BF 73366 Local Road Over Callum Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.002
B = 4 m, h = 1.8 m, T_h = 9 m
Use AT equation

At Bank Height : Y = 1.8 m, V = 1.1 m/s, Q = 12 cms
At Channel Capacity : Y = 2.7 m, V = 1.6 m/s, Q = 30 cms

Historical Highwater Data :

HW was noted in July 1963 (Y = 1.5m near the u/s invert, scour hole d/s but no rock was present). Reports from 1952 and 1958 note HWM over the grade (Y ~ 2.5m u/s of bridge) and estimate Q = 10 – 16cms. The 1986 design was based on Y = 1.9m and Q = 26cms. A 1992 BIM report notes a HWM with Y = 1.6m. HW was noted at BF71543 d/s in June 1953.

Gauge 05AA029 (DA = 189 km^2) is on this stream, but was only in operation in 1973 with no significant flood data. Gauge 05AA023 (DA = 1440km^2, 1950 – Now) suggests HW events in June 1953, June 1975, and June 1995. The largest storms in the storm database are about 180mm in June 2002, about 140mm in May 1923, and about 130mm in August 1976.

Basin Runoff Potential :

d = 100 mm, T_p = 20 hrs, q = 1.4 cms/km^2.
Gross DA = 50 km^2.
Q_p = 70 cms.

Conclusion :

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

Recommended parameters : Y = 2.7 m, V = 1.6 m/s, Q = 30 cms.