BF 81131 Hwy 507 Over Castle River
Hydrotechnical Summary

Channel Capacity :

S = 0.0045
B = 40 m, h = 4.0 m, T_h = 70 m
Use AT equation

At Bank Height : Y = 4 m, V = 3.5 m/s, Q = 750 cms
At Channel Capacity : Y = 5 m, V = 4.2 m/s, Q = 1200 cms

Historical Highwater Data :

HW was observed in June 1995 (to top of rock, Y ~ 5m). The 1986 design was based on an estimate of the 1975 flood with Y ~ 5m.

WSC Gauge 00AA022 (DA = 820km^2, 1945 – Now) reports Q ~ 1430cms in June 1995 (max. gauging at Q < 600cms, stage rise at peak ~ 5m), Q ~ 750cms (June 1975), and Q ~ 510cms (June 1964). WSC Gauge 00AA028 (DA = 375km^2, 1967 – Now) reports Q ~ 650cms in June 1995 (max. gauging at Q ~ 330cms, stage rise at peak ~ 3.5m) and Q ~ 400cms in June 1975.

Basin Runoff Potential :

d = 100/150 mm, T_p = 20 hrs, q = 1.4 - 2 cms/km^2.
Gross DA = 780 km^2.
Q_p ~ 1400 cms.

Conclusion :

Channel capacity is consistent with historic observations. Recommended parameters :

Y = 5 m, V = 4.2 m/s, Q = 1200 cms.
EL 1216.0 m (12240-P)