BF 70605 Local Road Over Poplar Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.004
B = 7 m, h = 2.2 m, T = 12 m
Use n = 0.045

At Bank Height : Y = 2.2 m, V = 1.9 m/s, Q = 40 cms
At Channel Capacity : Y = 3.2 m, V = 2.6 m/s, Q = 85 cms

Historical Highwater Data :

Reports from 1955 and 1957 refer to a HWM with Y = 2.4m. Significant scour occurred d/s of the 3.0m culvert between 1959 and 1967. A photo from Jan. 1990 shows drift about 1.0m below the u/s crown (Y = 2.5 - 3.0m u/s).

WSC gauge 05DE008 (DA = 374km^2) has no flow records. Gauge 05DE911 (DA = 1170km^2, 1996 – Now) reports the highest flow at Q = 300cms in July 2001. Other gauges in the area have noted HW in June 1965, April 1974, and July of 1982, 1986, and 1990. The largest storms in the storm database are July 1982, 1986 and 1990 with about 130 – 140mm of rainfall.

Basin Runoff Potential :

d = 70mm, T_p = 20hrs, q = 1.0 cms/km^2.
Gross DA = 85 km^2.
Q_p = 85 cms.

Conclusion :

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

Recommended parameters : Y = 3.2 m, V = 2.6 m/s, Q = 85 cms.