BF 74969 Hwy 621 Over Pembina River
Hydrotechnical Summary

Channel Capacity :

S = 0.0007
B = 50 m, h = 6 m, T_h = 80 m
Use AT equation

At Bank Height : Y = 6. m, V = 2.2 m/s, Q = 900 cms
At Channel Capacity : Y = 7.0 m, V = 2.5 m/s, Q = 1200 cms

Historical Highwater Data :

HW was noted in July 1986 with Y ~ 8m u/s (water over deck at low end, photos show visible headloss, > 0.5m).

WSC gauge 07BA001 (1956 – 1993, DA = 2900 km^2) reports Q = 1100cms (gauged at Q = 600cms, stage rise = 6m) in July 1986. Gauge 07BB002 (1914 – 1923, 1955 – Now, DA = 4420 km^2) reports Q = 1250cms in 1986 (gauged at Q = 850cms, 5m stage rise). Other large events are reported in July 1965, June 1972, June 1980, and July 1982. The storm database notes 150mm (July 1986), 120mm in July 1982, and 105mm in August 1969 and June 1972.

Basin Runoff Potential :

Gross DA = 3450 km^2 (exceeds range of application of runoff depth method)

Conclusion :

Historical observations govern. Recommended parameters :

Y = 7.5m, V = 2.7 m/s, Q = 1350 cms
EL 259.5m (2429-P), EL 830.0m (geodetic, HW mark)