

DATE: January 31, 2019  
TO: Bridge Manual Users  
FROM: DTSD – Bureau of Structures  
SUBJECT: **January 2019 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.

Of particular interest in this edition:

- **Various Chapters and Standards:** Federal Color Number references changed to AMS Standard Color Number. The actual color number remains the same, however.
- **Various Chapters:** Updated FDM references to reflect changes to the FDM.
- **Chapter 6:** New Section 6.3.3.8, Removing Old Structure and Debris Containment. This section describes the three STSPs regarding removing old structures over waterways, debris containment, etc. for various scenarios. **PLEASE FOLLOW THIS GUIDANCE.**
- **Design Example E24-2, Bolted Field Splice, LRFD:** A new, simplified field splice methodology is in the AASHTO LRFD Bridge Design Specifications 8<sup>th</sup> Edition.
- **New Chapter 41 – Structure Asset Management:** This chapter provides an outline of the WisDOT structures asset management process, including roles and responsibilities and policy items to be considered during the selection of structures improvement projects.
- **New Chapter 42 – Bridge Preservation:** This chapter provides goals, objectives, measures, and strategies for the preservation of bridges. This chapter contains criteria that is used to identify condition based and cyclical preservation, maintenance, and improvement work actions for bridges.
- **Standard 30.07:** The bar from the deck/sidewalk to the parapet has been shortened, with a second hairpin bar lapped on, similar to what is done for single slope parapets. Other 'Parapet A' drawings adjusted on various standards.
- **Standard 36.01:** Added construction joint between box culvert and apron.

- ***New Insert Sheet “Miscellaneous Details”***: A new insert sheet with miscellaneous details such as rodent shield, pile splice, etc. is now available. There are five detail sheets on this one DGN, which is just for organizational purposes. Use of the insert sheets is highly encouraged.

Most other changes are fairly minor. Please use the example calculations with care (follow along in AASHTO).

A vertical black bar in the left margin notes all text changes.

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 2019 Bridge Manual Text Update Summary

<u>Chapter</u>	<u>Page Number(s)</u>	<u>Change</u>
1	1	Updated index to reflect new chapters 41 & 42
3	3	Re-formatted FDM references (no change to FDM location)
	3	Updated FDM reference from 3.5.6 to 3-20-1
4	3,7	Changed text to <i>AMS Standard Color Number</i> to match Chapter 9
	9	Added items that cannot be put on bridges (city names, symbols, etc.)
5	3	Re-formatted FDM references (no change to FDM location)
	6	Added language describing what is, and isn't, included in costs
	6-13	Corrected Table numbers
6	6	Updated FDM reference from 21-30-1.3 to 20-50-5
	8	Removed FDM reference for project involvement
	14	Corrected WBM reference from 45.8.2 to 45.9.3
	16, 18	Re-formatted FDM references (no change to FDM location)
	33-35	Added Section 6.3.3.8 to clarify use of "Removing Old Structure" and "Debris Containment"
	42	Updated Section 6.4.28 with added guidance on "Removing Old Structure" and "Debris Containment"
	45	Added a link for a list of consultant firms eligible to provide structural design services to WisDOT
	47	Added Geotechnical Consultant item to Table 6.5-1
47	Updated FDM reference from 19.1 Attach. 1.2 to 19-22 Attach. 1.2	
7	31, 36	Re-formatted FDM references (no change to FDM location)
	31, 38	Updated FDM reference from 11-50-32 to 11-2
8	5, 12	Re-formatted FDM references (no change to FDM location)
	5	Updated FDM reference from 20-30-1 to 20-5-15
	5	Updated FDM references - Chapter 10,11,13, & 20
	10	Changed reference from FDM to WBM 8.1.3.2
	12	Changed FDM reference from 9-55-5 to 9-55
9	15,16	Updated to new <i>AMS Standard Color Number</i> reference and the link to its website, because it superseded the Federal Standard 595C color standards
	15	Added reference to Chapter 40 - Bridge Rehabilitation for additional information on painting
	16	Changed reference from Wisconsin Structure Inspection Manual to the Wisconsin Asset Management System (WiSAMS) for recommended paint maintenance on existing structures
	25	Re-formatted FDM references (no change to FDM location)

