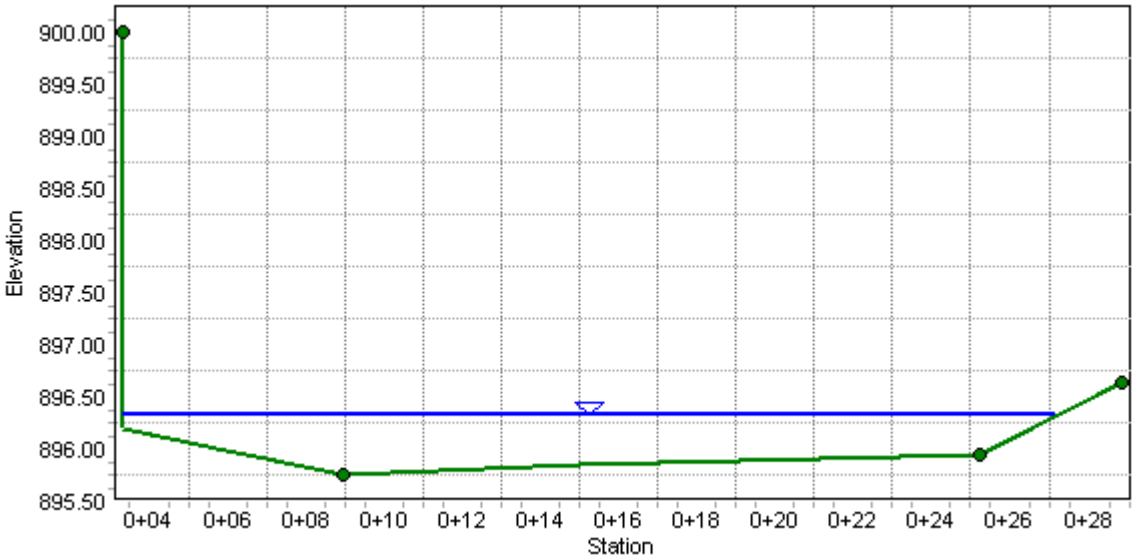
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.00900	ft/ft
Normal Depth	0.56	ft
Discharge	47.89	ft³/s

Cross Section Image



50 YEAR STORM, Section AA

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Discharge	34.12	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+01	978.00
0+03	977.00
0+07	976.09
0+09	976.00
0+09	975.98
0+11	976.00
0+15	976.08
0+18	976.00
0+20	975.88
0+20	976.36

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+01, 978.00)	(0+09, 975.98)	0.020
(0+09, 975.98)	(0+20, 976.36)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.44	ft
Elevation Range	975.88 to 978.00 ft	

50 YEAR STORM, Section AA

Results

Flow Area		4.14	ft²
Wetted Perimeter		14.61	ft
Hydraulic Radius		0.28	ft
Top Width		14.38	ft
Normal Depth		0.44	ft
Critical Depth		0.72	ft
Critical Slope		0.00409	ft/ft
Velocity		8.24	ft/s
Velocity Head		1.06	ft
Specific Energy		1.50	ft
Froude Number		2.71	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.44	ft
Critical Depth	0.72	ft
Channel Slope	0.03600	ft/ft
Critical Slope	0.00409	ft/ft

50 YEAR STORM, Section AA

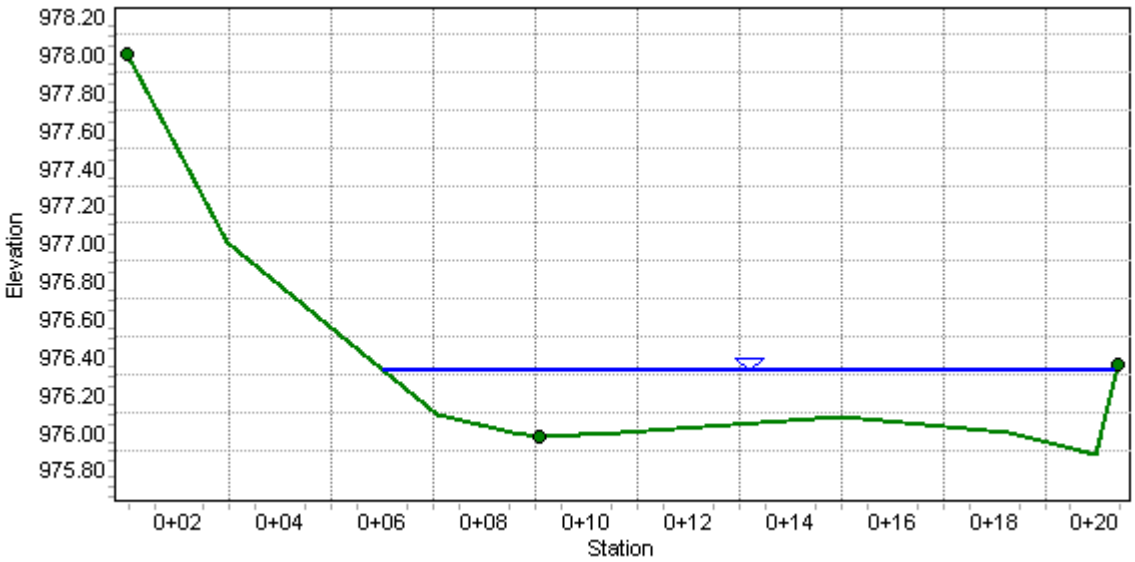
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Normal Depth	0.44	ft
Discharge	34.12	ft³/s

