

DATE: July 28, 2021
TO: Bridge Manual Users
FROM: DTSD – Bureau of Structures
SUBJECT: **July 2021 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:

- **Chapters and Examples (numerous)** – AASHTO 9th Edition reference updates
- **Chapters 6** – Updated how concrete quantities are shown on contract plans. Plans using unit quantities (e.g. Pier 1) should be shown to the nearest 0.1 cubic yard. Show total quantity to the nearest cubic yard.
- **Chapters 18** – Added Section 18.5 – Standard Concrete Slab Design Procedure. This section provides guidance on the Standard Bridge Design Tool (SBDT) to efficiently design and draft single span concrete slab bridges. Note: The SBDT web-based application is currently not available. User's will be notified once the application becomes available.
- **Chapters 19 and 40** – Archived 36-inch PS girder (older shape) from Chapter 19 to Chapter 40. This shape should not be considered for new designs. Additionally, Standards 19.03 and 19.04 have been achieved to Standards 40.42 and 40.43, respectively.
- **Chapter 45** – SHV load posting analysis threshold changed from 1.2 to 1.3 (HS24 to HS26) using LFR/ASR methodology
- **New Standard 18.03 – Concrete Slab Details:** Slab camber, top of slab elevations, and survey elevation requirements are shown, with examples of tables and diagrams.
- **New Standard 30.12 – Chain Link Fence Side-Mounted Details:** Detail may be considered when the design speed exceeds 45 mph and protective screening is warranted. Updated Section 30.2-Railing Application accordingly.
- **Standard 40.10:** Added notes and a table for adding girder reactions (DL, and if applicable, LL) for bridge jacking.

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.

July 2021 Bridge Manual Text Update Summary

<u>Chapter</u>	<u>Page</u> <u>Number(s)</u>	<u>Change</u>
5	5	Added FDM 19-5-5 reference and link to Estimating Tools website
6	16	Simplified language on BOS responsibility to get FHWA preliminary plans of unique structures to FHWA for review.
	18	Updated drafting standards for plan development
	32	Clarified titles of WisDOT and DNR personnel and letters
	38	Updated guidance on concrete quantities. Show concrete unit quantities (e.g. Pier 1) to the nearest 0.1 CY. The total quantity is to be shown to the nearest CY.
9	14	Corrected spec reference to 516.2.3 (typo)
12	13	Corrected formula for wing length related to Fig 12.4-2
13	26	Corrected Load Factors for Extreme Event II (Deadload) in Table 13.5-1
	29	Changed LRFD [5.7.3.4] to LRFD [5.6.7] to match current AASHTO 9th Edition
	49	Moved the Overall Stability Check from Service Limit State to Strength Limit State to match current AASHTO 9th Edition
13E-1	2	Updated sentence to state that Example is current through AASHTO LRFD 9th Edition - 2020
	3	Changed LRFD [Table 5.12.3-1] to LRFD [Table 5.10.1-1] to match current AASHTO 9th Edition
	35	Changed LRFD [5.7.3.4] to LRFD [5.6.7] to match current AASHTO 9th Edition
	37	Changed LRFD [5.6.3.1] to LRFD [5.8.2.1] to match current AASHTO 9th Edition
	37	Changed LRFD [C5.6.3.1] to LRFD [C5.8.2.1] to match current AASHTO 9th Edition
	37,47	Changed LRFD [5.6.3.2] to LRFD [5.8.2.2] to match current AASHTO 9th Edition
	41,46,48,50	Changed LRFD [5.6.3.5] to LRFD [5.8.2.5] to match current AASHTO 9th Edition
	41	Changed LRFD [5.7.5] to LRFD [5.6.5] to match current AASHTO 9th Edition
	41,46	Changed LRFD [5.6.3.5.3a] to LRFD [5.8.2.5.3a] to match current AASHTO 9th Edition
	43,44	Changed LRFD [5.6.3.4.1] to LRFD [5.8.2.4.1] to match current AASHTO 9th Edition
	45,51	Changed LRFD [5.6.3.6] to LRFD [5.8.2.6] to match current AASHTO 9th Edition
	49	Changed LRFD [5.6.3.4.2] to LRFD [5.8.2.4.2] to match current AASHTO 9th Edition
49	Changed LRFD [5.11.2.4] to LRFD [5.10.8.2.4] to match current AASHTO 9th Edition	

