BF 00983 Hwy 766 Over Medicine River
Hydrotechnical Summary

Channel Capacity :

S = 0.00035
B = 15 m, h = 4.5 m, T_h = 30 m
Use AT equation

At Bank Height : Y = 4.5 m, V = 1.3 m/s, Q = 130 cms
At Channel Capacity : Y = 5.5 m, V = 1.6 m/s, Q = 200 cms

Historical Highwater Data :

HW was observed in July 1986 (Y ~ 5.5m), July 1990 (Y ~ 5m), and May 2007 (Y ~ 4m, drift). The 1958 design was based on Y ~ 5.5m.

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 = 1020 km^2 (beyond range of technique)

Conclusion :

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

Y = 5.5 m, V = 1.6 m/s, Q = 200 cms.
EL 922.5 m (2385-P)