BF 00826 Highway 4 Over Kip Coulee
Hydrotechnical Summary

Channel Capacity :

S = 0.0012
B = 3.5 m, h = 2 m, Th = 8m
Use n = 0.05
(upstream natural channel)

At Bank Height : Y = 2 m, V = 0.8 m/s, Q = 9 cms
At Channel Capacity : Y = 3 m, V = 1.2 m/s, Q = 25 cms

S = 0.0019
B = 6 m, h = 3 m, T_h = 24 m
Use n = 0.045
(diversion channel)

At Bank Height : Y = 3 m, V = 1.4 m/s, Q = 65 cms
At Channel Capacity : Y = 4 m, V = 1.9 m/s, Q = 130 cms

Historical Highwater Data :

The 1998 design was based on Q~32cms (V~1.3m/s).

This stream is ungauged. Nearby WSC Gauges suggest high flow events in 2002, 1996, and 2005.

The storm on basin tool reports large rainfall events in June 2002 (130mm), June 1963 (110mm), and June 1908 (110mm).

Basin Runoff Potential :

d=35mm, Tp = 40 hrs, q = 0.24 cms/km^2 (snowmelt)
Gross DA= 180 km^2
Qp= 45 cms

Conclusion :

The natural channel capacity values are within the basin runoff potential; applying these to the diversion channel gives :

Y=2m, V=1.1m/s, Q=25cms