BF 01071 Local Road Over Gros Ventre Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.002
B = 7 m, h = 1.6 m, T_h = 14 m
Use n = 0.045

At Bank Height : Y = 1.6 m, V = 1.1 m/s, Q = 18 cms
At Channel Capacity : Y = 2.4 m, V = 1.5 m/s, Q = 45 cms

Historical Highwater Data :

HW was noted in March 1994 (Chinook – snowmelt) with water 1m over road at low level crossing (Y ~ 2.0m). A 1976 report notes a HWM with Y = 1.8m. Calculations from 1976 note Q = 37cms and Y = 1.8m.

Gauge 05AH037 (DA = 215km^2, 1921 – 1922, 1944 – Now) reports Q ~ 35cms in April 1955 and March 1994, and Q ~ 30cms in April 1948. The rating curve suggests a stage rise of just under 2.0m for Q = 35cms. The largest storms in the storm database are 130mm of rainfall in June 1998 and June 2002.

Basin Runoff Potential :

d = 35 mm, T_p = 40 hrs, q = 0.25 cms/km^2,(use q = 0.3cms/km^2, Cypress Hills).
Gross DA = 210 km^2.
Q_p = 65 cms.

Conclusion :

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

Recommended parameters : Y = 2.4 m, V = 1.5 m/s, Q = 45 cms.