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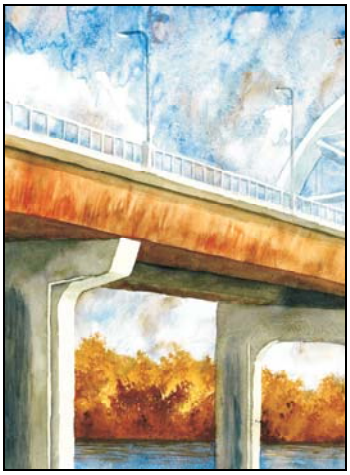

Bridge Manual

Standard Details

DATE: January 30, 2012
TO: Bridge Manual Users
FROM: DTSD – Bureau of Structures
SUBJECT: **January, 2012 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:

- **NEW Parapet Shapes.** To better align with the roadway barrier being recently changed to a single slope barrier (CBSS), new bridge parapets have been added that are single slope. The new shapes are 32SS, 36SS, 42SS, and 56SS (Standards 30.30-30.33). The number represents the height in inches while the SS stands for single slope. From section 30.2 of the Bridge Manual:

WisDOT policy item:

Bridge plans utilizing concrete parapets for any 2012 PS&E shall be designed with "LF" (or "HF" or "51F") parapets. Bridge plans utilizing concrete parapets for PS&E after 2012 shall be designed with "32SS" (or "36SS", "42SS", "56SS") parapets. (An exception could be made if final design is far enough along that changing to the "SS" shape would be burdensome.) If it is known that roadway concrete barrier single slope (CBSS) is going to be used on a project with a 2012 PS&E, single slope parapet "__SS" should be used for the bridges.

Besides the new standards in Chapter 30 (and corresponding insert sheets), a number of standards had slight modifications to represent the single slope parapet rather than the LF parapet.

- Chapters 28 – Standards for strip seal and modular expansion joints were created to show cover plates for the single slope parapets. Please note that Chapter 28 standards showing LF parapets were re-numbered and moved to the back of the chapter. Eventually they will be moved to Chapter 40 – Bridge Rehabilitation. The insert sheets not only represent the parapet change, but enhancements were made to show a variety of situations including various sidewalk configurations, parapets, fences, etc.

- Chapter 17 – Deck overhang reinforcement tables are updated to include the new parapet shapes.

- Chapter 17 – The skew correction factor is to be applied to the entire girder for all girders in a multi-girder bridge. Previous policy was an exception to AASHTO applying the factor only to the exterior girders.

- Chapter 19 – Design of prestress girders over 158 ft. long require BOS approval.

- Chapter 40 – Clarified language with regards to deck widening.

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, clarification and new ideas for enhancement.

January 2012 Bridge Manual Text Update Summary

Chapter	Page Number(s)	Change
2	12	Reference Chapter 14 for retaining wall numbering criteria
3	3	Included "when possible" to detailing zero skew when skew below 2 degrees.
	3	Added reference to FDM regarding bridge approaches
5	All	Updated cost data
14	7	Typo
	8	Clarified criteria for whether a wall number is required
	31	Figure 14.4-1 updated.
	32	Variable symbol. Figure 14.4-2 updated.
	33	Figure 14.4-3 updated.
	34	Figure 14.4-4 updated.
	40	Figure 14.4-8 updated.
	41	Minor. Apostrophes on symbol not needed.
	52	Eccentricity replaces overturning
	55	Minor. Subscript on two variables fixed.
	67	Minor. Removed the word "check" after Eccentricity & Bearing Stress
	68	Removed the word "check" after Eccentricity & Bearing Stress. Φb changed to 0.55 (the revised table reference allows increase in value for retaining walls). Item 10 removed as it was the same as item 9.
	72	Table 14.6-1 added an additional pH category
	83,84	Minor formatting.
	91	Typo in LRFD table number reference.
	92	Typo in LRFD table number reference.
17	26	Changed "WisDOT exception to AASHTO" to "WisDOT policy item". Changed back to be more inline with AASHTO.
	66	Added reference to overhang tables for Single Slope Parapet
	68	Updated overhang tables to include Single Slope Parapet
19	44,45	Prestressed girders greater than 158 ft require BOS approval.

Chapter	Page Number(s)	Change
30	3,4	**NEW Policy item** regarding when to begin using the new Single Slope parapets.
	3	Noting that Type M railing is not allowed on prestressed box girders
	4	Refers to FDM 11-35-1, Table 1.1 for when to separate roadway from sidewalk
	7	Modified utility information to include new Single Slope parapets.
36	30	Typo (changed "not" to "no")
38	28	Updated crash wall requirements to reference Std 38.01.
	28	Changed reference from LF to SS for parapet type.
40	12	Revised deck replacement advice, particularly with regards to acceptable ratings after the replacement. **NEW Policy item** included.
	30	Minor. Changed example note to read 1'-6" embedment. This value had been 1'-0", which was for an uncoated bar. Coated bars are more typical.

