

DATE: July 24, 2025

TO: Bridge Manual Users

FROM: DTSD – Bureau of Structures

SUBJECT: July 2025 Bridge Manual Update

The Bridge Manual revisions to text and standards are now complete and posted online for this sixmonth cycle. Please see the attached sheets for a list, with brief explanation, of the Text, Standards, Inserts and Blocks that were revised.

Of particular interest in this edition:

- Chapter 5 Added 2024 bridge cost data.
- Chapter 6 Added Section 6.3.3.8.3 False Decking. In some cases, false decking systems are required and language in the form of stp-502-015 should be included in the contract (available in the next ASP-6).
- Chapter 24 Added Section 24.14.1 Redundancy in Floor Systems and Section 24.14.2 Simplified System Redundancy Analysis.
- Chapter 36 Updated Standards for precast box culverts and referencing new SPV "Precast Concrete Wingwalls (Structure)" and "Precast concrete Box Culvert, (Span Size) FT X (Rise Size) FT". The existing Standardized Special Provisions (STSP) for precast box culverts and wingwalls will be removed at a later date.
- New Standard 30.41 Vertical Face Parapet 'A' With Raised Sidewalk: Added a modified Vertical Face Parapet 'A' (Standard 30.07) to accommodate a raised sidewalk. This is an alternative to the detail provided on Standard 17.01 with no overhang and applicable for raised sidewalks on structural approach slabs as shown on Standard 12.11.

Additional Notes:

- The 2026 Standard Specifications (Standard Spec) will not be published this year. Modifications to the Standard Spec will be incorporated with next Additional Special Provision 6 (ASP-6).
- Civil 3D Structure Blocks were updated 5/14/2025. For additional information, refer to C3DKB and the *New* July 2025 Block Details Update Summary.

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 2025 Bridge Manual Text Update Summary

Page **Chapter** Number(s) **Change** Updated Figure 2.1-2 "Regional Structures Inspection & Maintenance Unit A Greg Haig" and "Regional Structures Inspection & Maintenance Unit B - Scott Reav" Provided additional guidance for assigning structure numbers 13-15 Added Figure 2.5-2 Structure Numbers for Closed and Open Medians 16 25,29,32 Minor format changes Added 2024 Cost Data, Removed 2019 Cost Data 5 6-9 6 22 Added "structural approach slab" as a separate column for the Estimated Quantities table. 29 Updated paving notch guidance Added 6.3.3.8.3 False Decking reference. 33-34 35-36 Added Section 6.3.3.8.3 False Decking Clarified grooved pavement markings OK for PPC overlays, but prohibited for 9 14 "Polymer Overlay" and "HFST Polymer Overlay". 14 Replaced Standard Spec 646 with TEOpS manual reference 14 8,70,74,122 Updated contacts for Geotechnical Engineering Unit and BOS. 48 Removed paragraph break Clarified minimum wall radius for small blocks and large blocks. 74-75 99 Removed "These walls can be formed to a tight radius of curvature of 50 ft or areater" Updated retaining wall plan requirements. This includes showing the wall 125 elevation view from the front face perspective. Removed duplicate reference (FHWA-NHI-10-024) 132 Added reference - Design and Construction of Mechanically Stabilized Earth 132 (MSE) Walls (FHWA-NHI-24-002) 17 42 Clarified preferred span length and skew increments

	58	Updated contact to "Bureau of Structures Design Section Chief"
	70	Added overhang deck guidance for new raised sidewalk Std. 30.41
	74	Updated contact to "Bureau of Structures Development Section Chief or
		Design Section Chief"
	74	Added alternative protective systems are being evaluated. This includes
		chromium bars, textured epoxy coated bars, GFRP bars, and galvanized
		bars. Contact to "Bureau of Structures Development Section Chief"
		·
18	0.4	
18	21	Added note for maximum allowable camber exception for buried structures
18	21	Added note for maximum allowable camber exception for buried structures with BOS coordination.
18	21	·
18		with BOS coordination.
18 18E-1		with BOS coordination. Updated Text for Fatigue Evaluation to include the Concrete Density

