BF 08745 Hwy 44 Over Atim Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.00035
B = 8 m, h = 2.0 m, T_h = 15 m
Use n = 0.04

At Bank Height : Y = 2.0 m, V = 0.6 m/s, Q = 15 cms
At Channel Capacity : Y = 3.0 m, V = 0.8 m/s, Q = 35 cms

Historical Highwater Data :

HW was noted in Spring 1972 (Y = 2.5m, over approaches), and April 1974 (Y = 3.1m, likely BW influence from Big Lake). A 1995 BIM report notes a HWM with Y = 1.5m. The 1996 design was based on Y = 3.5m and Q = 90cms (based on statistical extrapolation).

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 = 450 km^2.
Q_p = 250 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations and is within the basin runoff potential. Higher elevations may occur due to BW from Big Lake.

Recommended Parameters : Y = 3.0 m, V = 0.8 m/s, Q = 35 cms.