



# INDIANA DEPARTMENT OF TRANSPORTATION

*Driving Indiana's Economic Growth*

## Design Memorandum No. 18-14 Technical Advisory

August 6, 2018

**TO:** All Design, Operations, and District Personnel, and Consultants

**FROM:** /s/Mark A. Bailey  
Mark A. Bailey  
Manager, Office of Hydraulics  
Bridge Management Division

**SUBJECT:** Hydraulic Memo Templates

**EFFECTIVE:** Hydraulic Submittals on or after August 1, 2018

The Office of Hydraulics has developed two templates to be completed and included with each consultant-designed Hydraulics submittal. The templates and instructions are available on the [INDOT Hydraulics webpage](#), under *Submitting Documents*. Please note that the naming convention for these documents differs from the standard ERMS naming convention for hydraulic submittals to provide consistency with similar documents already in BIAS.

**1. Small Structure Hydraulic Memo.** The hydraulic memo should be completed and included with the hydraulics submittal for new and replacement culverts (small structures and pipes).

- The consultant will complete sections for site parameters, existing and proposed culvert data, analysis, and scour protection as well as beveled edge headwalls, riprap basins, and inlet depressions (as applicable).
- The INDOT Hydraulics Engineer will finalize the memo.

**2. Scour Memo.** The scour memo should be completed and included with the hydraulics submittal for a bridge rehabilitation scour evaluation.

Part A. The consultant will complete Part A, including Scour Status. See the scour memo instructions for additional information.

- A final determination of either "Not Scour Critical" or "Scour Critical" completes the review and does not require Parts B or C. In general, a bridge is considered "Not Scour Critical" if structural and geotechnical analysis indicates that the structure meets all applicable design requirements in the scoured condition.
- A "Scour Status Pending" requires Part B to be completed.

Part B. INDOT Bridge Design will provide the scour status recommendation in Part B.

- A recommendation of either “Not Scour Critical” or “Scour Critical – Final Determination” completes the review.
- A recommendation of “Scour Critical - Contingent Determination” indicates the structure will be considered scour critical without further analysis; however, additional analysis (Part C) may be pursued to support classifying the bridge as “Not Scour Critical”.

Part C. Environmental, economical, or other considerations may warrant additional analysis to support a recommendation of “Not Scour Critical”. The INDOT Project Manager, INDOT Bridge Asset Engineer, and the Bridge Engineer of Record will determine whether to pursue additional analysis.

- Where additional analysis is not pursued, no action is required and the review is complete. The scour critical recommendation in Part B will serve as the final recommendation.
- Where additional analysis supports that the bridge has sufficient structural and geotechnical capacity in the scoured condition or that sufficient scour countermeasures are currently in place, the Bridge Engineer of Record should complete the Scour Status as “Not Scour Critical”, and sign/seal the form. The completed form must be returned to the Office of Hydraulics.
- Where additional analysis supports that the bridge does not have sufficient structural and geotechnical capacity in the scoured condition, the Bridge Engineer of Record should complete the Scour Status as “Scour Critical”, and sign/seal the form. The completed form must be returned to the Office of Hydraulics.

Contact Mark Bailey with questions and comments at (317) 233-2096 or by email at [mbailey1@indot.in.gov](mailto:mbailey1@indot.in.gov).