	27	Updated date for using tension bar development lengths and lap lengths
11	17	Re-formatted FDM references (no change to FDM location)
12	11	Re-formatted FDM references (no change to FDM location)
13	18	Better defined column height 'h' for temperature force calculations
	50	Re-formatted FDM references (no change to FDM location)
14	9	Re-formatted FDM references (no change to FDM location)
	21	Updated FDM reference from 11-55-52 to 11-55-5.4
	30	Corrected Rankine earth pressure equation (from phi to phi/2)
17	14	Changed Resistance Factor ( $\phi$ ) in Table 17.2-6 for Shear in Lightweight Concrete to match AASHTO LRFD - 8th Edition
	75	Re-formatted FDM references (no change to FDM location)
	76-81	Updated Section 17.10 for Concrete Deck Panels.
18	25	Removed text referring to lower limit of reinforcement spacing because it applies to higher strength reinforcement per AASHTO LRFD 8th Edition
19	7	Changed the minimum prestress concrete (at release) design strength from 0.75f <sub>c</sub> to 0.80f <sub>c</sub> .
19E -1	2	Updated example through LRFD 8th Edition -2017
	2, 17	Re-defined area of strand from "As" to "Astrand"
	5	Updated LRFD [Table 5.9.4.2.2-1] to LRFD [Table 5.9.2.3.2b-1]
	9, multiple	Updated Fatigue I Load Factor from 1.50 to 1.75
	18, multiple	Updated example using 44 strands (46 strands previously)
	14,19	Updated LRFD [5.9.5.3] to LRFD [5.9.3.3]
	14	Updated LRFD [C5.9.5.2.3a] to LRFD [C5.9.3.2.3a]
	17	Updated LRFD [5.9.4.2.2] to LRFD [5.9.2.3.2b]
	18	Updated number of strands from 46 to 44
	19	Updated LRFD [5.9.4.1.1] to LRFD [5.9.2.3.1a]
	20	Updated LRFD [Table 5.9.4.1.2-1] to LRFD [Table 5.9.2.3.1b]
	22	Updated LRFD [Table 5.12.3-1] to LRFD [Table 5.10.1-1]
	27	Updated LRFD [5.9.4.2] to LRFD [5.9.2.3.2]
	27	Updated LRFD [5.9.4.2.1] to LRFD [5.9.2.3.2a]
	27	Updated LRFD [5.9.4.2.2] to LRFD [5.9.2.3.2b]
	31	Updated LRFD [5.9.3] to LRFD [5.9.2]
	32	Updated LRFD [5.7.3.1.1] to LRFD [5.6.3.1.1]
	32	Updated LRFD [Table C5.7.3.1.1-1] to LRFD [Table C5.6.3.1.1-1]
	33	Updated LRFD [5.7.2.2] to LRFD [5.6.2.2]
	33	Updated LRFD [5.7.3.2] to LRFD [5.6.3.2]
	33	Updated LRFD [5.7.3.2.2] to LRFD [5.6.3.2.2]
34	Updated LRFD [5.5.4.2.1] to LRFD [5.5.4.2]	
34	Updated LRFD [5.7.3.3.2] to LRFD [5.6.3.3]	

