



OHIO DEPARTMENT OF TRANSPORTATION
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October 18, 2013

To: Users of the Bridge Design Manual

From: Tim Keller, Administrator, Office of Structural Engineering

By: Sean Meddles, Assistant Administrator, Office of Structural Engineering

Re: 2013 Fourth Quarter Revisions

Revisions have been made to the ODOT Bridge Design Manual, July 2007. These revisions shall be implemented on all Department projects begin Stage 2 plan development date after October 18, 2013. Implementation of some or all of these revisions for projects further along the development process should be considered on a project-by-project basis.

This package contains the revised pages. The revised pages have been designed to replace the corresponding pages in the book and are numbered accordingly. Revisions, additions, and deletions are marked in the revised pages by the use of one vertical line in the right margin. The header of the revised pages is dated accordingly.

To keep your Manual correct and up-to-date, please replace the appropriate pages in the book with the pages in this package.

To ensure proper printing, make sure your printer is set to print in the 2-sided mode.

The July 2007 edition of the Bridge Design Manual may be downloaded at no cost using the following link:

<http://www.dot.state.oh.us/Divisions/HighwayOps/Structures/standard/Pages/default.aspx>

Attached is a brief description of each revision.

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Summary of Revisions to the July 2007 ODOT BDM

BDM Section	Affected Pages	Revision Description
201.2.7	2-7 through 2-8	This revision was included to emphasize the importance of the Permitted Lane Closure Schedules to bridge designers and to provide resources for ABC techniques.

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When the foundation recommendation for the preferred alternative includes MSE wall supported abutments, the Designer shall provide estimates for factored bearing pressure and factored bearing resistance for the in-situ material below the MSE wall and an estimate for settlement of the MSE wall. Refer to Section 204.4 for additional considerations.

When unique subsurface conditions arise, include a brief narrative in the Foundation Recommendation for justification to obtain extra soils borings.

201.2.7 PRELIMINARY MAINTENANCE OF TRAFFIC PLAN

The various components of the bridge stage construction shall match those of the approach roadway, and the nomenclature used to identify the various stages (phases) of construction shall be the same for the roadway and the bridge (Stage 1 and Stage 2 or Phase 1 and Phase 2).

For projects that affect ODOT's Permitted Lane Closure Schedule, Designers shall evaluate Accelerated Bridge Construction (ABC) techniques to mitigate negative impacts to the travelling public. Access to the Permitted Lane Closure Schedule is available at: <http://plcm.dot.state.oh.us/>.

Additional information regarding ABC techniques is available on FHWA's Accelerated Bridge Construction Website: <http://www.fhwa.dot.gov/bridge/abc/>.

The Preliminary Maintenance of Traffic Plan shall include a transverse section(s) defining all stages of removal and construction. The following information should be provided:

- A. The existing superstructure and substructure layout with overall dimensions (field verified) and color photographs.
- B. Type of temporary railing or barrier.
- C. Proposed temporary lane widths, measured as the clear distance between temporary barriers, shall be shown. A temporary single lane width of 11'-0" [3350 mm] or greater is preferred; 10'-0" [3000 mm] is the minimum allowable. Minimum preferred lateral clearance from edge of lane to barrier is 1'-6" [500 mm] (ODOT's Traffic Engineering Manual, Section 640-2) but Section 605-11.2 of the Traffic Engineering Manual, allows this lateral distance to be amended for specific sites and conditions. The designer should ensure that lane and lateral clearance requirements are evaluated versus effects of phased construction on a bridge structure.
- D. Location of cut lines. The existing structure should be evaluated to determine where the cut-line can be made to provide structural adequacy. Cut lines through stone substructures should be carefully evaluated to maintain structural integrity through staged removals. Temporary shoring may be required and should be considered.
- E. Temporary modifications to superelevated sections (existing and/or proposed) on the deck and/or shoulder in order to accommodate the traffic from the phase construction.
- F. Width of closure pour. When determining the closure pour width (see Section 300 of this

Manual), the designer should investigate the economics of using the lap splices versus using mechanical connectors. Any necessary structure modifications should be included in the cost estimate. Lap splices are preferred and recommended. A reduced closure width may cause transition problems in the finishing of the bridge deck surface when bringing the various phases of construction together.

- G. Profile grade, alignment, approximate location and width of temporary structures
- H. Location of temporary shoring

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201.3 UTILITIES

All utilities should be accurately located and identified on the Preliminary Structure Site Plan. A note should state whether they are to remain in place, be relocated or be removed, and for the latter two, by whom.

Utilities should not be placed on bridges whenever possible.

The type of superstructure selected for a site may be dependent upon the number of utilities supported on the bridge. The request to allow utilities on the bridge shall be made through the ODOT District Utilities Coordinator. Refer to the ODOT Utilities Manual. Utilities shall be installed in substantial ducts or enclosures adequate to protect the lines from future bridge repair and maintenance operations. Utilities shall not be placed inside of prestressed concrete box beams. For some specific detail issues with utilities on bridges refer to Section 300 of this Manual.

202 BRIDGE PRELIMINARY DESIGN REPORT

202.1 GENERAL

In conformance with Section 1400 of the ODOT Location and Design Manual, Volume Three, a Bridge Preliminary Design Report shall be included in the Stage 1 Detailed Design Review Submission.

202.2 BRIDGE PRELIMINARY DESIGN REPORT SUBMISSION REQUIREMENTS

The Bridge Preliminary Design Report submission should contain the following:

- A. Final Structure Site PlanSection 202.2.1
- B. Final Maintenance of Traffic PlanSection 202.2.2
- C. Foundation ReportSection 202.2.3
- D. Supplemental Site Plan for Railway CrossingsSection 202.2.4

202.2.1 FINAL STRUCTURE SITE PLAN

In addition to the Preliminary Structure Site Plan requirements of Section 201.2.2, the Final Structure Site Plan should show the following information in plan view: bridge width and approach pavement widths, showing curb or parapet lines and outer limits of the superstructure and substructure units; skew with respect to the centerline of a substructure unit (not to centerline of stream or centerline of tracks); lateral clearances (both the minimum required and the actual) with respect to railroad tracks or highways under the proposed structure; location of minimum