BF 02397 Local Road Over Atim Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.002
B = 4 m, h = 1.6 m, T_h = 8 m
Use n = 0.045

At Bank Height : Y = 1.6 m, V = 1.0 m/s, Q = 10 cms
At Channel Capacity : Y = 2.4 m, V = 1.5 m/s, Q = 25 cms

Historical Highwater Data :

A 1951 report notes a HWM with Y = 2.1m and possibly over the grade. A 1994 BIM report notes a HWM with Y = 2.2m. A 1998 assessment notes local information suggesting HW to 0.2m below grade u/s of culvert (Y = 3.4m u/s). The 2000 design was based on Q = 35cms.

Gauge 05EA009 (gross DA = 315 km^2, operating 1979 – 1996) reports Q = 10cms in July 1996 and Q = 7cms in July 1990. Gauges on the Sturgeon River indicate large runoff responses in the spring of 1948 and 1974. The storm database notes large storms in July 1990 (140mm) and July 1986 and July 1982 (120mm).

Basin Runoff Potential :

d = 40mm, T_p = 20hrs, q = 0.55 cms/km^2.
Gross DA = 264 km^2.
Q_p = 145 cms.

Conclusion :

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

Recommended Parameters : Y = 2.4 m, V = 1.5 m/s, Q = 25 cms.