	35	Updated <b>LRFD [5.7.2.2]</b> to <b>LRFD [5.6.2.2]</b>
	37	Example revised to include skew magnification factor
	38	Example updated using the General Procedure <b>LRFD [5.7.3.4.2]</b> for shear resistance
	39	Updated <b>LRFD [5.8.3.2]</b> to <b>LRFD [5.7.3.2]</b>
	39	Updated <b>LRFD [5.8.2.9]</b> to <b>LRFD [5.7.2.8]</b>
	40	Updated <b>LRFD [5.11.4.2]</b> to <b>LRFD [5.9.4.3.2]</b>
	41	Updated <b>LRFD [5.7.2.2]</b> to <b>LRFD [5.6.2.2]</b>
	45	Updated <b>LRFD [5.8.2.4]</b> to <b>LRFD [5.7.2.3]</b>
	46	Updated equation and section location for long. tension capacity "Tps"
	46	Updated <b>LRFD 5.8.3.5]</b> to <b>LRFD [5.7.3.5]</b>
	46	Updated <b>LRFD [5.11.4.2]</b> to <b>LRFD [5.9.4.3.2]</b>
	46	Updated average spacing of stirrups "s ave"
	46	Updated equation for longitudinal tension capacity at bearing "Tbreqd"
	47	Updated <b>LRFD [5.8.4.2]</b> to <b>LRFD [5.7.4.5]</b>
	47	Updated <b>LRFD [5.8.4.1]</b> to <b>LRFD [5.7.4.3]</b>
	48	Clarified maximum spacing used for interface shear resistance.
19E - 2	2	Updated example through LRFD 8th Edition -2017
	9,11,15,17,19,20	Updated Fatigue I Load Factor from 1.50 to 1.75
	13	Updated <b>LRFD [5.7.2.2]</b> to <b>LRFD [5.6.2.2]</b>
	13	Updated <b>LRFD [5.7.2.1]</b> to <b>LRFD [5.6.2.1]</b>
	14	Updated <b>LRFD [5.7.3.3.2]</b> to <b>LRFD [5.6.3.3]</b>
	14	Updated <b>LRFD [5.7.3.4]</b> to <b>LRFD [5.6.7]</b>
	18	Updated <b>LRFD [5.7.3.3.2]</b> to <b>LRFD [5.6.3.3]</b>
	19	Updated <b>LRFD [5.7.3.4]</b> to <b>LRFD [5.6.7]</b>
	20	Updated <b>LRFD [5.11.1.2.3]</b> to <b>LRFD [5.10.8.1.2c]</b>

24	38	Limiting overhangs for shallower steel girders.
	51	Updated faying surface value for Class A (from 0.33 to 0.30)
	89	Changed text to <i>AMS Standard Color Number</i> to match Chapter 9 references
24E -1	2	Updated Example with 8th Edition changes
	4,38	Updated Fatigue I load factor (from 1.50 to 1.75)
	14,19,20-27,36-38, 49-51, 53, 57-59, 63, 76	Updated moment and shear tables and figures based on recent updates for the Fatigue I load factor, a re-calculation of live loads, and corrected several calculations.
	37, 64	Added note stating fatigue check not satisfied
	67-68, 72-73	Updated shear connector pitch to 10 inches to satisfy fatigue limit state
24E - 2	All	Entire re-write to conform to new field splice design methodology in AASHTO 8th edition.

27	2	Added note that PS girder shrinkage shouldn't be included for rehabs
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30	10, 11	Re-formatted FDM references (no change to FDM location)
	11	Updated FDM reference from 11-45 Section 2.3.6.2.2 to 11-45-2.3.1.1
36E -1	3	Updated minimum size for pedestrian underpasses per 36.2
38	28	Clarified language regarding pedestrian fencing on bridges over RR
39	2	Changed FDM reference from 11-55-20.5 to 11-55-20.7
	3, 13, 14	Re-formatted FDM references (no change to FDM location)
	13, 14	Removed FDM reference 15-1-20
40	7, 28	Re-formatted FDM references (no change to FDM location)
	12	Updated thin polymer overlay thickness to 1/4-min total thickness
	12	Added thin polymer dead load guidance of 5 psf
	37	Added reference to the Wisconsin Asset Management System (WiSAMS) for recommended paint maintenance on existing structures
	43	Updated obsolete language regarding bearing replacement.
	56	Corrected reference link to section 40.16.2
41	All	<i>NEW</i>
42	All	<i>NEW</i>
45E -1	5,8,10,12	Changed LRFD [5.7.2.2] reference to LRFD [5.6.2.2] to match AASHTO - 8th Edition
	5,6	Changed LRFD [5.7.2.1] reference to LRFD [5.6.2.1] to match AASHTO - 8th Edition
	9	Changed LRFD [5.14.4.1] reference to LRFD [5.12.2.1] to match AASHTO - 8th Edition
45E - 2	9	Changed LRFD Table [C5.7.3.1.1-1] reference to LRFD Table [C5.6.3.1.1-1] to match AASHTO - 8th Edition
	10	Changed LRFD [5.7.3.1.1] reference to LRFD [5.6.3.1.1] to match AASHTO - 8th Edition
	10	Changed LRFD [5.7.2.2] reference to LRFD [5.6.2.2] to match AASHTO - 8th Edition
	11	Changed LRFD [5.7.3.2] reference to LRFD [5.6.3.2] to match AASHTO - 8th Edition
	11	Changed LRFD [5.7.3.2.2] reference to LRFD [5.6.3.2.2] to match AASHTO - 8th Edition
	11	Changed LRFD [5.5.4.2.1] reference to LRFD [5.5.4.2] to match AASHTO - 8th Edition
	11	Changed LRFD [5.7.3.3.2] reference to LRFD [5.6.3.3] to match AASHTO - 8th Edition
	12	Changed LRFD [5.9.5.2] reference to LRFD [5.9.3.2] to match AASHTO - 8th Edition
	13	Changed LRFD [5.9.5.3] reference to LRFD [5.9.3.3] to match AASHTO - 8th Edition