Cross Section Image



50 YEAR STORM, Section BB

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Discharge	34.12	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+08	977.00
0+08	976.00
0+09	975.00
0+09	974.00
0+10	973.84
0+10	974.08
0+15	974.35
0+20	974.44
0+21	974.21
0+23	974.45
0+26	974.63

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+08, 977.00)	(0+10, 974.08)	0.020
(0+10, 974.08)	(0+20, 974.44)	0.013
(0+20, 974.44)	(0+26, 974.63)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

50 YEAR STORM, Section BB

Results

Normal Depth		0.77	ft
Elevation Range	973.84 to 977.00 ft		
Flow Area		4.72	ft²
Wetted Perimeter		17.47	ft
Hydraulic Radius		0.27	ft
Top Width		16.84	ft
Normal Depth		0.77	ft
Critical Depth		0.99	ft
Critical Slope		0.00527	ft/ft
Velocity		7.23	ft/s
Velocity Head		0.81	ft
Specific Energy		1.58	ft
Froude Number		2.41	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.77	ft
Critical Depth	0.99	ft
Channel Slope	0.03600	ft/ft
Critical Slope	0.00527	ft/ft

50 YEAR STORM, Section BB

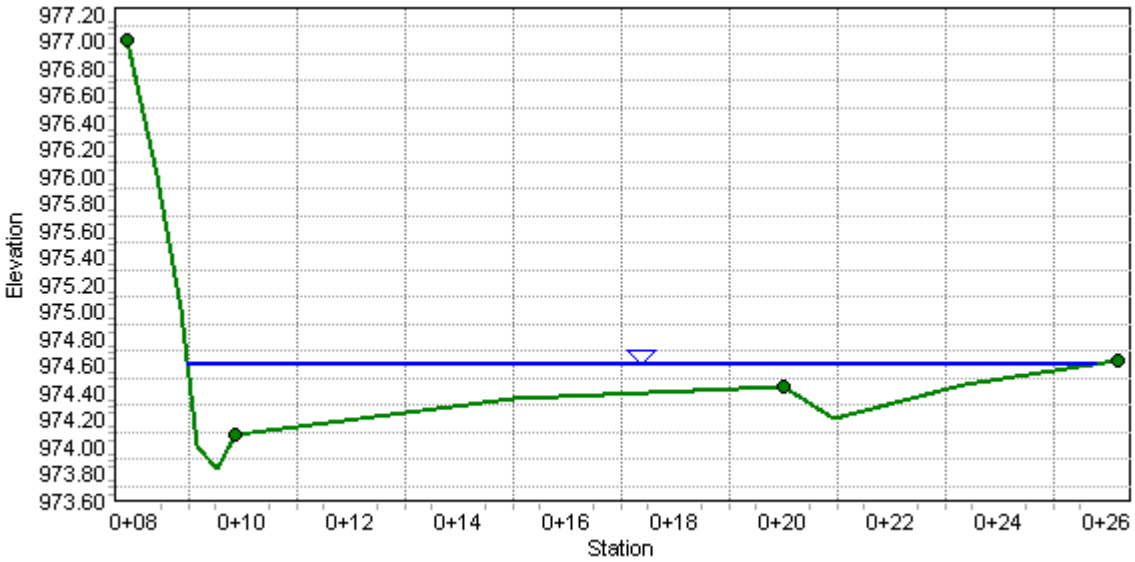
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03600	ft/ft
Normal Depth	0.77	ft
Discharge	34.12	ft³/s

Cross Section Image



50 YEAR STORM, Section CC

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Discharge	35.63	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+05	964.50
0+08	959.62
0+10	958.34
0+11	958.24
0+11	958.42
0+15	958.54
0+20	958.41
0+20	958.23

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 964.50)	(0+11, 958.42)	0.020
(0+11, 958.42)	(0+20, 958.41)	0.013
(0+20, 958.41)	(0+20, 958.23)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.56	ft
Elevation Range	958.23 to 964.50 ft	
Flow Area	3.67	ft²

