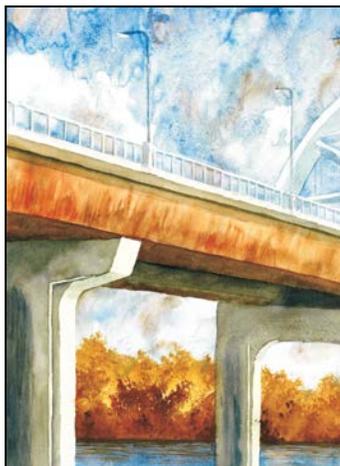
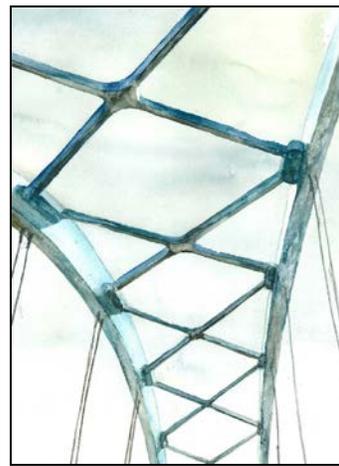




Division of Transportation
System Development
Bureau of Structures
PO Box 7916
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Bridge Manual



Standard Details

DATE: February 16, 2015
TO: Bridge Manual Users
FROM: DTSD – Bureau of Structures
SUBJECT: **January 2015 Bridge Manual Update**

The Bridge Manual revisions to text and standards are now complete and posted online for this six month cycle. Please see the attached sheets for a list, with brief explanation, of the Text and Standards that were revised. Corresponding plan insert sheets have also been updated and posted online.

Of particular interest in this edition:

- Effective with the 2016 Standard Specifications (August 1, 2015 PS&E's), structures plans should utilize two different products as protective coatings to bridge structures. **“Protective Surface Treatment”** (bid item 502.3200) shall be utilized as the material applied to the bridge deck/medians/raised sidewalks and **“Pigmented Surface Sealer”** (bid item 502.3210) for the material applied to the front face and top surfaces of parapets. The material properties for each of these products are distinct and thus, the change to bid these items separately was developed. Protective Surface Treatment materials can be found on the Concrete Protective Surface Treatment approved products list. Pigmented Surface Sealer materials can be found on the Cure & Seal Compounds for Non-Trafficked Surfaces on Structural Masonry approved products list.
- **Chapter 6:** New section 6.4.41 Ice Hot Weather Concreting. This section refers to the FDM and a new statewide policy regarding possible payment for ice for hot weather concreting.
- **Chapter 7:** New sections 7.1.4.1.1-3 regarding precast pier applications. Precast piers as required for a research project and allowed as an alternate to the CIP design is currently being used on the I39/90 project. Additional usage guidance is given in this section.
- **New Standards 7.05 & 7.06:** Standards show details associated with using a precast pier as a *contractor* selected alternative to the CIP designed pier.

- **New Standards 30.26 – 30.29 – Standards for NY 3&4 Rail Railing:** This is a new open steel TL-4 traffic railing. The NY 4 has rail elements spaced to meet pedestrian and bicycle requirements (minimum, not preferred, for bicycle). Concrete parapets are still preferred to keep salt laden water from running over and corroding the edge of deck.
- **New Standards 40.01, 40.02, 40.31-40.33:** These standards better define various overlay methods and concrete repair details.
- **Removed Standard 14.01:** Standard 14.03 should be used instead as it is LRFD.
- **Insert Sheets:** Insert sheets have been updated and/or created for this 6-month cycle. Please make sure that the current insert sheets are being utilized for structures projects.
- **Note:** Some Special Provisions have been (or are being) converted to STSP's or Standard Spec items as part of a statewide effort to reduce SPV's. If you don't find it in the SPV list, it may have moved to the STSP's or Standard Spec.

Most other changes are fairly minor. Please use the example calculations with care (follow along in AASHTO). A couple of mistakes have been pointed out. Unfortunately, due to time/resource issues, the corrections were not made at this time.

If anything in a given chapter was edited, the date for the entire chapter was updated. A vertical black bar in the left margin notes all changes. Previous black bars were not removed from chapters which were not edited in this update.

The user's feedback regarding the Bridge Manual is important to us as that is where we get many ideas for corrections, clarifications and new ideas for enhancement.

