BF 78131 Hwy 43 Over Pembina River
Hydrotechnical Summary

Channel Capacity :

S = 0.0004
B = 70 m, h = 6.5 m, T_h = 100 m
Use AT equation

At Bank Height : Y = 6.5 m, V = 1.9 m/s, Q = 1000 cms
At Channel Capacity : Y = 7.5 m, V = 2.2 m/s, Q = 1400 cms

Historical Highwater Data :

The 2004 design was based on Y ~ 8m, with high ice at Y ~ 7.5m.

WSC Gauge 07BB002 (1914 – 1923, 1955 – Now, DA = 4420 km^2) reports Q = 1250cms in 1986 (gauged at Q = 850cms, 5m stage rise). WSC gauge 07BC002 (1957 – Now, DA = 13100 km^2) reports Q ~ 1000cms in April 1974 and July 1986, with a stage rise of ~ 7m.

Basin Runoff Potential :

Gross DA = 6770 km^2 (exceeds range of application of runoff depth method)

Conclusion :

Historical observations govern. Recommended parameters :

Y = 8.0 m, V = 2.3 m/s, Q = 1600 cms
EL 664.5 m (20397-P)