50 YEAR STORM, Section CC

Results

Wetted Perimeter		11.88	ft
Hydraulic Radius		0.31	ft
Top Width		11.10	ft
Normal Depth		0.56	ft
Critical Depth		0.91	ft
Critical Slope		0.00441	ft/ft
Velocity		9.70	ft/s
Velocity Head		1.46	ft
Specific Energy		2.02	ft
Froude Number		2.97	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.56	ft
Critical Depth	0.91	ft
Channel Slope	0.04700	ft/ft
Critical Slope	0.00441	ft/ft

50 YEAR STORM, Section CC

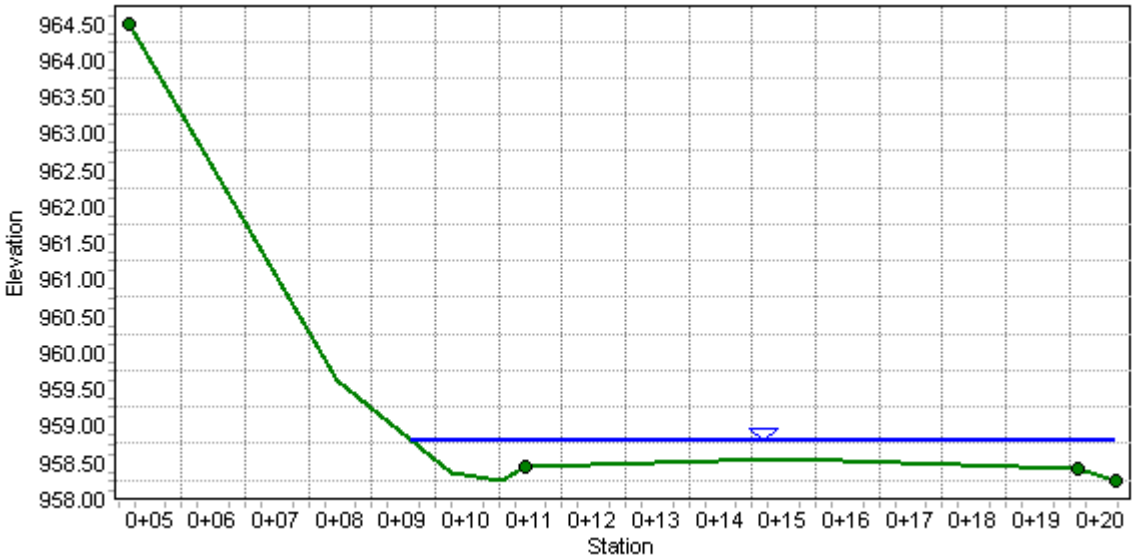
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Normal Depth	0.56	ft
Discharge	35.63	ft³/s

Cross Section Image



50 YEAR STORM, Section DD

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Discharge	35.63	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+03	962.83
0+07	957.90
0+09	957.22
0+10	957.30
0+15	957.41
0+20	957.24
0+21	957.05
0+23	957.40

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+03, 962.83)	(0+10, 957.30)	0.020
(0+10, 957.30)	(0+20, 957.24)	0.013
(0+20, 957.24)	(0+23, 957.40)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.54	ft
Elevation Range	957.05 to 962.83 ft	
Flow Area	4.20	ft²

50 YEAR STORM, Section DD

Results

Wetted Perimeter		15.56	ft
Hydraulic Radius		0.27	ft
Top Width		15.27	ft
Normal Depth		0.54	ft
Critical Depth		0.82	ft
Critical Slope		0.00475	ft/ft
Velocity		8.49	ft/s
Velocity Head		1.12	ft
Specific Energy		1.66	ft
Froude Number		2.85	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.54	ft
Critical Depth	0.82	ft
Channel Slope	0.04700	ft/ft
Critical Slope	0.00475	ft/ft

