BF 08800 Hwy 587 Over Red Deer River
Hydrotechnical Summary

Channel Capacity :

S = 0.003
B = 80 m, h = 3 m, T = 140 m
Use AT equation

At Bank Height : Y = 3 m, V = 2.4 m/s, Q = 800 cms
At Channel Capacity : Y = 4 m, V = 3.1 m/s, Q = 1500 cms

Historical Highwater Data :

HW was noted in 1995 (Y ~ 3m) and 2005. The 1961 design was based on Y ~ 4m (surveyed HWM at Y ~ 3.5m, likely 1954).

WSC Gauges 05CA001 (DA = 2490km^2, 1951 – 1973) and 05CA009 (DA = 2250km^2, 1973 – Now) report Q = 1220cms in June 2005 (stage rise = 3m, large extrapolation of rating curve), and Q = 500 – 700cms in 1970, 1954, 1995, 1965, and 1990. Gauge 05CC002 (DA = 11600km^2, 1913 – Now) reports the largest flow of Q = 1950cms in June 1915, and Q ~ 1500cms in 1954 and 2005 (~20% attenuation from Dickson Dam). Estimated inflow at Dickson Dam (DA ~ 5600km^2) in June 2005 is ~ 2200cms.

Basin Runoff Potential :

DA = 4525 km^2 (exceeds range of basin potential technique).

Conclusion :

Historic observations govern. Recommended parameters :

Y = 4.0 m, V = 3.1 m/s, Q = 1500 cms.
HW EL 1004.5m (Dwg. 3079)