BF 01122 Hwy 11 Over Medicine River
Hydrotechnical Summary

Channel Capacity :

S = 0.00035
B = 18 m, h = 5 m, T_h = 40 m
Use AT equation

At Bank Height : Y = 5 m, V = 1.4 m/s, Q = 200 cms
At Channel Capacity : Y = 6 m, V = 1.6 m/s, Q = 300 cms

Historical Highwater Data :

HW was observed in August 1954, April 1969 (Ice Jam, Y ~ 6m), July 1982 (Y ~ 5.5m), July 1986 (Y ~ 6m), and July 1990 (Y ~ 6m). The 2001 design was based on Y ~ 6m (Q ~ 350cms).

WSC Gauge 05CC007 (DA ~ 1920 km^2, 1960 – Now) reports Q ~ 240 cms (July, 1990, gauged at Q ~ 230cms, stage rise ~ 6m), Q ~ 210cms (July 1986), and Q ~ 160cms (July 1982).

Basin Runoff Potential :

Gross DA = 1835 km^2 (beyond range of technique)

Conclusion :

The channel capacity estimate is consistent with historic observations. Recommended parameters :

Y = 6.0 m, V = 1.6 m/s, Q = 300 cms.
EL 916.5 m (1325-P)