50 YEAR STORM, Section DD

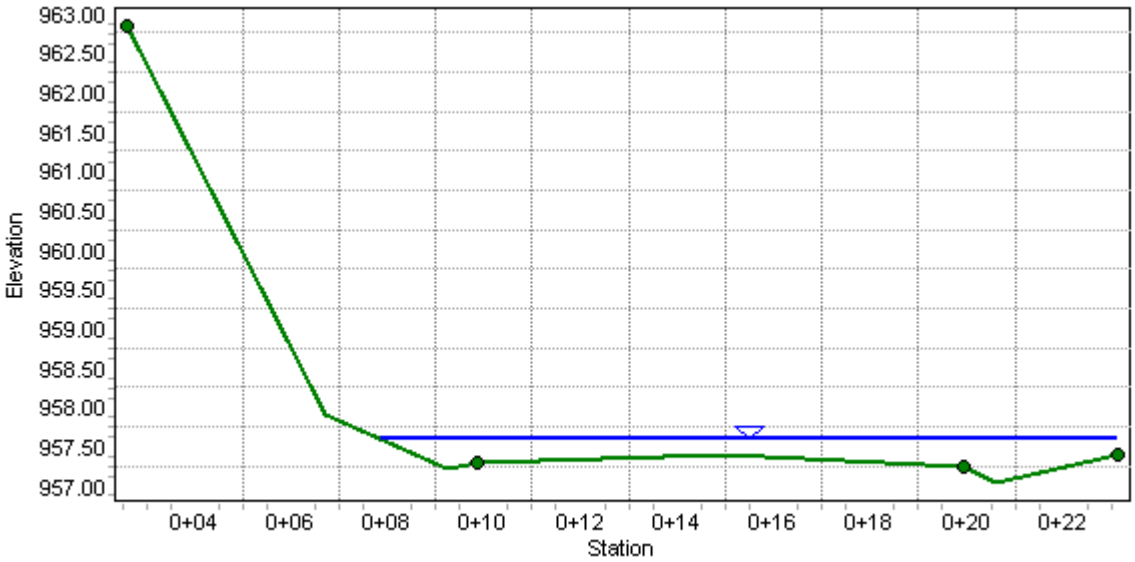
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Normal Depth	0.54	ft
Discharge	35.63	ft³/s

Cross Section Image



50 YEAR STORM, Section EE

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Discharge	35.63	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+04	959.26
0+09	954.33
0+09	954.28
0+10	954.52
0+15	954.64
0+20	954.53
0+21	954.86

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+04, 959.26)	(0+10, 954.52)	0.020
(0+10, 954.52)	(0+21, 954.86)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.58	ft
Elevation Range	954.28 to 959.26 ft	
Flow Area	3.66	ft²
Wetted Perimeter	13.24	ft
Hydraulic Radius	0.28	ft

50 YEAR STORM, Section EE

Results

Top Width		12.89	ft
Normal Depth		0.58	ft
Critical Depth		0.92	ft
Critical Slope		0.00366	ft/ft
Velocity		9.75	ft/s
Velocity Head		1.48	ft
Specific Energy		2.06	ft
Froude Number		3.23	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

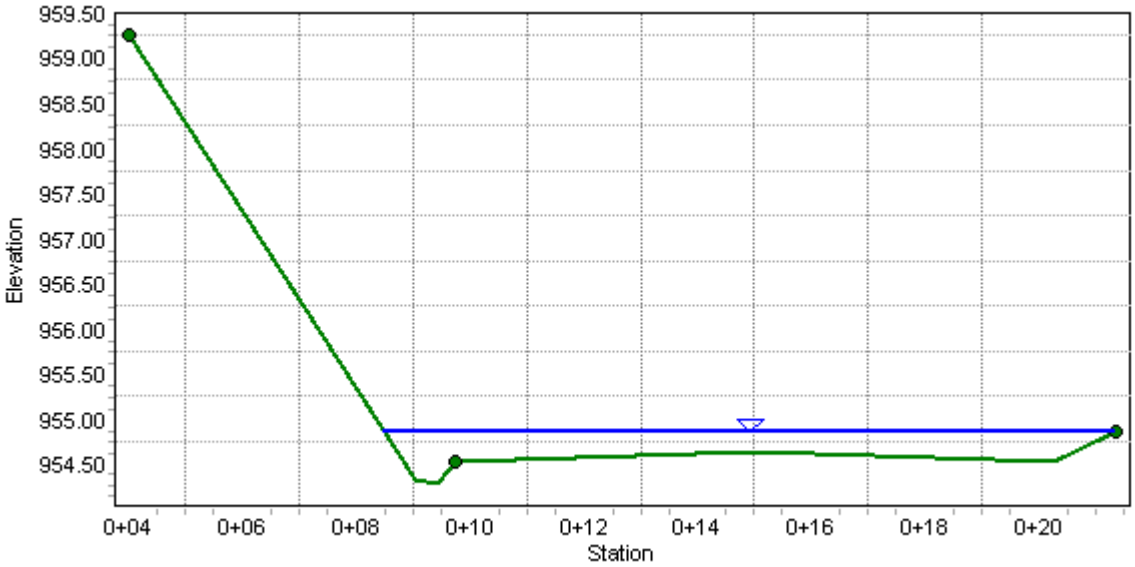
Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.58	ft
Critical Depth	0.92	ft
Channel Slope	0.04700	ft/ft
Critical Slope	0.00366	ft/ft

50 YEAR STORM, Section EE

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.04700	ft/ft
Normal Depth	0.58	ft
Discharge	35.63	ft³/s

Cross Section Image