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Note: Revisions for May, 2018 are marked with yellow highlight. Deleted text is not marked; past editions of the BDM are available for comparison at http://www.oregon.gov/ODOT/Bridge/Pages/Bridge-Design-Manual.aspx

INTRODUCTION

PREFACE

The Bridge Design Manual (BDM) provides a reference for those involved in preparing ODOT bridge design deliverables. The purpose of the manual is to:

- Provide guidance in design standards and detailing practices (Section 1).
- Provide guidance in selective design, and bridge type selection and geometric layout (Section 2).
- Provide guidance in bridge design roles and responsibilities, design and quality processes, and items to coordinate with other disciplines (Section 3).

An effort has been made to make the Bridge Design Manual informative, comprehensive, and accurate. It is a guide to acceptable ODOT practices. The manual should be used in the design of State Highway bridges. Use on other bridges in the State of Oregon should only be as noted in this manual, or as directed by the bridge owner.

The manual is not a legal document. There is no substitute for sound engineering judgment.

Bridge Design Manual users are encouraged to submit comments, corrections, and proposals for new or revised materials.

Any comments or questions about the Bridge Design Manual should be directed to:

Bridge Design Standards and Practices Engineer
Oregon Department of Transportation
Technical Services – Bridge Engineering Section
4040 Fairview Industrial Drive S.E., MS #4
Salem, OR 97302-1142
(503) 986-4200
Alex.K.LIM@odot.state.or.us
ORGANIZATION OF THE MANUAL

The Bridge Design Manual is divided into three main sections:

- Section 1: Design Standards and Detailing Practices
- Section 2: Design Guidance, Type Selection and Layout
- Section 3: Roles, Processes

The acronym “BDM” and a number refers to a section, subsection, etc., of this Manual unless another reference is specifically called out. So, you will see BDM 2.1, BDM 2.1.1.1(1), etc.

The acronym “BCM” and a number refers to a section of the Bridge CAD Manual.

The acronym “LRFD” and a number refers to a section of the AASHTO LRFD Bridge Design Specifications.

The acronym “SP” and a number refers to a section of the ODOT Construction Specifications.

Except for the “Introduction”, each Section has:

- Main body of text
- Appendix

The page numbers of the Section’s text are prefixed with the Section number. Thus, for Section 2, the page numbers are 2-1, 2-2, etc.

The Table of Contents is linked to the Section’s text for Sections 1, 2 and 3. The “Bookmark” navigation function is active in all Sections. Also, the “Search” and “Find” functions enable fairly rapid location of topics.

Tables, charts, and examples of forms are all identified as alphanumeric “Figures”. The figure number refers to the specific section number where the figure is mentioned:

- Figure 2.1.1 is the only figure mentioned in Section 2.1.1 and inserted in or closely after the Section 2.1.1 text.
- Figure 2.1.1A is the first figure of a series of figures mentioned in Section 2.1.1 and inserted in or closely after the Section 2.1.1 text.
- Figure A2.3.2A is in the Section 2 Appendix and mentioned in Section 2.3.2.

For the sake of brevity or in order to use a familiar term in place of an unfamiliar “official” version, some editorial liberties have been taken when referring to organizational names or titles:

<table>
<thead>
<tr>
<th>Manual</th>
<th>Official</th>
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<tbody>
<tr>
<td>Bridge Section or Bridge HQ</td>
<td>Bridge Engineering Section</td>
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<td>Roadway Section</td>
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<td>Traffic Section</td>
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<td>Region Tech Center</td>
<td>Regional Technical Centers</td>
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Intro-2
REVISING THE MANUAL

Only the Bridge Design Standards and Practices Engineer, Bridge Standards Technical Specialists, or the State Bridge Engineer (or his/her designee) are to circulate communications concerning matters of or revisions to design practices.

(1) Put It in Writing - Research and develop a written proposal using three general subject headings:

- Problem Statement
- Proposal
- Analysis / Research / and Other Supporting Data

A template letter is shown at the end of this Section. An electronic version of this template can be found on the BDM webpage at http://www.oregon.gov/ODOT/Bridge/Pages/Bridge-Forms.aspx

Complete your written proposal and submit directly to the Bridge Design Standards and Practices Engineer at the address or email shown in the Preface.

(2) Review and Approval - After reviewing a written proposal for completeness, the Design Standards and Practices Engineer will:

- Acknowledge receipt of the proposal and provide an initial assessment response:
  - Accepted for consideration as submitted
  - Accepted for consideration as noted
  - Proposal tabled, see Remarks
  - Proposal not accepted, see Remarks

- For accepted proposals, post the proposal on the BDM webpage for review and comment.

After the review period, responses to comments will be prepared. The Standards Engineer will see that one of the following is done:

- Proposals with resolved comments will be included in the BDM.
- Proposals without resolved comments will be tabled (and possibly reconsidered at a future update should the proposer so elect).

Proposals will be forwarded to the FHWA (Federal Highway Administration) for review, comments and approval. Any FHWA comments on a proposal will be reviewed and given a final approval.

(3) Implementation of Approved Revision - After a proposal has final approval, the Standards Engineer will include it in the Manual update on the Bridge Engineering webpage. Revised or added text will be highlighted in yellow. If a revision is urgent, it may be distributed immediately in a Technical Bulletin and incorporated into the BDM later.
## RECORD OF REVISIONS

The following sections contain changes or additions from the latest BDM update:

<table>
<thead>
<tr>
<th>Revised Section</th>
<th>Revised By</th>
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<tbody>
<tr>
<td><strong>Section 1 – Design and Detailing Practices</strong></td>
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</tr>
<tr>
<td>1.2.3</td>
<td>Alex Lim, Scott Liesinger</td>
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<tr>
<td>1.3.2(5)</td>
<td>Alex Lim</td>
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<td>1.5.5.1.17</td>
<td>Tanarat Potisuk</td>
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<td>Alex Lim</td>
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<td>1.9.4.4</td>
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<td>1.16</td>
<td>Alex Lim, Accessibility Consultant</td>
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<td>1.20</td>
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<td>General Notes</td>
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<td><strong>Section 2 – Design Guidance</strong></td>
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<td>2.2</td>
<td>Craig Shike</td>
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<td>2.3 thru 2.8</td>
<td>Alex Lim</td>
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<td><strong>Section 3 – Procedures and Layout</strong></td>
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<tr>
<td>3.3</td>
<td>Alex Lim, Scott Liesinger</td>
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<td>Alex Lim, Scott Liesinger</td>
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<td>3.5</td>
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<td>3.9</td>
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<tr>
<td><strong>BCM – Bridge CAD Manual</strong></td>
<td>Sandra Gish</td>
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DATE: Month XX, 20XX

TO: Alex Lim  
   Bridge Design Standards Engineer

FROM: [Name] 
      [Position Title]  
      [Firm]

SUBJECT: Proposed Revision to Bridge Design Manual

RE: BDM Section x.x.x.x -

Problem Statement:

Proposal:

Modify/Add Section x.x.x.x as follows:
**Analysis / Research / Other Supporting Data:**

- None
- Attached:

**Bridge Engineering Section Response:**

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Remarks:

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[Name of Reviewer]  
Bridge Design Standards Reviewer  
Date

Alex Lim  
Bridge Design Standards Engineer  
Date

Cc:  file