BF 70316 Hwy 36 Over Beaver River
Hydrotechnical Summary

Channel Capacity :

S = 0.00035
B = 6 m, h = 1.5 m, T_h = 10 m
Use n = 0.04

At Bank Height : Y = 1.5 m, V = 0.5 m/s, Q = 6 cms
At Channel Capacity : Y = 2.3 m, V = 0.7 m/s, Q = 15 cms

Historical Highwater Data :

A 1958 report notes a HWM with Y = 1.2m (over grade) and estimates Q = 7cms. The 1979 design was based on Y = 2.3m and Q = 42cms.

Gauge 06AA001 (DA~4700 km^2, 1968 – Now) reports Q = 150cms in April 1974 (gauged at Q = 142cms, stage rise = 3.7m), Q = 130cms in April 1971, and Q = 95cms in June 1978. Gauge 06AD006 (DA = 14500km^2, 1956 – Now) was gauged at Q = 623cms (stage rise = 6.9m) in June 1962. Gauge 06AA003 is located on Beaver Lake u/s (DA = 330 km^2), but only recorded levels in 1978 and 1979. The storm database indicates that the largest storms on record are in June 1973, July 1983, June 1970, and June 1962 with about 100mm of rainfall.

Basin Runoff Potential :

d = 40 mm, T_p = 20 hrs, q = 0.55 cms/km^2.
Gross DA = 440 km^2.
Q_p = 240 cms.

Conclusion :

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

Recommended parameters : Y = 2.3 m, V = 0.7 m/s, Q = 15 cms.