BF 81555 Hwy 3 Over Oldman River
Hydrotechnical Summary

Channel Capacity:

S = 0.0012
B = 110 m, h = 5.5 m, T_h = 160 m
Use AT equation

At Bank Height: Y = 5.5 m, V = 2.7 m/s, Q = 2000 cms
At Channel Capacity: Y = 6.5 m, V = 3.0 m/s, Q = 2700 cms

Historical Highwater Data:

HW has been observed at BF00887 just u/s in 1908 (Y ~ 5.5m), 1953 (Y ~ 5.5m), 1975 (Y ~ 5m), 1986 (Ice Jam, Y ~ 6m), 1995 (Y ~ 7m), and 2005 (Y ~ 5.5m).

The 1995 design was based on Y ~ 7m and Q ~ 3000cms.

Gauge 05AD019 (DA = 8880 km^2, 1948 – 1969) reports
Q ~ 1540 cms in 1953

Gauge 05AA024 (DA = 4400 km^2, 1966 – Now, 1995 peak missing – est. dam outflow Q ~ 2700cms by AENV) reports
Q ~ 1560 cms in 1975
Q missing record in 1995
Q ~ 1110 cms in 2005
Q ~ 1330 cms in 2013

Gauge 05AB007 (DA = 5760 km^2, 1910 – 1948) reports
Q ~ 1990 cms in 1923
Q ~ 1060 cms in 1942
Q ~ 1100 cms in 1948

Major inflow between 05AB007 and 05AD019 is Willow Ck with Q ~ 600cms, resulting in little change in peak flow due to attenuation and timing.

Basin Runoff Potential:

Gross DA = 9150 km^2, runoff potential is not applicable

Conclusion:

Historic observations govern. Recommended parameters:

Y = 7.0 m, V = 3.2 m/s, Q = 3100 cms.
HW EL 890.0m (Dwg. 16241)