BF 09836 Hwy 18 Over Wabash Ck Tributary
Hydrotechnical Summary

Channel Capacity:

S = 0.006
B = 1 m, h = 1 m, T_h = 5 m
Use n = 0.05

At Bank Height: Y = 1.0 m, V = 1.0 m/s, Q = 3.1 cms
At Channel Capacity: Y = 1.5 m, V = 1.6 m/s, Q = 8.8 cms

Historical Highwater Data:

A 1951 report estimates Q = 6 cms. A 1974 report notes a HWM with Y = 1.5 m and estimates Q = 8 cms. The 2003 bridge assessment and 2005 preliminary engineering report recommended the design Q = 8 cms.

There are no stream gauges on this tributary. By reviewing the stream gauges that are active and available within a nearby watershed, the WSC gauge 07BC007 (DA = 344 km^2, 1979 – Now) was considered assuming same watershed characteristics. The high runoff events in recent years are summarized below:
April 1982, reported Q ~ 35 cms
April 1985, reported Q ~ 22 cms
April 1996, reported Q ~ 23 cms
April 1997, reported Q ~ 46 cms
April 2013, reported Q ~ 18 cms

The largest storm in the storm database is 145mm of rainfall in July 1953.

Basin Runoff Potential:

d = 43 mm, T_p = 20 hrs, q = 0.6 cms/km^2.
Gross DA = 12 km^2.
Q_p = 7.2 cms.

Conclusion:

The basin runoff potential flow falls within the range of channel capacity estimates and historical flow, which should govern for the design. Recommended parameters are below:

Y = 1.4 m, V = 1.5 m/s, Q = 7.2 cms

Classification: Protected A