BF 2010 Hwy 744 Over Heart River
Hydrotechnical Summary

Channel Capacity :

S = 0.006
B = 20 m, h = 2 m, T_h = 35 m (u/s channel, dyked at bridge)
Use AT equation

At Bank Height : Y = 2 m, V = 2.4 m/s, Q = 130 cms
At Channel Capacity : Y = 3 m, V = 3.4 m/s, Q = 300cms

Historical Highwater Data :

HW was observed in June 1990 (Peace River BW – EL 318.0m), and February 1992 (Peace River Ice Jam BW – EL 319.0m). The 1956 design was based on Y ~ 2.7m (Y ~ 5m for Peace River BW).

WSC gauge 07HA003 (DA = 1960km^2, 1963 – Now) reports Q ~ 170cms (1964, 1965, 1974, and 1997). The highest gauging was at Q ~ 140cms (stage increase ~ 2.8m). WSC gauge 07HA002 (DA = 2250km^2, 1915 – 1921) reports Q ~ 50cms in 1917 and 1919.

Basin Runoff Potential :

Gross DA = 2260 km^2 (beyond range of technique)

Conclusion :

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

Y = 3 m, V = 3.4 m/s, Q = 300 cms.
EL 316.0m (21309-P) – Peace River BW EL 319.0m