	50	Changed LRFD [5.6.3.5.3b] to LRFD [5.8.2.5.3b] to match current AASHTO 9th Edition
	54	Changed LRFD [5.7.4.2] to LRFD [5.6.4.2] to match current AASHTO 9th Edition
	55	Changed LRFD [5.7.4.3] to LRFD [5.6.4.3] to match current AASHTO 9th Edition
	56	Changed LRFD [5.5.4.2.1] to LRFD [5.5.4.2] to match current AASHTO 9th Edition
	56	Changed LRFD [5.7.2.1] to LRFD [5.6.2.1] to match current AASHTO 9th Edition
	57	Changed LRFD [5.7.2.2] to LRFD [5.6.2.2] to match current AASHTO 9th Edition
	57	Changed LRFD [Table C5.7.2.1-1] to LRFD [Table C5.6.2.1-1] to match current AASHTO 9th Edition
	58,59	Changed LRFD [Eqn. 5.7.4.5-3] to LRFD [Eqn. 5.6.4.5-3] to match current AASHTO 9th Edition
	58	Changed LRFD [Eqn. 5.7.4.5-1] to LRFD [Eqn. 5.6.4.5-1] to match current AASHTO 9th Edition
	59	Changed LRFD [5.8.2.9] to LRFD [5.7.2.8] to match current AASHTO 9th Edition
	60,78	Changed LRFD [5.8.3.3] to LRFD [5.7.3.3] to match current AASHTO 9th Edition
	61	Changed LRFD [5.8.4] to LRFD [5.7.4] to match current AASHTO 9th Edition
	61	Changed LRFD [5.8.4.3] to LRFD [5.7.4.4] to match current AASHTO 9th Edition
	69	Changed LRFD [5.7.3.3.2] to LRFD [5.6.3.3] to match current AASHTO 9th Edition
	73,75	Changed LRFD [5.13.3.6.3] to LRFD [5.12.8.6.3] to match current AASHTO 9th Edition
	74,76	Changed LRFD [5.13.3.6.1] to LRFD [5.12.8.6.1] to match current AASHTO 9th Edition
	76	Changed LRFD [5.8.3.2] to LRFD [5.7.3.2] to match current AASHTO 9th Edition
13E-2	2	Updated sentence to state that Example is current through AASHTO LRFD 9th Edition - 2020
	3	Changed LRFD [Table 5.12.3-1] to LRFD [Table 5.10.1-1] to match current AASHTO 9th Edition
	16,18,21,22	Changed LRFD [5.7.2.2] to LRFD [5.6.2.2] to match current AASHTO 9th Edition
	16,18,21,23	Changed LRFD [5.7.3.3.2] to LRFD [5.6.3.3] to match current AASHTO 9th Edition
	17,18,21,23,28	Changed LRFD [5.7.3.4] to LRFD [5.6.7] to match current AASHTO 9th Edition
	19	Changed LRFD [5.11.1.2.1] to LRFD [5.10.8.1.2a] to match current AASHTO 9th Edition
	23	Changed LRFD [5.11.1.2.3] to LRFD [5.10.8.1.2c] to match current AASHTO 9th Edition

	25	Changed LRFD [5.8.3.3] to LRFD [5.7.3.3] to match current AASHTO 9th Edition
	25	Changed LRFD [5.8.3.4.1] to LRFD [5.7.3.4.1] to match current AASHTO 9th Edition
	27	Changed LRFD [5.8.2.5] to LRFD [5.7.2.5] to match current AASHTO 9th Edition
	27	Changed LRFD [5.8.2.7] to LRFD [5.7.2.6] to match current AASHTO 9th Edition
	28	Changed LRFD [5.10.8] to LRFD [5.10.6] to match current AASHTO 9th Edition

14	29	Corrected Coulomb earth pressure theory eq'n per AASHTO LRFD
	53	Corrected Figure 14.4-1 link
	110, 131	Updated Soil Nail Wall design reference to FHWA-NHI-14-007

