BF 77878 Hwy 507 Over Crowsnest River
Hydrotechnical Summary

Channel Capacity :

S = 0.0045
B = 20 m, h = 2 m, T_h = 45 m
Use AT equation

At Bank Height : Y = 2 m, V = 2.1 m/s, Q = 130 cms
At Channel Capacity : Y = 3 m, V = 2.9 m/s, Q = 320 cms

Historical Highwater Data :

HW was observed in 1923 (Y ~ 2.5m), and June 1995 (Y ~ 2.5 – 3m). The 1974 design was based on Y ~ 2.5m (Q ~ 170cms).

WSC Gauge 05AA002 (DA ~ 680km^2, 1908 – 1931) reports Q ~ 175cms in June 1923. WSC Gauge 05AA008 (DA ~ 400km^2, 1910 – 1920, 1949 – Now) reports Q ~ 135cms in June 1995 (gauged at Q ~ 60cms), and Q ~ 70cms in June 1953 and 1965.

Basin Runoff Potential :

d = 80-100 mm, T_p = 20 hrs, q = 1.25 cms/km^2.
Gross DA = 580 km^2.
Q_p = 720 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations. Recommended parameters :

Y = 3.0 m, V = 2.9 m/s, Q = 320 cms.
EL 1190.0 m (6559-P)