

HY-8 Culvert Analysis Report

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 16.02 cfs

Maximum Flow: 17.98 cfs

Table 1 - Summary of Culvert Flows at Crossing: Crossing 37

Headwater Elevation (ft)	Total Discharge (cfs)	Lt. Sta. 598+75 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
390.59	0.00	0.00	0.00	1
391.32	1.80	1.80	0.00	1
391.63	3.60	3.60	0.00	1
391.88	5.39	5.39	0.00	1
392.11	7.19	7.19	0.00	1
392.33	8.99	8.99	0.00	1
392.55	10.79	10.79	0.00	1
392.78	12.59	12.59	0.00	1
393.08	14.38	14.38	0.00	1
393.39	16.02	16.02	0.00	1
393.80	17.98	17.98	0.00	1
396.00	27.06	27.06	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing 37

Total Rating Curve

Crossing: Crossing 37

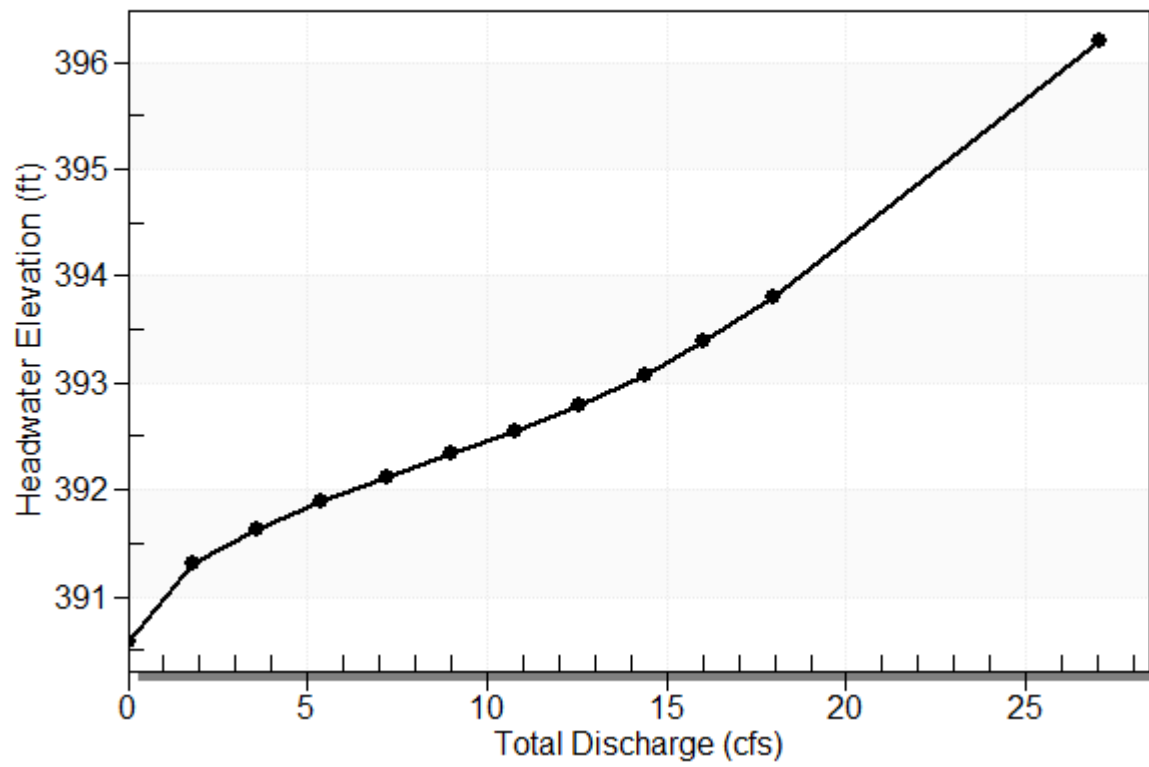
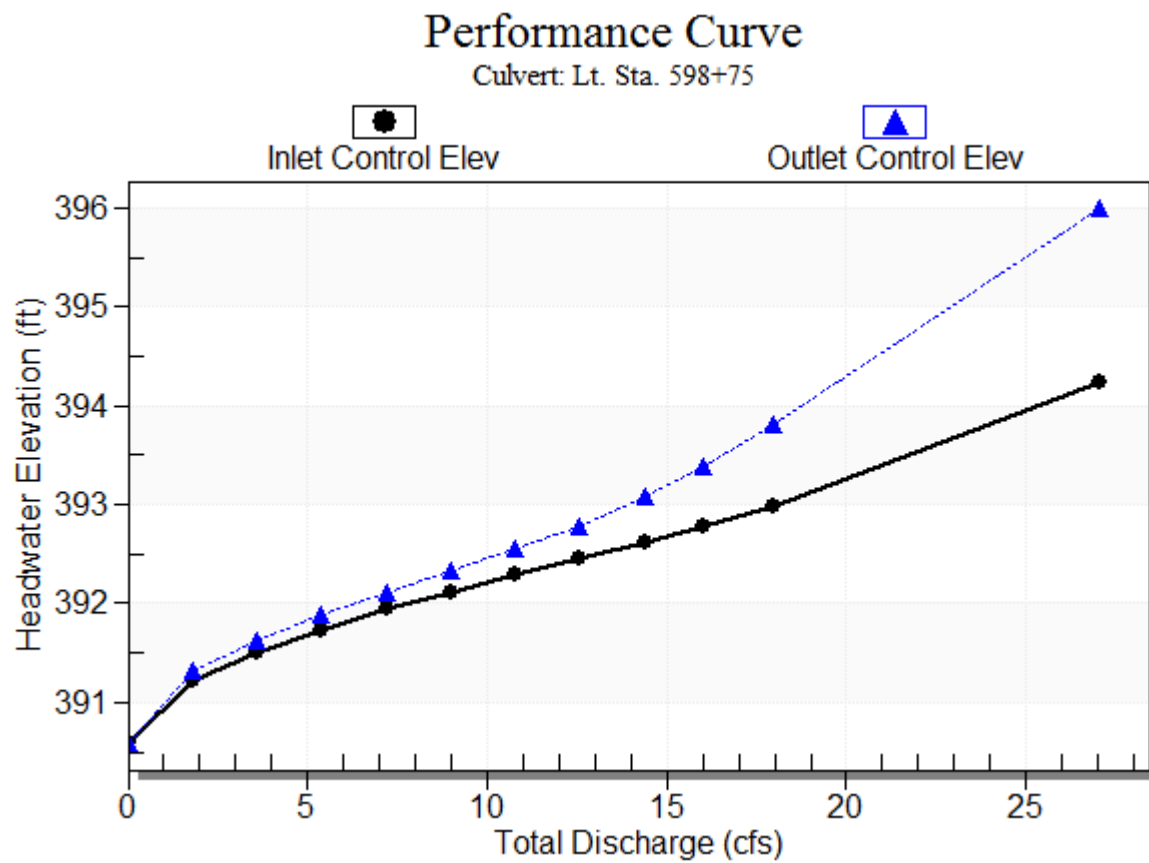


