BF 06849 Hwy 771 Over Muskeg Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.0015
B = 4 m, h = 2.0 m, T_h = 7 m
Use n = 0.045.

At Bank Height : Y = 2.0 m, V = 1.1 m/s, Q = 12 cms
At Channel Capacity : Y = 3.0 m, V = 1.7 m/s, Q = 30 cms

Historical Highwater Data :

HW was noted in July 1982 to 0.1m below the deck (Y = 3.0m) with estimated Q = 18cms and in July 1990 to 0.6m above the u/s crown and over the grade. Reports from 1954 and 1961 note HWM with Y = 2.1m. The 1988 design was based on Y = 2.4m and Q = 26cms.

WSC gauge 05FA912 (DA = 92km^2, 1982 - 1990) reports HW events in July 1982 (Q = 16cms), July 1986 (Q = 29cms) and July 1990 (Q = 67cms, highest gauging unknown). The 1990 value is likely based on a significant extrapolation, and the gauge stopped reporting right after this event, indicating the possibility of damage. The storm database shows the largest storms to be July 1990 with 135mm of rainfall, and July 1982 with 115mm.

Basin Runoff Potential :

d = 60 mm, T_p = 20 hrs, q = 0.83 cms/km^2.
Gross DA = 60 km^2.
Q_p = 50 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations and is within the basin runoff potential.

Recommended parameters : Y = 3.0 m, V = 1.7 m/s, Q = 30 cms.