BF 71801 Hwy 36 Over Beaver River
Hydrotechnical Summary

Channel Capacity :

S = 0.00025
B = 10 m, h = 1.8 m, T_h = 16 m
Use AT equation

At Bank Height : Y = 1.8 m, V = 0.7 m/s, Q = 15 cms
At Channel Capacity : Y = 2.7 m, V = 0.9 m/s, Q = 35 cms

Historical Highwater Data :

HW was noted in July 1970 with Y = 2.2m. The 1984 design was based on Y = 2.9m and Q = 55cms.

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 = 965 km^2.
Q_p = 530 cms.

Conclusion :

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

Recommended parameters : Y = 2.7 m, V = 0.9 m/s, Q = 35 cms.