January 2015 Bridge Manual Text Update Summary

<u>Chapter</u>	<u>Page Number(s)</u>	<u>Change</u>
5	All	Yearly update to cost data. Added a reference to FDM 19-5-5 for other estimating tools.
6	15	Changed "Ultimate Stresses" to "Material Properties"
	26	Added a General Note regarding how structure backfill quantity is calculated
	28	Previous update only indicated that each substructure unit should have its own sheet(s) under the "Piers" section. "Abutments" section added.
	34	Added NY rail to list of railings that require name plate to be located on the wing
	34-37	Updated information regarding design information retention
	38	Removed advice to split certain quantities out for staged construction.
	40	Added "Galvanized" to bid item name for railings
	41-42	Updated quantity preparation
	43	Added guidance for "Ice Hot Weather Concreting"
7	7-9	Added language for precast pier use
	20,25	Typos
9	9	Added Type NY rail to list of steel railings and changed "ornamental screening" to "tubular screening" to match name on Standard 30.15
10	All	A general re-write. Some content was moved, while some new content was added to clarify the expectations of the geotechnical investigation.
11	Numerous	Policy item wording, but not intent, updated in many locations.
	5	Lateral deflection added as a performance requirement
	41	Updated LRFD section numbers
	Numerous	Other minor edits
12	27,28	Clarified substructure and superstructure wind load application.
13	3	Added WisDOT policy item for precast pier usage
	7	Updated FDM reference for corrosive water locations.
	21	Revised the minimum column requirement for multi-columned piers.
13E -1	13E1-2	Changed Edition of LRFD Spec. that Example is current through
13E - 2	13E2-2	Changed Edition of LRFD Spec. that Example is current through

14	7,8,21,102	Changed Foundation & Pavement Unit (Geotechnical Unit) to Geotechnical Engineering Unit
	73	Added (Tilt-up) to Full height precast concrete panels facing description
	125	Added requirement to show name plate location on plans
17	3	Removed rating guidance - Refer to Chapter 45
	66,67,70,71	Modified text to cover Type "NY" railing
	69	Modified Table 17.6-4 and Table 17.6-5 to cover Type "NY" railing
	72	Updated information regarding construction joint usage
	73	Added design guidance for bridge protective systems
18E -1	18E1-3	Changed Edition of LRFD Spec. that Example is current through
19E -1	19E1-2	Changed Edition of LRFD Spec. that Example is current through
19E -2	19E2-2	Changed Edition of LRFD Spec. that Example is current through
19E -3	19E3-2	Changed Edition of LRFD Spec. that Example is current through
24	86	Changed Polysiloxane paint system reference from SPV to STSP.
27E -1	27E1-2	Changed Edition of LRFD Spec. that Example is current through
30	4,8	Changed "ornamental screening" to "tubular screening" to match name on Standard 30.15
	9	Added text to cover usage of new Type NY railings
	13	Corrected sentences by replacing "railing" with "parapet"
	14	Clarified which concrete surfaces may be stained
36E -1	36E1-2	Changed Edition of LRFD Spec. that Example is current through
39	1-15	Added clarity to Sign Structure types and their design requirements
40	10	Changed polymer overlay thickness from 3/8" to 1/4"
	17	Removed obsolete note that BOS is developing crash barrier (barrier is now std. 13.11)
	44-45	Updated total estimated quantities and removed Table 40.17-1
45	25	The MUTCD reference was changed to Wisconsin MUTCD

January 2015 Standard Details Update Summary

Chapter 4

- Std 4.01 ■ No revisions.

Chapter 7

- Std 7.01 ■ No revisions.
- Std 7.02 ■ No revisions.
- Std 7.03 ■ Revised cap dowels from strait to hooked.
 - Revised maximum precast element weight from 100 kips to 90 kips.
 - Revised minimum column policy.
- Std 7.04 ■ No revisions.
- NEW** Std 7.05 ■ Precast Pier (Optional) Cap and Columns
- NEW** Std 7.06 ■ Precast Bearing Block Details

Chapter 11

- Std 11.01 ■ No revisions.

Chapter 12

- Std 12.01 ■ Clarified horizontal BF bars between A1 bars to lap with each A1 bar
- Std 12.02 ■ No revisions.
- Std 12.03 ■ Added wingwall width when "NY3" or "NY4" railing is used.
- Std 12.04 ■ No revisions.
- Std 12.05 ■ Added wingwall width when "NY3" or "NY4" railing is used.
- Std 12.06 ■ No revisions.
- Std 12.07 ■ Specify 10'-0" minimum wing length
- Std 12.08 ■ No revisions.
- Std 12.09 ■ No revisions.
- Std 12.10 ■ Changed stainless steel provisions from SPV to STSP
 - Corrected FF and BF abutment label
 - Revised joint seal note for Section B-B
- Std 12.11 ■ Changed stainless steel provisions from SPV to STSP
 - Revised joint seal note for Section B-B
- Std 12.12 ■ Changed stainless steel provisions from SPV to STSP
 - Removed "CL." from dimension in Section B-B
- Std 12.13 ■ Changed stainless steel provisions from SPV to STSP
 - Added "Slab" to 20'-0" dimension
 - Corrected 20'-0" dimension to not include 1 1/2" expansion filler

