BF 13988 Local Road Over Spirit River Tributary
Hydrotechnical Summary

Channel Capacity :

S = 0.003
B = 4 m, h = 3 m, T_h = 11 m
Use n = 0.05

At Bank Height : Y = 3.0 m, V = 1.6 m/s, Q = 35 cms
At Channel Capacity : Y = 4.0 m, V = 2.1 m/s, Q = 70 cms

Historical Highwater Data :

HW was observed in April 1974 with water over the road, uplift failure at the inlets, and extensive d/s erosion. A 1952 report notes a HWM with Y = 3.3m. A 1999 design was based on Q = 47cms and Y = 2.4m. A slide occurred in the d/s embankment in 1996 exposing much of the barrels.

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 = 131 km^2.
Q_p = 110 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 = 70 cms.