Table 2 - Culvert Summary Table: Lt. Sta. 598+75

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	390.59	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
1.80	1.80	391.32	0.627	0.726	3-M2t	0.658	0.462	0.578	0.578	2.388	1.792
3.60	3.60	391.63	0.906	1.039	3-M2t	0.968	0.658	0.750	0.750	3.342	2.131
5.39	5.39	391.88	1.143	1.294	3-M2t	1.245	0.816	0.873	0.873	4.094	2.359
7.19	7.19	392.11	1.349	1.524	3-M2t	1.558	0.952	0.973	0.973	4.745	2.535
8.99	8.99	392.33	1.531	1.744	2-M2c	2.000	1.068	1.068	1.057	5.267	2.680
10.79	10.79	392.55	1.699	1.962	2-M2c	2.000	1.174	1.174	1.132	5.627	2.805
12.59	12.59	392.78	1.864	2.195	7-M2c	2.000	1.273	1.273	1.200	5.964	2.915
14.38	14.38	393.08	2.032	2.485	7-M2c	2.000	1.363	1.363	1.261	6.309	3.014
16.02	16.02	393.39	2.193	2.804	7-M2c	2.000	1.438	1.438	1.313	6.625	3.097
17.98	17.98	393.80	2.400	3.211	7-M2c	2.000	1.526	1.526	1.371	6.993	3.187

Straight Culvert
Inlet Elevation (invert): 390.59 ft, Outlet Elevation (invert): 390.41 ft
Culvert Length: 188.20 ft, Culvert Slope: 0.0010

