BF 01980 Hwy 27 Over Red Deer River
Hydrotechnical Summary

Channel Capacity :

S = 0.004
B = 50 m, h = 3.0 m, T = 100 m
Use AT equation

At Bank Height : Y = 3.0 m, V = 2.6 m/s, Q = 600 cms
At Channel Capacity : Y = 4.0 m, V = 3.4 m/s, Q = 1100 cms

Historical Highwater Data :

HW was noted in 1912 (washout), 1915 (washout), 1917 (ice run), 1929, 1952 (approach washout), 1954, 1965 (EL. 1090.6m), 1970, 1972, 1999, and 2005 (EL. 1091.6m). The 1959 design was based on EL. 1091.6m (Y ~ 4m).

WSC Gauge 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, with other large events in 1923, 1928, 1929, and 1932.

Basin Runoff Potential :

DA = 3220 km^2, exceeds range of method

Conclusion :

Historic observations govern. Recommended parameters :

Y = 4.0 m, V = 3.4 m/s, Q = 1100 cms.
HW EL 1091.5m (Dwg. 2255)