BF 01279 Hwy 21 Over Ghostpine Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.0008
B = 4 m, h = 2.0 m, T_h = 8 m
Use n = 0.045

At Bank Height : Y = 2.0 m, V = 0.7 m/s, Q = 9 cms
At Channel Capacity : Y = 3.0 m, V = 1.1 m/s, Q = 21 cms

Historical Highwater Data :

HW was noted in April 1951 with water just over the u/s crown and just below the d/s crown (Y = 2.1m), and in April 1952 with a washout of the culvert. The pipe was running ¾ full before water suddenly rose over the road (suggesting blockage from uplift failure at inlet). Flow was estimated at Q = 28cms. A 2000 design was based on Y = 2.8m and Q = 75cms.

WSC gauge 05CE012 (DA = 518km^2, 1967 – 1969) reports Q = 31cms in April 1969 (no rating curve or gauging data available). Other gauges in the area suggest HW events in April 1969, 1971, 1974, 1996, and 1997. There are no storms in the database for this area that exceed 100mm of rainfall.

Basin Runoff Potential :

d = 35mm, T_p = 40hrs, q = 0.25 cms/km^2.
Gross DA = 510 km^2.
Q_p = 128 cms.

Conclusion :

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

Recommended parameters : Y = 3.0 m, V = 1.1 m/s, Q = 21 cms.