BF 72707 Hwy 49 Over Spirit River Tributary
Hydrotechnical Summary

Channel Capacity :

S = 0.003
B = 4 m, h = 3 m, T_h = 10 m
Use n = 0.05

At Bank Height : Y = 3.0 m, V = 1.5 m/s, Q = 32 cms
At Channel Capacity : Y = 4.0 m, V = 2.1 m/s, Q = 65 cms

Historical Highwater Data :

HW was observed at this site in June 1963 (Y = 2.5m), July 1964 (1.1m above u/s and d/s crown), June 1968 (extensive d/s scour), April 1974 (d/s barrel exposed), August 1982 (1/2 full at inlet, 0.5m below d/s crown), and June 1990 (Y = 4.4m u/s of pipe). The current crossing was designed for Q = 70cms and Y = 2.6m. The channel has changed considerably due to drainage works and many repairs to the structure have been done.

There are no WSC gauges on this stream. Gauges in the area suggest HW events in June 1968 and June 1990. The largest storms for this area in the storm database are about 110 mm of rainfall in July 1935, August 1982, and June 1990.

Basin Runoff Potential :

d = 60 mm, T_p = 20 hrs, q = 0.83 cms/km^2.
Gross DA = 115 km^2.
Q_p = 95 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations and is within the basin runoff potential.

Recommended parameters : Y = 4.0 m, V = 2.1 m/s, Q = 65 cms.