BF 78055 Hwy 509 Over Oldman River
Hydrotechnical Summary

Channel Capacity:

S = 0.0012
B = 130 m, h = 6 m, T_h = 180 m
Use AT equation

At Bank Height: Y = 6.0 m, V = 2.9 m/s, Q = 2600 cms
At Channel Capacity: Y = 7.0 m, V = 3.2 m/s, Q = 3600 cms

Historical Highwater Data:

HW has been observed in 1995 (EL 868.0m, Y ~ 7.5m above mean surveyed bed, damage to protection works), and 2005.

The 1985 design was based on Y ~ 8.5 m and Q ~ 4500 cms.

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

Gauge 05AD007 (DA ~ 17000 km^2, 1911 – Now) reports
Q ~ 4670 cms in 1995
Q ~ 2400 – 3200 cms in 1923, 1942, 1948, 1953, 1975, 2005 and 2014

Major inflow between 05AD019 and BF78055 is Waterton River with Q ~ 1500 cms (1975, 1995).

Major inflow between 05AD007 and BF78055 is St. Mary River with Q ~ 700 cms (1975, 1995).

Basin Runoff Potential:

Gross DA = 12630 km^2, runoff potential is not applicable

Conclusion:

Historic observations govern. Recommended parameters:

Y = 8.0 m, V = 3.5 m/s, Q = 4500 cms.
Design HWL 870.6 m (Dwg. 10878, M-78055-99-A for bed survey)

Classification: Protected A