BF 76790 Hwy 49 Over Little Smoky River Tributary
Hydrotechnical Summary

Channel Capacity :

S = 0.0045
B = 2.5 m, h = 1.3 m, T_h = 5 m
Use n = 0.05

At Bank Height : Y = 1.3 m, V = 1.1 m/s, Q = 6 cms
At Channel Capacity : Y = 2.0 m, V = 1.7 m/s, Q = 14 cms

Historical Highwater Data :

A 1967 report notes that the small pipe (capacity = 2 – 3cms) was causing water to flow over a field to the south resulting in scouring, and estimated Q = 10 - 12cms. A note from 2004 states that this structure was lined and additional pipes added to increase the hydraulic capacity (underlying problems not stated), with the new design based on Q = 15cms.

There are no WSC gauges on this stream. Gauges in the area suggest HW events in April 1990, 1994, and 1997. The largest storms for this area in the storm database are about 110mm of rainfall in August 1982 and June 1993.

Basin Runoff Potential :

d = 60 mm, T_p = 20 hrs, q = 0.83 cms/km^2.
Gross DA = 25 km^2.
Q_p = 21 cms.

Conclusion :

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

Recommended parameters : Y = 2.0 m, V = 1.7 m/s, Q = 14 cms.