	14	Changed LRFD [5.8.3.2] reference to LRFD [5.7.3.2] to match AASHTO - 8th Edition
	14	Changed LRFD [5.8.2.9] reference to LRFD [5.7.2.8] to match AASHTO - 8th Edition
	16,20	Changed LRFD [5.11.4.2] reference to LRFD [5.9.4.3.2] to match AASHTO - 8th Edition
	16	Changed LRFD [5.8.3.3] reference to LRFD [5.7.3.3] to match AASHTO - 8th Edition
	19	Changed LRFD Eq [5.8.3.3-4] reference to LRFD Eq [5.7.3.3-4] to match AASHTO - 8th Edition
	19	Changed LRFD [C5.8.3.3-1] reference to LRFD [C5.7.3.3-1] to match AASHTO - 8th Edition
	19	Changed LRFD [5.8.3.5] reference to LRFD [5.7.3.5] to match AASHTO - 8th Edition
	22	Changed LRFD [5.9.4.2.2] reference to LRFD [5.9.2.3.2b] to match AASHTO - 8th Edition
45E - 3	10	Changed LRFD [5.7.2.2] reference to LRFD [5.6.2.2] to match AASHTO - 8th Edition
45E - 4	6	Removed LRFD reference for f'c
	17	Changed figure reference E453.4-1 to E45-4.4-1
45E - 8	19	Changed figure reference 24E1.17-1 to E45-8.7-1

## **January 2019 Standard Details Update Summary**

### **Chapter 4**

- Std 4.01 ■ No revisions.
- Std 4.02 ■ No revisions.
- Std 4.03 ■ No revisions.
- Std 4.04 ■ Updated Vertical Face Parapet 'A' width and notes
- Std 4.05 ■ No revisions.

### **Chapter 7**

- Std 7.01 ■ No revisions.
- Std 7.02 ■ No revisions.
- Std 7.03 ■ Updated "Grouted Bar Coupler" specification reference to 505.1000.S
- Std 7.04 ■ No revisions.
- Std 7.05 ■ Updated "Grouted Bar Coupler" specification reference to 505.1000.S
- Std 7.06 ■ No revisions.
- Std 7.07 ■ No revisions.

### **Chapter 9**

- Std 9.01 ■ No revisions.
- Std 9.02 ■ Changed "Finish Grade" to "Finished Grade"
- Std 9.03 ■ No revisions.

### **Chapter 11**

- Std 11.01 ■ No revisions.

### **Chapter 12**

- Std 12.01 ■ Added note to clarify joint filler thickness for slab structures
- Std 12.02 ■ No revisions.
- Std 12.03 ■ Added note stating that no. 9 stainless bar should be on abut. sht.
- Std 12.04 ■ No revisions.
- Std 12.07 ■ No revisions.
- Std 12.08 ■ Added note to clarify joint filler thickness for slab structures
- Std 12.09 ■ No revisions.
- Std 12.10 ■ Corrected Designer Note for structural approach slab usage per 1/18 update
  - Added designer note "show design data on first sheet of plans"
  - Clarified concrete strength is for the slab and footing
- Std 12.11 ■ No revisions.
- Std 12.12 ■ Corrected symbol orientation used for R501 bars
- Std 12.13 ■ No revisions.

