

## ***ENGINEERING DIRECTIVE***

Thomas F. Broderick, P.E. (signature on original)

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CHIEF ENGINEER

### **Role of District Bridge Engineers**

The purpose of this Engineering Directive is to further define the division of responsibility for the MassDOT approval of bridge and other structural designs, in both the design phase and the construction phase, between the Districts and the Boston Bridge Section. This directive supplements Engineering Directive E-11-004, “Responsibility for Bridge and Other Structural Design Approvals and Authorized Signatories for Bridge Sketch Plans and Construction Drawings”, dated August 4, 2011.

#### **Design Phase**

Effective immediately, the division of responsibility for bridge and other structural design approvals between the District Bridge Sections and the Boston Bridge Section shall be based on the type of bridge project (preservation/rehabilitation/replacement), the roadway crossing or being crossed (Interstate/NHS/State Route/local/etc.), the estimated construction cost of the project, or a combination thereof.

District Bridge Sections shall be responsible for preparing the following designs:

- FA and NFA Maintenance Projects
- Emergency Repair Projects
- Preservation Projects (when assigned to the District by Boston)

AASHTO defines Preservation Projects as “actions or strategies that prevent, delay or reduce deterioration of bridges or bridge elements, restore the function of existing bridges, keep bridges in good condition and extend their useful life. Preservation actions may be preventative or condition-driven.” In order to be considered a Preservation Project, the condition ratings must be 5 or greater. Some examples of preservation actions are:

- Eliminating deck joints.
- Repairing or installing new expansion joints on larger bridges.
- Repairing bridge decks – may include partial depth or full depth repairs.
- Replacing bridge decks.

- Maintaining proper deck drainage.
- Restoring or replacing bridge bearings.
- Repairing bridge beam ends and beam bearing areas.
- Bridge painting.

Preservation projects will generally not require a design public hearing, environmental permits, right of way, or utility relocations (temporary or permanent).

District Bridge Sections shall be responsible for technical reviews of the following:

- Bridge Preservation Projects designed by consultants or Boston Bridge Design Section
  - Scope of work
  - Preliminary Design Submittals (when applicable). These submittals will not be reviewed by the Boston Bridge Section.
  - Final Design Submittal. These submittals will not be reviewed by the Boston Bridge Section.
- Bridge Projects on Interstate Highways
  - Scope of work
  - Preliminary Design (Preliminary Structures Report, Bridge Type Selection Worksheet, Sketch Plans, and other studies prepared prior to submittal of Sketch Plans). These submittals will also be reviewed independently by the Boston Bridge Section.
  - Final Design (1<sup>st</sup> structural submission, 2<sup>nd</sup> (and beyond) structural submissions). These submittals will also be reviewed independently by the Boston Bridge Section. The Boston Bridge Section will review the PSE submittal to verify all comments and responses have been incorporated.
- Bridge Projects with Estimated Construction Cost greater than \$10 million
  - Scope of work
  - Preliminary Design (Preliminary Structures Report, Bridge Type Selection Worksheet, Sketch Plans, and other studies prepared prior to submittal of Sketch Plans). These submittals will also be reviewed independently by the Boston Bridge Section. The Boston Bridge Section will review the PSE submittal to verify all comments and responses have been incorporated.
  - Final Design (1<sup>st</sup> structural submission, 2<sup>nd</sup> (and beyond) structural submissions). These submittals will also be reviewed independently by the Boston Bridge Section.
- Bridge Projects with Estimated Construction Cost less than \$10 million
  - Scope of work
  - Preliminary Design (Preliminary Structures Report, Bridge Type Selection Worksheet, Sketch Plans, and other studies prepared prior to submittal of Sketch Plans). These submittals will also be reviewed independently by the Boston Bridge Section.

Comments made by the District Bridge Engineers will be transmitted to the Bridge Project Manager, and utilize the standard Design Review Form (Excel spreadsheet). Comments should not be sent to the design consultant by anyone other than the Bridge Project Manager.

## Construction Phase

Effective immediately, the division of responsibility for construction submittals and documents between the District Bridge Sections and the Boston Bridge Section shall be based on whether the submittal or document relates to a change in the approved design.

District Bridge Sections shall be responsible for review and response to:

- Requests for Information (RFI's)
- Non-Conformance Reports (NCR's)
- Contractor submittals relating to issues not directly associated with the design (demolition plans, erection plans, assembly plans for PBES, concrete job mixes, etc.)

When a Contractor submits a Value Engineering Cost Proposal (VECP) or other documentation that requests a deviation from the approved design, the District Bridge Section shall evaluate the proposed change against the criteria stated in the VECP special provision to determine if the proposal will be evaluated further. If the District Bridge Section determines the proposed change does not meet the criteria in the VECP special provision, the Construction Section will be notified that the proposed change has been denied. If the District Bridge Section determines the proposed change is worthy of consideration, it shall forward the proposal to the Boston Bridge Section for further review. If the Boston Bridge Section determines that the proposed change should be rejected, the District Bridge Section shall notify the Construction Section that the proposed change has been denied. If the Boston Bridge Section determines that the proposed change should be evaluated further, the District Bridge Section shall notify the Construction Section that the proposed change should be further developed by the Contractor's engineer and submitted for review in accordance with the procedures in the Bridge Manual. The District Bridge Section and the Boston Bridge Section shall perform concurrent reviews of the Contractor's proposed design.