BF 02271 Local Road Over Little Red Deer River Tributary
Hydrotechnical Summary

Channel Capacity :

S = 0.018
B = 2 m, h = 1 m, T_h = 4 m
Use n = 0.055

At Bank Height : Y = 1.0 m, V = 1.8 m/s, Q = 5 cms
At Channel Capacity : Y = 1.5 m, V = 2.6 m/s, Q = 12 cms

Historical Highwater Data :

A 1955 report notes a HWM with Y = 1.5m and estimates Q = 6cms. There is a reference to an event in 1998 where the culvert was blocked (due to struts) with significant ponding u/s and a scour hole formed d/s. A 1980 note states that the existing 1.8m pipe was considered adequate for flow and that extension for road upgrade was feasible.

There are no WSC gauges on this stream. Gauges in the area suggest HW events in June 1972, April 1974, July 1981, July 1986, June 1990, July 1992, July 1998, and July 1999. The largest storms in the database for this area are in June 1928 with 130mm of rainfall and in May 1923, June 1970, and July 1966 with about 110mm.

Basin Runoff Potential :

d = 40mm, T_p = 20hrs, q = 0.55 cms/km^2.
DA = 14 km^2.
Q_p = 8 cms.

Conclusion :

Basin runoff potential governs for this site and is consistent with historic observations.

Recommended parameters : Y = 1.2 m, V = 2.1 m/s, Q = 8 cms.