BF 09495 Local Road Over Blindman River
Hydrotechnical Summary

Channel Capacity :

S = 0.0006
B = 22 m, h = 5.0 m, T_h = 40 m
Use AT equation

At Bank Height : Y = 5.0 m, V = 1.8 m/s, Q = 275 cms
At Channel Capacity : Y = 6.0 m, V = 2.1 m/s, Q = 400 cms

Historical Highwater Data :

HW has been observed at this site in July 1982 (1.2m below deck, Y = 4.0m, south abutment washed out) and July 1990 (1.0m above deck, Y = 6.2m, likely backwater due to superstructure in water, roadway erosion to east, partial washout at west abutment). A 1922 cross section notes a HWM at Y = 4.4m, and recent BIM reports note HWM with Y = 5.4m (1994) and Y = 6.8m (2000) with no descriptions provided.

WSC gauge 05CC008 (DA = 352km^2, 1965 – Now) reports Q = 330cms in July 1990, with other large events in July of 1981, 1982, and 1986 (190 – 230cms). The rating curve shows a stage rise of just under 5m for the July 1990 event, with Q based on extrapolation (highest gauged event Q = 114cms, Y = 2.5m) and may be in the 260 – 300cms range. Gauge 05CC001 (DA = 1790km^2, 1916 – 1922, 1962 - Now) reports Q = 395cms in July 1990. The largest storm in the database for this area is July 1990 with 120mm of rainfall (centred over upper basin), followed by July 1982 and 1986 with about 110mm.

Basin Runoff Potential :

d = 60 mm, T_p = 20 hrs, q = 0.83 cms/km^2.
Gross DA = 1025 km^2.
Q_p = 850 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations (except 1990 which likely included headloss through the structure) and is within the basin runoff potential.

Recommended parameters : Y = 6.0 m, V = 2.1 m/s, Q = 400 cms.