17	13	Corrected Load Factors for "Extreme Event II (Deadload)" in Table 17.2-5
	14	Corrected Resistance Factors for "Axial Compression, Steel Only" and "A307 Bolts in Shear" in Table 17.2-6

18	21	Highlighted Diagram and Tables to be placed on the Plans, and referenced Standard 18.03 where details for these items are presented
	33-35	Added Section 18.5 - Standard Concrete Slab Design Procedure
	36	Changed Design Example from Section 18.5 to Section 18.6
18E-1	18E1-3	Updated sentence to state that Example is current through AASHTO LRFD 9th Edition - 2020

19	41	Removed the 36-inch PS girder shape from Figure 19.3-7
	42	Archived the 36-inch PS girder shape to Chapter 40
	42	Added 36W" to list of shapes using 4" haunch height for dead load
	43	Removed the 36-inch PS girder shape from Table 19.3-1

24	7	Added reference LRFD [6.10.1.10.2] for web-load shedding factor (R_b)
	11,27	Updated date of publication for AASHTO/NSBA G12.1
	26	Updated reference LRFD [C6.10.3.4] which changed to LRFD [C6.10.2.2] in going from AASHTO 8th Edition to the 9th Edition
	26,27	Changed variable names and defined variables to match current LRFD [C6.10.2.2] in the AASHTO 9th Edition
	35	Corrected Table reference LRFD [Table 6.6.2-1] to LRFD [Table 6.6.2.1-2] for fracture critical temperature zones
	35	Corrected Table reference LRFD [Table 6.6.2-2] to LRFD [Table C6.6.2.1-1] for fracture toughness requirements
	35	Updated reference LRFD [6.6.2] to LRFD [6.6.2.2]
	40,68	Added "Eq'n" to LRFD Reference
	52	Updated reference LRFD [6.13.6.1.4a] to LRFD [6.13.6.1.3a]
	53,54	Updated reference LRFD [6.13.6.1.4a] to LRFD [6.13.6.1.3a,b]
	53	Updated reference LRFD [C6.13.6.1.4a] to LRFD [C6.13.6.1.3a,b]
	54,55	Updated reference LRFD [C6.13.6.1.4c] to LRFD [C6.13.6.1.3a,b]

	54,58	Updated reference LRFD [6.13.6.1.4c] to LRFD [6.13.6.1.3a,b]
	58	Updated reference LRFD [6.13.6.1.5] to LRFD [6.13.6.1.4]
	59,65	Modified check of bearing at the bolt holes to match update to LRFD [6.13.2.9] as shown in the AASHTO 9th Edition
	59,61,62,63	Updated reference LRFD [6.13.6.1.4b] to LRFD [6.13.6.1.3a,c]
	60	Updated reference LRFD [C6.13.6.1.4b] to LRFD [C6.13.6.1.3c]
	69	Updated resistance factor for axial compression (steel only) from LRFD [6.5.4.2]
	69	Clarified equations from LRFD [6.9.4.1] and provided additional definitions of variables for axial resistance of bearing stiffeners

27E-1	27E1-2	Updated sentence to state that Example is current through AASHTO LRFD 9th Edition - 2020
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30	7	Added note for bridge railings on un-posted roadways to assume a design speed limit of 55 mph for determining the appropriate bridge railing.
	9	Updated top-mounted chain link fencing and tubular screening guidance to limit usage to design speeds 45 mph or less
	9	Added side-mounted chain link fencing guidance for design speeds exceed 45mph and when protective screening is warranted

36	10	Corrected LRFD Reference Number Typing Error
	12	Removed text referring to lower limit of reinforcement spacing because it applies to higher strength reinforcement
	13	Clarified the definition of "d _c " for box culverts with no fill on top slab
	18	Referenced LRFD [3.6.1.2.6a] and its guidance on when to follow the design method in LRFD [4.6.2.10] instead of LRFD [3.6.1.2.6b-c] for a culvert that has fill of 2 feet or more. Meant to provide a smooth transition between shallow fills and fills of 2 feet or more
	36E-1	2
	19	Changed LRFD [5.7.3.2.2] to LRFD [5.6.3.2.2] to match current AASHTO 9th Edition
	20	Changed LRFD [5.7.2.2] to LRFD [5.6.2.2] to match current AASHTO 9th Edition
	20	Changed LRFD [5.7.2.1] to LRFD [5.6.2.1] to match current AASHTO 9th Edition
	21	Changed LRFD [5.7.3.2.3] to LRFD [5.6.3.2.3] to match current AASHTO 9th Edition
	21, 26	Changed LRFD [5.7.3.3.2] to LRFD [5.6.3.3] to match current AASHTO 9th Edition
	22	Changed LRFD [5.7.3.4] to LRFD [5.6.7] to match current AASHTO 9th Edition
	23, 24	Changed LRFD [5.10.8] to LRFD [5.10.6] to match current AASHTO 9th Edition
	25	Changed LRFD [5.14.4.1] to LRFD [5.12.2.1] to match current AASHTO 9th Edition

