

HY-8 Culvert Analysis Report

Crossing Discharge Data

Discharge Selection Method: User Defined

Site Data - Invert Lining

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 0.58 ft

Outlet Station: 139.15 ft

Outlet Elevation: -0.53 ft

Number of Barrels: 1

Culvert Data Summary - Invert Lining

Barrel Shape: User Defined

Barrel Span: 15.00 ft

Barrel Rise: 14.58 ft

Barrel Material: Corrugated Metal Riveted or Welded

Embedment: 0.00 in

Barrel Manning's n: 0.0240 (top and sides)

Manning's n: 0.0120 (bottom)

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: None

Tailwater Channel Data - Invert Lining- Low Tide Elevations

Tailwater Channel Option: Enter Rating Curve

Channel Invert Elevation: -3.00 ft

Roadway Data for Crossing: Invert Lining- Low Tide Elevations

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 50.00 ft

Crest Elevation: 28.00 ft

Roadway Surface: Paved

Roadway Top Width: 36.00 ft

Table 1 - Summary of Culvert Flows at Crossing: Invert Lining- Low Tide Elevations

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Invert Lining Discharge (cfs)	Roadway Discharge (cfs)	Iterations
2.99	Q1.1	78.80	78.80	0.00	1
5.46	Q10	323.20	323.20	0.00	1
6.20	Q25	424.20	424.20	0.00	1
6.68	Q50	494.30	494.30	0.00	1
7.23	Q100	579.00	579.00	0.00	1
8.57	Q500	779.50	779.50	0.00	1
28.00	Overtopping	3253.35	3253.35	0.00	Overtopping

Table 2 - Culvert Summary Table: Invert Lining

Discharge Names	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)
Q1.1	78.80	78.80	2.99	2.408	0.0*	1-S2n	1.311	1.846	1.410	1.320	9.109	0.000
Q10	323.20	323.20	5.46	4.878	2.803	1-S2n	2.601	3.789	2.961	1.320	12.713	0.000
Q25	424.20	424.20	6.20	5.625	3.446	1-S2n	2.973	4.342	3.437	1.320	13.493	0.000
Q50	494.30	494.30	6.68	6.102	3.873	1-S2n	3.204	4.693	3.736	1.320	13.974	0.000
Q100	579.00	579.00	7.23	6.645	4.386	1-S2n	3.470	5.098	4.073	1.320	14.504	0.000
Q500	779.50	779.50	8.57	7.987	5.581	1-S2n	4.032	5.970	4.813	1.320	15.540	0.000

* Full Flow Headwater elevation is below inlet invert.

Straight Culvert

Inlet Elevation (invert): 0.58 ft, Outlet Elevation (invert): -0.53 ft

Culvert Length: 139.15 ft, Culvert Slope: 0.0080

Table 3 - Downstream Channel Rating Curve (Crossing: Invert Lining- Low Tide Elevations)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)
78.80	-1.68	1.32	0.00
323.20	-1.68	1.32	0.00
494.30	-1.68	1.32	0.00
579.00	-1.68	1.32	0.00
779.50	-1.68	1.32	0.00