

# Flow Modeling of 60" Low Flow Culvert

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(2 Pages)

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Carlson Hydrology 2016 Culvert Design

Coyote Creek Shop Access Road Low Flow 60" CMP Rating Table:

Location: SW¼ Section 30 T143N R88W Mercer County, ND

Assume Inlet Control:

Headwater (ft)	Tailwater (ft)	Exit Flow Depth (ft)	Control Type	Discharge (cfs)	Exit Velocity (ft/s)
0.00	1890.36	0.00		0.00	0.00
1891.38	1890.36	3.00	Inlet Control, Unsubmerged	25.00	2.03
1892.26	1890.36	3.00	Inlet Control, Unsubmerged	50.00	4.06
1893.01	1890.36	3.00	Inlet Control, Unsubmerged	75.00	6.10
1893.70	1890.36	3.00	Inlet Control, Unsubmerged	100.00	8.13
1894.38	1890.36	3.20	Inlet Control, Unsubmerged	125.00	9.42
1895.07	1890.36	3.51	Inlet Control, Unsubmerged	150.00	10.18
1895.95	1890.36	3.79	Inlet Control, Unsub/Submerged	175.00	10.95
1896.87	1890.36	4.04	Inlet Control, Submerged	200.00	11.77
1897.00	1890.36	4.22	Inlet Control, Submerged	221.29	12.52

Assume Outlet Control:

Headwater (ft)	Tailwater (ft)	Exit Flow Depth (ft)	Control Type	Discharge (cfs)	Exit Velocity (ft/s)
0.00	1892.36	0.00		0.00	0.00
1891.38	1892.36	5.00	Inlet Control, Unsubmerged	25.00	1.27
1892.26	1892.36	5.00	Inlet Control, Unsubmerged	50.00	2.55
1893.01	1892.36	5.00	Inlet Control, Unsubmerged	75.00	3.82
1893.70	1892.36	5.00	Inlet Control, Unsubmerged	100.00	5.09
1894.38	1892.36	5.00	Inlet Control, Unsubmerged	125.00	6.37
1895.07	1892.36	5.00	Inlet Control, Unsubmerged	150.00	7.64
1895.95	1892.36	5.00	Inlet Control, Unsub/Submerged	175.00	8.91
1896.87	1892.36	5.00	Inlet Control, Submerged	200.00	10.19
1897.51	1892.36	5.00	Inlet Control, Submerged	215.63	10.98

Coyote Creek Access Road 60" Low Flow Culvert Design

Design Parameters

Section

Shape:

Circular

Material:

Corrugated Metal

Diameter:

60.00 in

Manning's n: 0.0250  
Number of Barrels: 1

Inlet

Inlet Type: 33.7° Bevels  
Ke: 0.2

Inverts

Inlet Invert Elevation: 1889.510 ft  
Outlet Invert Elevation: 1887.360 ft  
Length: 260.000 ft  
Slope: 0.83 %

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