	28	Changed LRFD [5.11.1.2.1] to LRFD [5.10.8.1.2a] to match current AASHTO 9th Edition
	28	Changed LRFD [5.11.1.2.3] to LRFD [5.10.8.1.2c] to match current AASHTO 9th Edition
	31,32	Changed LRFD [5.14.5.3] to LRFD [5.12.7.3] to match current AASHTO 9th Edition
	32	Changed LRFD [5.8] to LRFD [5.7] to match current AASHTO 9th Edition
	32	Changed LRFD [5.13.3.6] to LRFD [5.12.8.6] to match current AASHTO 9th Edition
	32	Changed LRFD [5.8.3.3] to LRFD [5.7.3.3] to match current AASHTO 9th Edition
	32	Changed LRFD [5.8.3.4.1] to LRFD [5.7.3.4.1] to match current AASHTO 9th Edition
	33	Changed LRFD [5.8.2.9] to LRFD [5.7.2.8] to match current AASHTO 9th Edition

39	21	Removed blank sheet
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40	30,31	Added the 36" Standard Girder Shape to Section and to Table 40.7-1
	35	Eliminated encapsulation language. Now focused on Concrete Surface Repair, with possible FRP.
	37	Added Section 40.11.3 for patching PS girders over travel lanes

45	27,28,30,63	SHV load posting analysis threshold changed from 1.2 to 1.3 (HS24 to HS26) using LFR/ASR methodology
45E-4	14	Corrected LRFD Reference Number Typing Error
	15	Added "Table" to LRFD Reference
45E-8	25	SHV load posting analysis threshold changed from 1.2 to 1.3 (HS24 to HS26) using LFR/ASR methodology

July 2021 Standard Details Update Summary

Chapter 4

- Std 4.01 ■ No revisions.
- Std 4.02 ■ No revisions.
- Std 4.03 ■ No revisions.
- Std 4.04 ■ No revisions.
- Std 4.05 ■ No revisions.

Chapter 7

- Std 7.01 ■ No revisions.
- Std 7.02 ■ No revisions.
- Std 7.03 ■ No revisions.
- Std 7.04 ■ No revisions.
- Std 7.05 ■ No revisions.
- Std 7.06 ■ No revisions.
- Std 7.07 ■ No revisions.

Chapter 9

- Std 9.01 ■ Updated abutment sections to show full MSE wall details
- Std 9.02 ■ No revisions.
- Std 9.03 ■ No revisions.

Chapter 11

- Std 11.01 ■ Added #3 bar weight for quantity calculations

Chapter 12

- Std 12.01 ■ Added detail "Slab Span With Semi Expansion Seat" for abutment ends.
- Std 12.02 ■ No revisions.
- Std 12.03 ■ No revisions.
- Std 12.04 ■ No revisions.
- Std 12.07 ■ Added 1'-0" lap dimension to Section A-A
- Std 12.08 ■ Rearranged and labeled notes for clarification
- Std 12.09 ■ No revisions.
- Std 12.10 ■ No revisions.
- Std 12.11 ■ No revisions.
- Std 12.12 ■ No revisions.
- Std 12.13 ■ No revisions.

