# BF 75701 Hwy 41 Over Red Deer River
# Hydrotechnical Summary

**Channel Capacity** :

S = 0.0003
B = 130 m, h = 4 m, $T_h$ = 200 m
Use AT equation

At Bank Height : Y = 4 m, V = 1.2 m/s, Q = 800 cms
At Channel Capacity : Y = 5 m, V = 1.5 m/s, Q = 1200 cms

**Historical Highwater Data :**

The 1970 design was based on Y ~ 5.5m (estimated 1915), and high ice to Y ~ 7.5m. An event in 1902 may have been higher than 1915.

Gauge 05CK002 (DA = 46800km$^2$, 1917-1936, 1944 – 1960) reports Q ~ 1300cms in 1948 and Q ~ 1200cms in 1952 and 1954, with Q~ 1000cms reported at Gauge 05CK004 in 1990 and 2005. Gauge 05CE001 (DA = 24800km$^2$, 1916 – 1930, 1959 – Now) reports Q ~ 1450cms in 2005 and Q ~ 1200cms in 1920 and 1923. Gauge 05CC002 (DA ~ 11000km$^2$, covers most of flood inflow area) reports an event in 1915 of similar magnitude to 2005 and somewhat higher than 1954.

**Basin Runoff Potential :**

DA = 45825km$^2$, beyond range of runoff depth basin potential.

**Conclusion :**

Historic observations govern. Recommended parameters :

Y = 5.5 m, V = 1.6 m/s, Q = 1500 cms.
HW EL 590.0m (Dwg. 4524-P)