BF 74348 Hwy 16 Over Hardisty Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.022
B = 5 m, h = 1.0 m, T_h = 10 m
Use n = 0.06

At Bank Height : Y = 1.0 m, V = 1.9 m/s, Q = 15 cms
At Channel Capacity : Y = 1.5 m, V = 2.7 m/s, Q = 35 cms

Historical Highwater Data :

HW was noted in June 1954 (5' above u/s crown at railway crossing, Q ~ 30cms if no blockage) and in August 1969 (drift blockage, outlet scour and erosion, photo suggest HWM ~1m > u/s crown (Q ~ 30cms if no blockage)). A 1954 report and the 1986 design estimates Q = 28cms, and a 2000 assessment estimates Q = 30cms.The u/s channel was straightened and rock was added to a wingwall in 1960, rock was added d/s due to a hanging outlet in 1968, outlet scour was noted in 1969, and d/s scour was repaired in 1986, and a 2006 inspection notes that there is still a hanging outlet.

There are no WSC Gauges on this stream. Gauges in the area suggest HW events in August 1969, June 1972, June 1980, and July 1999. April 1971, April 1974, April and July 1982, July 1986, July 1990, and April 1997. The largest storms in the storm database are about 130mm of rainfall in June 1965 and July 1999.

Basin Runoff Potential :

d = 90 mm, T_p = 20 hrs, q = 0.1.25 cms/km^2.
Gross DA = 53 km^2.
Q_p = 65 cms.

Conclusion :

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

Recommended parameters : Y = 1.5 m, V = 2.7 m/s, Q = 35 cms.