Chapter 13

- Std 13.01 ■ Corrected AASHTO Article # referenced in Section P1
 - Added note in Section P1 to stagger splices of circular ties per LRFD [5.10.4.3]
- Std 13.02 ■ In Section P1, changed 180° hooked end to 135° and added note to alternate hooked ends vertically per LRFD [5.10.4.3]
 - Changed maximum spacing between cross-ties to 24" to match LRFD [5.10.4.3] in Section P1
- Std 13.03 ■ No revisions.
- Std 13.04 ■ Added Designer Note to see std 11.01 for required pile reinforcing details
- Std 13.05 ■ No revisions.
- Std 13.06 ■ In Section P1, changed 180° hooked end to 135° and added note to alternate hooked ends vertically per LRFD [5.10.4.3]
 - Changed maximum spacing between cross-ties to 24" to match LRFD [5.10.4.3]

in Section P2

- Std 13.07 ■ Clarify bar clearance for piers with rustications
- Std 13.08 ■ No revisions.
- Std 13.09 ■ No revisions.
- Std 13.10 ■ No revisions.
- Std 13.11 ■ No revisions.

Chapter 14

- Std 14.02 ■ No revisions.
- Std 14.03 ■ No revisions.
- Std 14.04 ■ No revisions.
- Std 14.05 ■ No revisions.
- Std 14.11 ■ No revisions.
- Std 14.12 ■ No revisions.
- Std 14.13 ■ No revisions.

Chapter 15

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

Chapter 17

- Std 17.01 ■ Added designer note: dead loads shall be based on a 2% sidewalk x-slope
- Std 17.02 ■ No revisions.
- Std 17.03 ■ Added overlap note and clarified caulk shall be a non-bituminous joint sealer

Chapter 18

- Std 18.01 ■ Clarified location where "Top of Slab Elevations" are to be provided and also referenced new Std. 18.03
- Std 18.02 ■ Clarified location where "Top of Slab Elevations" are to be provided and also referenced new Std. 18.03
- NEW** Std 18.03 ■ Showing required "Camber and Slab Thickness Diagram", "Top of Slab Elevations" table and "Survey Top of Slab Elevations" table to be placed on the Contract Plans.

Chapter 19

- Std 19.01 ■ No revisions.
- Std 19.02 ■ No revisions.
- Std 19.03 ■ Archived as Std. 40.42. 36" PS Girders not used for new designs
- Std 19.04 ■ Archived as Std. 40.43. 36" PS Girders not used for new designs
- 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 19.50 ■ 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 ■ No revisions.
- Std 24.03 ■ No revisions.
- Std 24.04 ■ Removed two erection bolts in welded detail as those are fabricator's choice
- 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 ■ 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 ■ 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 ■ No revisions.
- Std 30.08 ■ No revisions.
- Std 30.09 ■ No revisions.
- Std 30.10 ■ No revisions.
- Std 30.11 ■ Clarified designer note: dead loads shall be based on a 2% sidewalk x-slope
- New* Std 30.12 ■ Chain Link Fence Side-Mounted Details. See Section 30.2 for more information.
- Std 30.14 ■ No revisions.
- Std 30.15 ■ No revisions.
- Std 30.16 ■ Added "End Post Detail" to clarify S609 and S610 bars at acute corners
- 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 30.22 ■ No revisions.
- Std 30.24 ■ No revisions.
- Std 30.25 ■ No revisions.
- Std 30.26 ■ No revisions.
- Std 30.27 ■ No revisions.
- 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 ■ No revisions.
- Std 36.02 ■ No revisions.
- Std 36.03 ■ Corrected symbol location for "Top Bars For Top Slab" in Designer Notes
- 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 ■ Updated SDD references for beam guard posts and concrete barrier
- 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 ■ No revisions.
- Std 40.09 ■ No revisions.
- Std 40.10 ■ Added details and notes for providing DL & LL values for bridge jacking
- 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.
- Std 40.26 ■ No revisions.
- Std 40.27 ■ No revisions.
- Std 40.28 ■ No revisions.
- Std 40.31 ■ Added Designer Note for optional longitudinal construction joint
- Std 40.32 ■ No revisions.
- Std 40.33 ■ No revisions.
- Std 40.34 ■ No revisions.
- Std 40.40 ■ No revisions.
- Std 40.41 ■ No revisions.
- Std 40.42 ■ Std. 19.03 36" PS Girders not used for new designs

New

New Std 40.43 ■ Std. 19.04 36" PS Girders not used for new designs