BF 00977 Hwy 11 Over Red Deer River
Hydrotechnical Summary

Channel Capacity :

S = 0.0012
B = 80 m, h = 5 m, T_h = 140 m
Use AT equation

At Bank Height : Y = 5 m, V = 2.4 m/s, Q = 1300 cms
At Channel Capacity : Y = 6 m, V = 2.8 m/s, Q = 1900 cms

Historical Highwater Data :

High Ice has been observed in 1921, 1943, 1952, 1965, 1970, 1973 and 1974. The 1977 design was based on Y = 5.5m and Q ~ 2300cms (1974 high ice estimated to Y ~ 8m).

WSC Gauge 05CC002 (DA = 11,600km^2, 1913 – Now) reports Q ~ 1900cms in June 1915 (gauged at Q ~ 1600cms, stage increase ~ 5m), and Q ~ 1500cms in August 1954 and June 2005 (~20% attenuation from Dickson Dam). Gauge 05CD004 (DA = 15,100km^2, 1944 – 1958) reports Q ~ 1500cms in August 1954.

Basin Runoff Potential :

DA = 13650km^2, beyond range of basin runoff potential technique.

Conclusion :

Historic observations govern. Recommended parameters :

Y = 6 m, V = 2.8 m/s, Q = 2000 cms.
HW EL 806.0 m (Dwg. 7400-P)