### **Chapter 13**

- Std 13.01 ■ No revisions.
- Std 13.02 ■ No revisions.
- Std 13.03 ■ Clarified note for shaft tie bar location.
  - Cleaned up some leader lines, arrowheads, etc.
- Std 13.04 ■ Added NOTE referencing Standard Spec for pile painting
  - Removed joint filler details
- Std 13.05 ■ No revisions.
- Std 13.06 ■ No revisions.
- Std 13.07 ■ No revisions.
- Std 13.08 ■ No revisions.

- Std 13.10 ■ No revisions.
- Std 13.11 ■ No revisions.

#### **Chapter 14**

- Std 14.02 ■ No revisions.
- Std 14.03 ■ Removed Design Data note for wall aesthetics
- Std 14.04 ■ No revisions.
- Std 14.05 ■ No revisions.
- Std 14.11 ■ No revisions.
- Std 14.12 ■ Updated note to say "geotextile" rather than "filter fabric"
- Std 14.13 ■ No revisions.

#### **Chapter 15**

- Std 15.01 ■ Corrected Section A-A arrow heads
- Std 15.02 ■ No revisions.
- Std 15.03 ■ No revisions.

#### **Chapter 17**

- Std 17.01 ■ No revisions.
- Std 17.02 ■ No revisions.
- Std 17.03 ■ Modified flashing detail and added more notes

#### **Chapter 18**

- Std 18.01 ■ No revisions.
- Std 18.02 ■ No revisions.

#### **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 ■ Clarified boxed note for diaphragm spacing
- Std 19.33 ■ Added note stating that no. 9 stainless bar should be on abut. or abut. diaph sht.
- Std 19.34 ■ Added note stating that no. 9 stainless bar should be on abut. or abut. diaph sht.
- Std 19.35 ■ Added note stating that no. 9 stainless bar should be on abut. or abut. diaph sht.
- Std 19.36 ■ No revisions.
- Std 19.37 ■ No revisions.
- Std 19.38 ■ No revisions.
- Std 19.50 ■ No revisions.
- Std 19.51 ■ No revisions.
- Std 19.52 ■ No revisions.

- Std 19.53 ■ No revisions.
- Std 19.54 ■ No revisions.
- Std 19.55 ■ No revisions.
- Std 19.56 ■ No revisions.

### **Chapter 23**

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

### **Chapter 24**

- Std 24.02 ■ Added Designer Note to see Std 40.07 for adding stiffeners to existing girders
- Removed note "See Standard 24.07 for kinked girders details" from "Field Splice Details"
- 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 ■ No revisions.
- Std 24.12 ■ No revisions.

### **Chapter 27**

- Std 27.02 ■ Clarified welding for steel bearings to girders on rehabilitation projects
- Std 27.05 ■ No revisions.
- Std 27.06 ■ No revisions.
- Std 27.07 ■ Added note that prestressed girder shrinkage should not be included for rehabs
- Std 27.08 ■ Clarified welding for steel bearings to girders on rehabilitation projects
- Std 27.09 ■ No revisions.
- Std 27.10 ■ No revisions.

### **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 30.02 ■ No revisions.
- Std 30.04 ■ No revisions.
- Std 30.05 ■ No revisions.
- Std 30.07 ■ Changed vertical reinforcement - similar to Single Slope Parapet using 2 bars.

