BF 06565 Hwy 21 Over Kneehills Ck
Hydrotechnical Summary

Channel Capacity:

S = 0.0018
B = 15 m, h = 4.0 m, T_h = 26 m
Use AT equation

At Bank Height: Y = 4.0 m, V = 2.4 m/s, Q = 200 cms
At Channel Capacity: Y = 5.0 m, V = 2.9 m/s, Q = 310 cms

Historical Highwater Data:

The bridge at this site was washed out in 1916. A 1958 note refers to the 1952 flood with Y = 5 – 5.4 m u/s and d/s of this site. There were several scour related repairs at this site in the 1960's and 1970's.

WSC Gauge 05CE002 (DA = 2430 km^2, 1921 – 1930, 1957 – Now) is located approx. 26 km (straight distance) east of the bridge site d/s. High flow events occurred mostly in March and April for this site. 1966, 1971, 1974, 1997, 2011, 2013, 2014 and 2018 reported Q above 100 cms. At present, the highest flow of 163 cms was recorded on April 9, 2014. The flow of 151 cms was recorded on April 24, 2018.

Bridge design HW Elev. = 794.3 m (i.e 2606' from DD-204)

The largest rainstorm for this area in the storm database is about 100 mm of rainfall in June 1928 and 1970.

Basin Runoff Potential:

Gross DA approx. 2080 km^2 at the bridge site, beyond range of method.

Conclusion:

The channel capacity estimate is consistent with historic observations.

Recommended parameters: Y = 5.0 m, V = 2.9 m/s, Q = 310 cms.