BF 02302 Hwy 633 Over Sturgeon River
Hydrotechnical Summary

Channel Capacity :

S = 0.0004
B = 15 m, h = 3.5 m, T_h = 25 m
Use AT equation

At Bank Height : Y = 3.5 m, V = 1.2 m/s, Q = 85 cms
At Channel Capacity : Y = 4.5 m, V = 1.5 m/s, Q = 140 cms

Historical Highwater Data :

HW was observed in April 1974 (Y ~ 5m, includes ~ 0.5m headloss due to drift blockage at railway bridge d/s). The 1980 design was based on Y ~ 5m (Q ~ 140cms).

WSC gauge 05EA005 (DA = 1910km^2, 1914 – 1915, 1928 – 1930, 1968 – Now) reports Q = 140cms in April 1974 (gauged at peak, stage increase ~ 4m), and Q = 100cms in April 1971. Gauge 05EA001 (DA = 3350km^2, 1914 – Now) reports Q = 115cms in April 1974 (gauged at peak, stage increase ~ 2.8m) and Q = 90cms in April 1948.

Basin Runoff Potential :

Gross DA = 1995 km^2 (beyond range of technique)

Conclusion :

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

Y = 4.5 m, V = 1.5 m/s, Q = 140 cms.
EL 660.0 m (8620-P)