BF 02430 Hwy 54 Over Medicine River
Hydrotechnical Summary

Channel Capacity :

S = 0.0003
B = 25 m, h = 4.5 m, T_h = 50 m
Use AT equation

At Bank Height : Y = 4.5 m, V = 1.2 m/s, Q = 210 cms
At Channel Capacity : Y = 5.5 m, V = 1.5 m/s, Q = 320 cms

Historical Highwater Data :

HW was observed in July 1982 (Y ~ 4.5m), July 1986 (Y ~ 5.5m), July 1990 (Y ~ 4.5m), and July 1999 (Y ~ 4.5m). The 1958 design was based on Y ~ 6m.

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 = 2640 km^2 (beyond range of technique)

Conclusion :

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

Y = 5.5 m, V = 1.5 m/s, Q = 320 cms.
EL 898.5 m (3436-P)