- Replaced Type 'H' Rail with Combination Railing.
- Corrected 8" vertical BF dimension to reference bottom of fillet and rustication.
- Added 4" dimension for locating name plate
- Std 30.08 ■ Changed vertical reinforcement - similar to Single Slope Parapet using 2 bars.
- Changed parapet width - similar to Vert. Face Parapet 'A'
- Removed "Bill of Bars" and other reinforcement information (See 30.07)
- Std 30.09 ■ Changed "Federal Color No." to "AMS Std. Color No." because the latter has superseded the former
- Std 30.10 ■ Updated "Section Thru Parapet on Bridge" detail - redrawn to scale (+/-)
- Std 30.11 ■ Updated "Section Thru Fence on Parapet 'A' " detail - redrawn to scale (+/-)
- Removed single slope parapet height dimension
- Corrected WBM reference from 30.3 (8) to 30.3(10).
- Std 30.12 ■ **Now archived as Std 40.27. Sloped Faced Parapet 'LF' not used for new designs**
- Std 30.13 ■ **Now archived as Std 40.28. Sloped Faced Parapet 'HF' not used for new designs**
- Std 30.14 ■ No revisions.
- Std 30.15 ■ Changed "Federal Color No." to "AMS Std. Color No." because the latter has superseded the former
- Std 30.16 ■ Changed "Federal Color No." to "AMS Std. Color No." because the latter has superseded the former
- Std 30.17 ■ Updated parapet to match Standard 30.07 (without concrete window aesthetics)
- Added "Detail B" showing Curved Member Joint for Type "C3" Combination Rail
- Changed "Federal Color No." to "AMS Std. Color No."
- Std 30.18 ■ Changed "Federal Color No." to "AMS Std. Color No." because the latter has superseded the former
- Std 30.19 ■ No revisions.
- Std 30.20 ■ No revisions.
- Std 30.21 ■ No revisions.
- Std 30.22 ■ No revisions.
- Std 30.24 ■ No revisions.
- Std 30.25 ■ No revisions.
- Std 30.26 ■ Changed "Federal Color No." to "AMS Std. Color No." because the latter has superseded the former
- Std 30.27 ■ Changed "Federal Color No." to "AMS Std. Color No." because the latter has superseded the former
- Std 30.28 ■ No revisions.
- Std 30.29 ■ No revisions.
- 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 ■ Added const. joints between the box culvert and apron in the bottom slab
- Updated Designer Note "For...Const. Joint Details see Standard 36.03"
- Updated details - redrawn to scale (+/-)
- Std 36.02 ■ Updated reinforcement between the box culvert and apron in the "Apron Detail"
- Moved "Vertical Construction Joint" detail to Std. 36.03
- Std 36.03 ■ Added Const. Joint to Section C2 (between apron and box culvert)

- Added "Apron Connection Detail"
- Updated "Vertical Construction Joint" detail
- Added rubberized waterproofing membrane to "Vertical Construction Joint" detail.
- Updated "Section C5" without a haunch (typical all inlets)
- Added "Haunch Detail". Use only when required as per design.
- Updated rubberized membrane waterproofing notes and requirements
- Added sheet membrane waterproofing notes and requirements

- 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 39.02 ■ No revisions.
- Std 39.03 ■ No revisions.
- Std 39.09 ■ No revisions.
- Std 39.10 ■ No revisions.
- Std 39.11 ■ No revisions.
- Std 39.12 ■ No revisions.
- Std 39.13 ■ No revisions.

### **Chapter 40**

- Std 40.01 ■ No revisions.
- Std 40.02 ■ No revisions.
- Std 40.03 ■ No revisions.
- Std 40.04 ■ No revisions.
- Std 40.05 ■ No revisions.
- Std 40.06 ■ No revisions.
- Std 40.07 ■ No revisions.
- Std 40.08 ■ Added note that prestressed girder shrinkage should not be included for rehabs
- 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 ■ Added "Area" and "Weight" of Parapet as is shown for other Concrete Parapets

- 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 ■ Changed "Federal Color No." to "AMS Std. Color No." because the latter has superseded the former
- Std 40.26 ■ No revisions.
- NEW* Std 40.27 ■ Std 30.12 Sloped Faced Parapet 'LF' not used for new designs
- NEW* Std 40.28 ■ Std 30.13 Sloped Faced Parapet 'HF' not used for new designs
- Std 40.31 ■ No revisions.
- Std 40.32 ■ Corrected "Rapid Set Deck Repair" bid item number to SPV.0035
- Std 40.33 ■ No revisions.
- Std 40.34 ■ No revisions.
- Std 40.40 ■ No revisions.
- Std 40.41 ■ No revisions.