January 2012 Standard Details Update Summary

Chapter 11

Std 11.01
- On CIP piles, 1/4" instead of 1/8" minimum backup ring thickness
- Removed note for grinding in lieu of backgouging
- Updated weld info in CIP piles: reference B-U4a or B-u4a-GF welds

Chapter 12

Std 12.01
- Included reference to new Single Slope parapets in Legend
- Minor typo in note for A1 bars in lower right corner

Std 12.02
- Included references to new Single Slope parapets

Std 12.03
- Included reference to new Single Slope parapets in Designer Notes

Std 12.04
- Included reference to new Single Slope parapets in Section W2

Std 12.05
- Showing shape of Single Slope in "Front Elevation"

Std 12.06
- Included reference to new Single Slope parapets in Section A2

Std 12.07
- Clarified Plan view with regards to edge of diaph. or slab

Chapter 14

Std 14.02
- Included references to new Single Slope parapets
- Added optional construction joint, with rustication and rubberized membrane waterproofing, to coping beneath barrier on MSE walls.
- Place coping expansion joints normal to top of coping when slope exceeds 1:8
- Cleaned up misc. note placement, leader lines, etc. in top 2 views

Chapter 17

Std 17.01
- Minor change showing Z-bar going from deck to sidewalk need only fit between the top and bottom layer of bars, not necessarily supporting the top mat of bars.

Chapter 18

Std 18.01
- Drip groove reference in "Pier Cap or Wall Type Pier" updated and half-filled triangle symbol removed
- Updated Reinf. Table to include "Single Slope Parapets"

Std 18.02
- Updated Reinf. Table to include "Single Slope Parapets"

Chapter 19

Std 19.02
- Note added to allow 0.5" dia. strands for undraped patterns

Std 19.04
- Note added to allow 0.5" dia. strands for undraped patterns

Std 19.15
- First "General Note" changed back to 15" smooth surface (Inadvertently changed to 8" in July, 2011 update)

Std 19.17
- First "General Note" changed back to 15" smooth surface (Inadvertently changed to 8" in July, 2011 update)

Std 19.17
- First "General Note" changed back to 15" smooth surface (Inadvertently changed to 8" in July, 2011 update)

Std 19.32
- Minor. Showing Single Slope parapet in "Slab Haunch Detail" blowup.

Std 19.38
- Minor. Removed unnecessary L/2 dimension.

Chapter 24

Std 24.01
- **REMOVED**. Obsolete, non-useful standard.

Std 24.02
- Minor. Showing Single Slope parapet in "Slab Overhang Definition"

Std 24.09
- Minor. Showing Single Slope parapet in Slab Haunch Detail blowup.

Std 24.12
- Bottom transverse bars in diaphs. correctly shown in bottom layer.
- Labeled two upper transverse diaphragm bars

Chapter 28

Std 28.01
- Modified Legend item #6 to cover Single Slope Parapets
- Modified first item in General Notes to cover small joint openings

Std 28.02
- Modified standard to show Single Slope Parapet details

Std 28.05
- Modified standard to show Single Slope Parapet details

NEW Std 28.07
- Moved all details in Standard 28.02 to Standard 28.07

NEW Std 28.08
- Moved all details in Standard 28.05 to Standard 28.08

Chapter 29

Std 29.01
- Minor. Showing Single Slope parapet in "Section A1".

Std 29.02
- Minor. Showing Single Slope parapet in "Section A1".

Chapter 30

Std 30.04
- Included Single Slope parapets in "Detail of Rail Bend at Abutments"
- Generalize "Anchor Bolts at Posts" for all parapet types.

Std 30.05
- Included Single Slope parapets in "Detail of Rail Bend at Abutments"
- Generalize "Anchor Bolts at Posts" for all parapet types.

Std 30.10
- Single Slope parapet shape shown.

Std 30.11
- Single Slope parapet shape shown.

Std 30.14
- Single Slope parapet shape shown.

Std 30.17
- Added bid item for "Pedestrian Railing" to match Special Provisions.

Std 30.18
- Changed bid item to match the Special Provisions

Std 30.21
- Single Slope parapet shape shown.
- Under "Notes", included NRTL testing as acceptable in addition to UL testing that was listed. This change was made to coincide with Approved Products List

NEW Std 30.30
- 32" Single Slope parapet (32SS)

NEW Std 30.31
- 36" Single Slope parapet (36SS)

NEW Std 30.32
- 42" Single Slope parapet (42SS)

NEW Std 30.33
- 56" Single Slope parapet (56SS)

Chapter 38

Std 38.01
- Under "Designer Notes", changed note to reflect Single Slope parapets rather than LF.

Chapter 40

Std 40.04
- #5 anchor depth corrected to 1'-6"
- Cleaned up longit. and transverse deck steel at diaphragms

Std 40.06
- Abutment widening parapets shown changed to Single Slope.

Std 40.10
- #5 anchor depth corrected to 1'-6"