Oregon
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Department of Transportation
Technical Leadership Center
ODOT Bridge Section MS #4
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FILE CODE:

October 23, 2013

To: Users of Oregon DOT Bridge Design and Drafting Manual

Subject: Revisions to the ODOT Bridge Design and Drafting Manual

The ODOT Bridge Design and Drafting Manual (BDDM), October 2013 has been completely reorganized, and updated with several revisions. The revised BDDM is being released in web-based Acrobat files, which can be accessed at the following web site:

http://www.oregon.gov/ODOT/HWY/BRIDGE/Pages/standards_manuals.aspx

The revised BDDM can be viewed from the site, or downloaded and printed. Besides the reorganization, the revisions consist of 11 articles listed in the attachment.

These revisions apply to new design projects as of the effective date of January 1, 2014. New projects for ODOT designed projects are those that do not have an approved DAP by the effective date. New projects for outsourced projects are those that do not have an executed work order contract for PE. However, existing projects may make use of these revisions, if agreed to by the Agency Project Manager or Project Team Leader.

We are always interested in comments or suggestions on any of the provisions in the BDDM. Please send comments or suggestions to Scott Liesinger at: scott.d.liesinger@odot.state.or.us

BJohnson

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State Bridge Engineer

Attachment: BDDM Final Update Summary October 2013

BVJ/jdj

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October 2013 Update
ODOT Bridge Design & Drafting Manual

Final Update Summary

The following revisions are in reference to current BDDM section numbers:

Section 1 – Design and Detailing Practices

1.1.7.2(4) Live Loads: Structure Repair and/or Strengthening – Clarify vehicles and load factors to use for strengthening designs.

1.2.2.2 Fillet Welds; Bullet titled 'LRFD Design': Change the AASHTO equation reference to read "(AASHTO Section 6)".

1.6.1 Steel Structure Design and Detailing: Deleted the following three paragraphs from this section to avoid any conflicts with Section 1.9 - Decks:

> *The top ½" of deck concrete thickness is considered sacrificial layer of deck concrete and does not contribute to deck strength.*
>
> *Beta version of deck design worksheet for steel girder bridges is located at:*
>
> *ftp://ftp.odot.state.or.us/bridge/bddm/MathCad_Templates/*
>
> *Please forward your comments or suggestions to the Steel Bridge Design Standards Engineer.*
>
> *Top and bottom mats of reinforcing steel do not need to be on same alignments or spacing. Limit reinforcing steel spacing of steel girder bridge decks in conformance with AASHTO LRFD Bridge Design Specifications.*

Section 2 – Drafting Practices

2.1.3.1 CAD Files: Drawings Start to Finish – Clarify where to obtain structure, drawing, and calculation book numbers. Clarify As-Constructed procedures.

2.1.3.2 CAD Files: What Bridge Headquarters Needs at Completion of a Design Project – Distinguish needs between State Highway bridges vs. Local or other State owned bridges.

2.1.3.5 CAD Files: Microstation Models – Change procedure to take advantage of a change in Microstation regarding use of Annotation Scale.

2.1.5 Menus – Archive old menus due to going to version V8i of Microstation.

2.3.1 Drawing Identification Tag – Delete 2.3.1 in its entirety. No longer needed due to going to version V8i of Microstation.

2.4.2 Title Block – Clarify when Structure and Drawing numbers are required.

2.7.6 Deck Plan – Add “Bridge ID Marker” to list of items to show on deck plan sheet.

2.7.11.1 As-Constructed Drawings – Clarify naming convention for tif files.

The following revisions are in reference to BDDM section numbers:

Introduction

Update subsections to reflect current organization and practices of the Bridge Engineering Section in 2013.

Section 1 – Design and Detailing Practices

Note: Subsections 1.1 through 1.15 match the sections in the AASHTO LRFD Manual.

