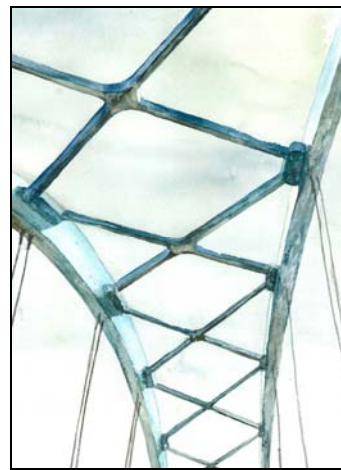




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Bridge Manual



Standard Details

DATE: January 31, 2011
TO: Bridge Manual Users
FROM: DTSD – Bureau of Structures
SUBJECT: **January, 2011 Bridge Manual Update**

The Bridge Manual revisions to text and standards are now complete 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:

- Chapter 14 – Retaining Walls is updated to account for LRFD. Several months ago a draft copy was posted online. This current version replaces that draft. A number of examples have also been added as well as Std 14.03.
- Chapter 19 – Prestressed Concrete now includes a girder multiplier of 1.4 to account for camber growth from the time of strand release to placement of the girders in the field. Field data from over 800 girders was included in this study and compared to the camber formula previously found in the Bridge Manual.
- Chapter 36 – Box Culverts is updated to account for LRFD. An example problem is included.

Most other changes are fairly minor. Please use the example calculations provided 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 but hopefully will be made for the following six month cycle.

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 edition.

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

January 2011 Bridge Manual Text Update Summary

<u>Chapter</u>	<u>Page</u> <u>Number(s)</u>	<u>Change</u>
2	3	New BOS organizational chart
5	All	Revised bid item costs
		Typo in section 5.4.2 (was 248 rather than correct 48)
		2010 cost data added
6	7,8,9,38	Minor change for new unit name
	26-28,38	Explanation of new sheet borders available (new, rehab, culverts)
	28	Clarified how to specify design specification
	29	Payment language removed as this belongs in Specs and/or CMM
	35	Minor change for a chapter reference
	36	Minor change to Chief Structural Design Engineer
	40	Minor change for a chapter reference
	41	Clarified how to specify pile lengths (round-off) on the plan
	48	Minor change to standard name rather than standard number
	Sec 6.5	Revised to address changes in consultant review
	6.5.5	Removed section 6.5.5 as it was more for BOS use, only
9	4	Added requirement for epoxy-coating of box culvert reinforcement
11	34,35	Downdrag and lateral squeeze on piles defined
13	10	Reference to 17.2.9 revised to 17.2.10
	11	Reminder for how to use LL reaction at pier (not the sum of adjacent shears)
	24,30	Pier cap skin reinforcement to be determined according LRFD [5.7.3.4]. Do not include this steel in strength calculations.
14	All	Revised draft copy that originally was posted in October, 2010
17	33,35	For raised sidewalks DF-lane = DF-truck
	49	Clarify how longitudinal reinforcement is determined in the tables and to use this reinf. Only calculate continuity bars for prestressed girders.
	71	Note to use standard hook for Detail "A". Reiterate points for use of Detail "A" or "B"

Chapter **Page**
Number(s) **Change**

18	4	Fixed typing errors in Section 18.2.2
	23	Clarified possible values for (SWL) slab width loaded
18 Example	18E1-3	Stated that Example is current for AASHTO LRFD Bridge Design Specification (thru 2010 Interim)
	18E1-64	Corrected location of wheel load reactions in Figure E18.19
19	7	$f'_{ci} = 0.75 f'_c$ minimum (0.85 max.) - report actual value req'd on plan
	9	LRFD Table [5.9.5.3-1] was referred to, but no longer exists. NOTE: The example problems have not yet been updated to reflect this change.
	36	Use a camber multiplier of 1.4 to account for camber growth after strand release
36	Entire Chapt.	Chapter rewritten to match AASHTO LRFD Specifications
	New Examp.	New Example added to show the LRFD design process for box culverts
45	29,30	Rating information regarding concrete box culverts

January 2011 Standard Details Update Summary

Chapter 4

- Std 4.01 ■ Added note at "Section Thru Formliner" clarifying minimum structural concrete dimensions

Chapter 12

- Std 12.07 ■ Revised first Designer Note to correspond to chapter text

Chapter 13

- Std 13.01 ■ **New** note indicating to normally eliminate footing dowel lap if lap length exceeds 1/2 the column height. With numerous, large column bars for collision loads, this will save bar steel as well as facilitate concrete placement around the bars.
- Std 13.05 ■ (same as Std 13.01)

Chapter 14

- Std 14.03 ■ **NEW**- Standard for LRFD proprietary walls (Std 14.01 or 14.03 used during transition to LRFD walls depending on when project was started, etc.)

Chapter 18

- Std 18.01 ■ Placed text under "Designer Notes" as a reminder to place Camber and Top of Slab Elevations at tenth points on the plans
- Std 18.02 ■ Placed text under "Designer Notes" as a reminder to place Camber and Top of Slab Elevations at tenth points on the plans

Chapter 19

- Std 19.38 ■ Only realigned views - no content change
- Std 19.51 ■ Removed concrete mix info. Refers to Std. Spec.

Chapter 30

- Std 30.01 ■ Corrected typing error. No details were changed.
- Std 30.07 ■ Added missing dimension for 2'-8" parapet (Section B)
■ Clarified joint opening value shown in "Part Elevation" view

Chapter 36

- Std 36.01 ■ Under Design Data, changed Live Load to LRFD Loading of HL-93
- Std 36.02 ■ Changed reinforcement length "L" in Table
- Std 36.03 ■ Modified Header Reinforcement
- Std 36.04 ■ Modified Design Notes
- Std 36.05 ■ Modified to meet LRFD Specifications and ASTM C1577
- Std 36.06 ■ Modified to meet LRFD Specifications and ASTM C1577

Std 36.10 ■ New Standard for Three-Sided Box Culvert

Std 36.11 ■ New Standard for Three-Sided Box Culvert

Std 36.12 ■ New Standard for Three-Sided Box Culvert

Std 36.13 ■ New Standard for Three-Sided Box Culvert

Std 36.14 ■ New Standard for Three-Sided Box Culvert

Std 36.15 ■ New Standard for Three-Sided Box Culvert

Std 36.16 ■ New Standard for Three-Sided Box Culvert

Chapter 40

- Std 40.04 ■ Added epoxy anchors for paving block as a default.
- Several minor changes