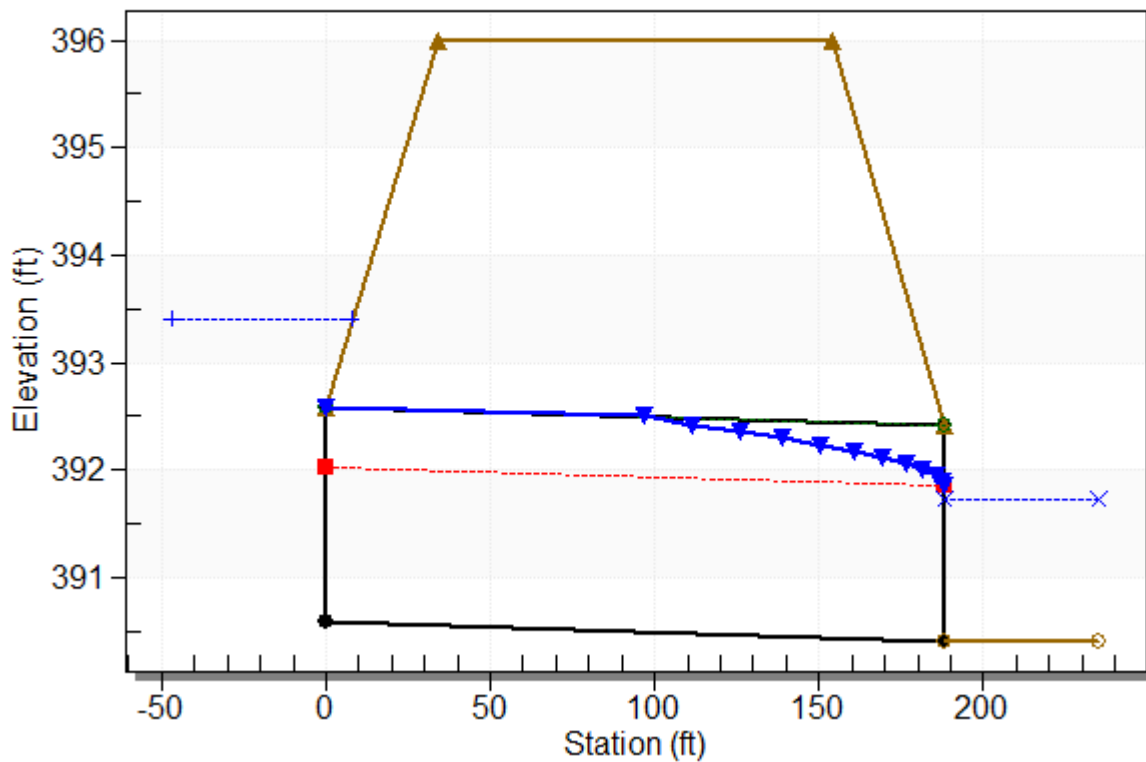
Culvert Performance Curve Plot: Lt. Sta. 598+75



Water Surface Profile Plot for Culvert: Lt. Sta. 598+75

Crossing - Crossing 37, Design Discharge - 16.0 cfs

Culvert - Lt. Sta. 598+75, Culvert Discharge - 16.0 cfs



Site Data - Lt. Sta. 598+75

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 390.59 ft

Outlet Station: 188.20 ft

Outlet Elevation: 390.41 ft

Number of Barrels: 1

Culvert Data Summary - Lt. Sta. 598+75

Barrel Shape: Circular

Barrel Diameter: 2.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Grooved End in Headwall

Inlet Depression: NONE

Table 3 - Downstream Channel Rating Curve (Crossing: Crossing 37)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	390.41	0.00	0.00	0.00	0.00
1.80	390.99	0.58	1.79	0.36	0.59
3.60	391.16	0.75	2.13	0.47	0.61
5.39	391.28	0.87	2.36	0.54	0.63
7.19	391.38	0.97	2.53	0.61	0.64
8.99	391.47	1.06	2.68	0.66	0.65
10.79	391.54	1.13	2.81	0.71	0.66
12.59	391.61	1.20	2.92	0.75	0.66
14.38	391.67	1.26	3.01	0.79	0.67
16.02	391.72	1.31	3.10	0.82	0.67
17.98	391.78	1.37	3.19	0.86	0.68

Tailwater Channel Data - Crossing 37

Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 3.00 (1:1)

Channel Slope: 0.0100

Channel Manning's n: 0.0350

Channel Invert Elevation: 390.41 ft

Roadway Data for Crossing: Crossing 37

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 100.00 ft

Crest Elevation: 396.00 ft

Roadway Surface: Paved

Roadway Top Width: 120.00 ft