Chapter 13

- Std 13.01 ■ No revisions.
- Std 13.02 ■ Adjusted height of optional shaft construction joints
 - Provide guidance regarding optional construction joints and bar splices
 - New "Plan Note" for optional joints and bar splices
- Std 13.03 ■ No revisions.
- Std 13.04 ■ No revisions.
- Std 13.05 ■ No revisions.
- Std 13.06 ■ Adjusted height of optional shaft construction joints
 - Provide guidance regarding optional construction joints and bar splices
 - New "Plan Note" for optional joints and bar splices
- Std 13.07 ■ No revisions.
- Std 13.10 ■ No revisions.

Std 13.11 ■ No revisions.

Chapter 14

- Std 14.01 ■ Removed 1/15. Use Standard 14.03 for new projects.
- Std 14.02 ■ Corrected dimension to top of expanded polystyrene to 4 inches
- Std 14.03 ■ No revisions.
- Std 14.04 ■ No revisions.
- Std 14.05 ■ No revisions.

Chapter 15

- Std 15.01 ■ No revisions.
- Std 15.02 ■ No revisions.
- Std 15.03 ■ No revisions.

Chapter 17

- Std 17.01 ■ No revisions.
- Std 17.02 ■ Updated longitudinal construction joint detail notes

Chapter 18

- Std 18.01 ■ Included Type "NY" rail in top transverse reinforcement table
- Std 18.02 ■ Included Type "NY" rail in top transverse reinforcement table
■ Added note to longitudinal construction joint detail

Chapter 19

- Std 19.01 ■ No revisions.
- Std 19.02 ■ No revisions.
- Std 19.03 ■ No revisions.
- Std 19.04 ■ No revisions.
- Std 19.11 ■ No revisions.
- Std 19.12 ■ No revisions.
- Std 19.13 ■ No revisions.
- Std 19.14 ■ No revisions.
- Std 19.15 ■ No revisions.
- Std 19.16 ■ No revisions.
- Std 19.17 ■ No revisions.
- Std 19.18 ■ No revisions.
- Std 19.19 ■ No revisions.
- Std 19.20 ■ No revisions.
- Std 19.31 ■ No revisions.
- Std 19.32 ■ No revisions.
- Std 19.33 ■ No revisions.
- Std 19.34 ■ No revisions.
- Std 19.35 ■ No revisions.
- Std 19.36 ■ No revisions.
- Std 19.37 ■ No revisions.
- Std 19.38 ■ No revisions.
- Std 19.51 ■ No revisions.
- Std 19.52 ■ No revisions.
- Std 19.53 ■ Added New York rail to list of those not allowed to be side-mounted to prestressed box girders

Chapter 23

- Std 23.01 ■ No revisions.
- Std 23.02 ■ No revisions.
- Std 23.03 ■ No revisions.

Chapter 24

- Std 24.02 ■ Revised "Detail A"
 - Added "corners chamfered 1/16" minimum" to last note of "Notes"
 - Revised weld sizes on detail in lower right-hand corner of standard
- Std 24.03 ■ No revisions.
- Std 24.04 ■ No revisions.
- Std 24.06 ■ No revisions.
- Std 24.08 ■ No revisions.
- Std 24.09 ■ No revisions.
- Std 24.10 ■ No revisions.
- Std 24.11 ■ Added note to longitudinal construction joint detail
- Std 24.12 ■ No revisions.

Chapter 27

- Std 27.02 ■ No revisions.
- Std 27.05 ■ No revisions.
- Std 27.06 ■ No revisions.
- Std 27.07 ■ No revisions.
- Std 27.08 ■ No revisions.
- Std 27.09 ■ Added 1" dimension from end of girder to embedded steel bearing plate

Chapter 28

- Std 28.01 ■ No revisions.
- Std 28.02 ■ No revisions.
- Std 28.03 ■ No revisions.
- Std 28.04 ■ No revisions.
- Std 28.05 ■ No revisions.
- Std 28.06 ■ No revisions.
- Std 28.07 ■ No revisions.
- Std 28.08 ■ No revisions.

Chapter 29

- Std 29.01 ■ No revisions.
- Std 29.02 ■ No revisions.
- Std 29.03 ■ No revisions.