1.2.3 Bridge Design Deliverables – Add subsection.

1.2.4 Bridge Design Procedures – Add subsection.

1.10.1 Foundation Considerations – Move Hydraulic and Scour information to Section 3.14.7.

Move other “non-design” information to Section 3.

Move Section 1.6 to Appendix Section 1.2.

Section 3

Create Section 3 for “non-design” information: design processes, roles and responsibilities, quality program, coordination with other disciplines, bridge type selection, bridge layout and other layout considerations, and construction contracting methods and techniques.

3.3.1 & 3.3.2 Bridge Design Process (DBB), Overview – Reference Bridge Scope Memo and related guidance.

3.3.8 Bridge Design Process (DBB), Overview – Reference submittal of electronic copy of calculation book after award of construction contract.

3.4 Roles & Responsibilities – Move applicable information from 2012 BDDM Section 1.1.2.12 Final Design to this Section 3.4; expand information to reflect current 2013 Bridge Section organization, and address FHWA comments. Reference anticipated duties of proposed ODOT Bridge Design Manager.

3.5 Quality – Move applicable information from 2012 BDDM Section 1.1.2.12 Final Design to Section 3.5; and expand information to include other unwritten Bridge Section quality practices, add some common industry Quality Program practices to address FHWA comments, and better align with FHWA guidance.

3.5.7 Design Checks – Revise Class II check; create a Class III check and redefine the Class II check. Include “Line-by-Line” method of checking. Add table to aid in determining when to use “Line-by-Line” checking vs. “Independent” checking.

3.9 Preliminary Design / DAP / TS&L – Move applicable information from 2012 BDDM Section 1.1.2.11 TS&L Design to this Section 3.9; expand information to reflect current 2013 Bridge Section practices, and address FHWA comments.

3.9.3 & 3.9.10 Preliminary Design / DAP / TS&L – Reference TS&L Memo and related guidance.

3.9.4, 3.9.10, & 3.9.11 Preliminary Design / DAP / TS&L – Add signature page to TS&L Memo and Narrative; signatures indicate ‘Bridge Design’ approval of TS&L.

3.10 Final Design / PS&E – Move applicable information from 2012 BDDM Section 1.1.2.12 Final Design to this Section 3.10; expand information to reflect current 2013 Bridge Section practices, and address FHWA comments.

Brought forward 2003 Bridge Office Practice Sections 2.1.5 and 2.1.6 regarding Calculations and Calculation Books, and related protocols, to address FHWA comment. (This revision and the revision associated with Roles and Responsibilities (Section 3.4) will allow ‘sun-setting’ of the 2003 Bridge Office Practice Manual.)

3.12.5.3 Construction Support Close-Out – Added paragraph specifying what documents are to be submitted to Bridge Engineering Section for Local Agency Bridges at the end of Construction.

3.14 Coordination with other Project Team Members – Move applicable information from 20012 BDDM Section 1.2 to this Section 3.14; revise information to reflect current organization and practices (Note: Geotech/Foundations included in BDDM Section 1.10 to match AASHTO LRFD. Hydraulics included in BDDM Section 3.14, even though it is in AASHTO LRFD, but not as its own section).

3.14.8.1.1 Permit Information Memo – Reference preparation of separate Permit Information Memo.

3.17, 3.18, 3.19, 3.20, 3.21 Brought together this group of “non-design” sections regarding bridge type selection, bridge layout, safety and accessibility, security, and aesthetics and maintained their close proximity to the Preliminary Design / TS&L Section 3.9 and guidance on Alternative Studies.

3.17.1-(6) Bridge Type and Economics: Maintenance and Provisions for Inspection of Bridges – Corrected positions performing constructability and maintainability reviews.

3.20.1.3 Bridge Security Design Considerations: Process – Corrected position consulting Bridge Engineering Section for bridge security guidance.

Appendix Section 3.5 Quality – Revise existing QC Checklist and create new QC Forms and Checklists that are role specific.