

 Office of Structures Guidelines and Procedures Memorandum	DESIGN
	Number: D-12-50(4)
	Date: 03-16-2018
Structural Design Quality Control	Approval: 

The following procedures shall be used to ensure that the structure projects we advertise meet the latest structural design requirements and are economical.

- 1) All Structural Reviews submitted to MDOT SHA by consultants shall have a complete check of the work by the Prime Consultant. This includes all design work prepared by subconsultants under the Prime Consultants agreement with MDOT SHA. The Prime Consultant shall indicate in writing to MDOT SHA that such a review has been made and the Prime Consultant agrees with the design as presented on the Structural Review Plans.
- 2) All structures designed in-house or by consultant shall be subjected to an independent design check (IDC) by another consultant.

An IDC shall take place after the designer has addressed all of MDOT SHA's Structural Review comments. The plans shall be provided to an independent reviewer, assigned by MDOT SHA. The review shall consist of a total check of the design of the main members, including superstructure, piers, abutments and foundations, including any stage construction configurations which differ from the final configuration. The scope of the IDC on structure widening, superstructure replacement, and deck replacements shall be established at the time of review but need not include a full check of all existing bridge elements to remain in place.

This IDC will be made by a Professional Engineer experienced in structural design and licensed in Maryland. For both in-house and consultant bridge designs, the IDC shall be made by a consultant who has had no previous involvement with design of any structural element in the project. When a subconsultant prepares the structural design or any portion of the structural design, then the Prime consultant's review of the structural design does not satisfy the requirement of an IDC.

The results of this IDC will usually result in one of three outcomes:

- 1) the design is acceptable as-is
- 2) elements are significantly over-designed (Exceed AASHTO and OOS requirements)
- 3) elements are under-designed. (Do not meet AASHTO and OOS requirements)

The results of this IDC shall be documented, compared to the original design and any discrepancies and recommendations for changes noted. The results shall be provided to the OOS project manager for their review and comment or in the case of a consultant design, the OOS project manager shall forward the results to the Prime Consultant for review and comment.

If the Prime Consultant and Checker cannot resolve differences relative to the IDC, then MDOT SHA shall provide a third party to settle the dispute.

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If the bridge is determined to be acceptable as-is, then the cost of the IDC shall be the responsibility of the MDOT SHA. If the structure is under-designed, necessary changes shall be made to the contract documents to bring them into minimum AASHTO and OOS compliance as to design requirements. If the structure is over-designed and significant cost savings can be achieved by modifying the design, then these modifications shall be implemented. For consultant projects, any such changes to correct under / over-design to an acceptable level shall be made to the contract documents at no additional cost to MDOT SHA. The documented cost for an IDC that shows either an under design or significant over design shall be reimbursed to MDOT SHA by the Prime Consultant.

This policy may be waived for portions of design that consist of MDOT SHA standard elements such as parapets, deck slabs and prestressed concrete planks. MDOT SHA shall be the sole judge of the scope of services for the IDC.