Chapter 30

- Std 30.01 ■ No revisions.
- Std 30.02 ■ No revisions.
- Std 30.04 ■ No revisions.
- Std 30.05 ■ No revisions.
- Std 30.07 ■ No revisions.
- Std 30.10 ■ No revisions.
- Std 30.11 ■ No revisions.
- Std 30.12 ■ No revisions.
- Std 30.13 ■ No revisions.
- Std 30.14 ■ No revisions.

- Std 30.15 ■ Changed name of Standard to "Tubular Steel Railing - Screening" to match other railing types
 Changed bid item on Standard by adding word "galvanized" to match bid item designated in the Bridge Special Provisions.
 Added reference in Notes to point to the Bridge Special Provisions.
 Provided clarification for color selection for railings vs. fence fabric.
 Minor revisions to Notes to match wording of other railing standards.
- Std 30.16 ■ No revisions.
- Std 30.17 ■ No revisions.
- Std 30.18 ■ No revisions.
- Std 30.19 ■ No revisions.
- Std 30.20 ■ No revisions.
- Std 30.21 ■ No revisions.
- Std 30.24 ■ No revisions.
- Std 30.25 ■ No revisions.
- NEW** Std 30.26 ■ Tubular Steel Railing Type NY3
- NEW** Std 30.27 ■ Tubular Steel Railing Type NY4
- NEW** Std 30.28 ■ End Post Details for Tubular Steel Railing Type NY3 & NY4
- NEW** Std 30.29 ■ Sidewalk Details for Tubular Steel Railing Type NY4
- Std 30.30 ■ No revisions.
- Std 30.31 ■ No revisions.
- Std 30.32 ■ No revisions.
- Std 30.33 ■ No revisions.
- Std 30.34 ■ No revisions.
- Std 30.35 ■ No revisions.
- Std 30.36 ■ No revisions.
- Std 30.37 ■ No revisions.

Chapter 36

- Std 36.01 ■ Changed "Ultimate Stresses" to "Material Properties"
- Std 36.02 ■ No revisions.
- Std 36.03 ■ No revisions.
- Std 36.04 ■ No revisions.
- Std 36.05 ■ No revisions.
- Std 36.06 ■ No revisions.
- Std 36.07 ■ No revisions.
- Std 36.08 ■ No revisions.
- Std 36.10 ■ No revisions.
- Std 36.11 ■ No revisions.
- Std 36.12 ■ No revisions.
- Std 36.13 ■ No revisions.
- Std 36.14 ■ No revisions.
- Std 36.15 ■ No revisions.
- Std 36.16 ■ No revisions.

Chapter 37

- Std 37.01 ■ No revisions.
- Std 37.02 ■ No revisions.

Chapter 38

- Std 38.01 ■ No revisions.

Chapter 39

- Std 39.01 ■ Removed 1/15. This standard is being maintained by the Bureau of Traffic Operations and is one of their Traffic Standards.
- Std 39.02 ■ Updated to provide clarity and improve General Notes & Design Data.
- Std 39.03 ■ Updated to provide clarity.
- Std 39.09 ■ Updated to provide clarity
- Std 39.10 ■ Updated to provide clarity and improve General Notes & Design Data.
- Std 39.11 ■ Updated to provide clarity
- Std 39.12 ■ Updated to provide clarity and make all reinforcement epoxy coated
- Std 39.13 ■ Updated to provide clarity

Chapter 40

- NEW** Std 40.01 ■ Concrete Repair Details
- NEW** Std 40.02 ■ Cathodic Protection
- Std 40.03 ■ Moved curb detail to Standard 40.01
■ Updated "Section Thru Railing" and "Section At End of Slab" details.
- Std 40.04 ■ No revisions.
- Std 40.05 ■ No revisions.
- Std 40.06 ■ No revisions.
- Std 40.07 ■ Added note to longitudinal construction joint detail
- Std 40.08 ■ No revisions.
- Std 40.09 ■ No revisions.
- Std 40.10 ■ No revisions.
- Std 40.11 ■ No revisions.
- Std 40.12 ■ No revisions.
- Std 40.13 ■ No revisions.
- Std 40.14 ■ No revisions.
- Std 40.15 ■ No revisions.
- Std 40.16 ■ No revisions.
- Std 40.17 ■ No revisions.
- Std 40.18 ■ No revisions.
- Std 40.19 ■ No revisions.
- Std 40.20 ■ No revisions.
- Std 40.21 ■ No revisions.
- Std 40.22 ■ No revisions.
- Std 40.23 ■ No revisions.
- Std 40.24 ■ No revisions.
- Std 40.25 ■ No revisions.
- NEW** Std 40.31 ■ Concrete Overlay
- NEW** Std 40.32 ■ Polymer Overlay
- NEW** Std 40.33 ■ Polymer Modified Asphaltic and Asphaltic Overlays