18E-1	15, 34	Updated Text for Fatigue Evaluation to include the Concrete Density Modification Factor (λ) as shown in LRFD [5.4.2.8]
24	36-37	Replaced the term fracture critical member (FCM) with load path redundant members (LPRMs) and non-redundant steel tension members (NSTMs)
	91-94	Added Section 24.14.1 Redundancy in Floor Systems and 24.14.2 Simplified System Redundancy Analysis
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28	16	Added Section 28.7 Joint Armoring for guidance on the use of protection angles shown in Standard 28.01.

July 2025 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 ■ No revisions.

Std 9.02 ■ No revisions.

Std 9.03 ■ No revisions.

Chapter 11

Std 11.01 ■ Added two new details for pile points (CIP Piling and H-Piling)

Added designer note for pile point usage.

■ Corrected detail title for "End Plate Detail for CIP Piling"

Chapter 12

Std 12.01 ■ No revisions.

Std 12.02 ■ No revisions.

Std 12.03 ■ No revisions.

Std 12.04 ■ No revisions.

Std 12.07 ■ No revisions.

Std 12.08 ■ No revisions.

Std 12.09 ■ No revisions.

Std 12.10 ■ No revisions.

Std 12.11 • Updated Section C-C with raised sidewalk. See STD. 30.41 for details.

Std 12.12 ■ No revisions.

Std 12.13 ■ No revisions.

Chapter 13

Std 13.01 ■ No revisions.

Std 13.02 ■ No revisions.

Std 13.03 ■ No revisions.

Std 13.04 ■ No revisions.

Std 13.05 ■ No revisions.

Std 13.06 ■ No revisions.

Std 13.07 ■ No revisions.

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 ■ Corrected spelling for "Detail" in block title

Std 14.03 ■ No revisions.

Std 14.04 ■ No revisions.

Std 14.05 ■ No revisions.

Std 14.06 ■ No revisions.

Std 14.11 ■ No revisions.

Std 14.12 ■ No revisions.

Std 14.13 ■ No revisions.

Std 14.14 ■ 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 "See STD. 30.41 for alternative raised sidewalk details"

Std 17.02 Fixed dimension label for 5" V-groove dimension for "Cross section thru edge of deck" detail.

Std 17.03 ■ No revisions.

Chapter 18

Std 18.01 ■ Clarified paving notch usage.

Std 18.02 ■ Clarified paving notch usage.

Std 18.03 ■ 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 ■ No revisions.

Std 19.33 ■ Clarified paving notch usage.

Std 19.34 Changed note from "less than" to "less than <u>or equal to"</u> 20 degrees. This matches Std. 19.33 and Std. 19.35 guidance.

Clarified paving notch usage.

Std 19.35 ■ Clarified paving notch usage.

Std 19.36 ■ No revisions.

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Std 19.37 ■ No revisions.
       Std 19.38 ■ Changed "TWO 3 1/2" SQUARE... WASHERS" to "A 3 1/2"... WASHER ON
                    SLOTTED SIDE" within "DETAIL B"
       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 ■ 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.
       Std 27.02 ■ No revisions.
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Chapter 27

Std 27.05 ■ Clarified paving notch usage.

Std 27.06 ■ No revisions.

Std 27.07 ■ No revisions.

Std 27.08 ■ Updated anchor bolt length under "Anchor Bolt Notes" for 100'-0" to 150'-0" span lengths from 1'-0" to 1'-10".

Std 27.09 ■ No revisions.

Std 27.10 ■ No revisions.

Chapter 28

Std 28.01 ■ Added Designer Note for Protection Angle usage. See BM 28.7 for more info.

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 ■ Added Designer Note: "A DECK X-SLOPE OF 2% PROVIDES AN INTERNAL SLOPE OF 8% (AS SHOWN IN THIS DETAIL) AND A PLUMB DOWNSPOUT

COUPLER CONNECTION. DECK X-SLOPE MAY BE ADJUSTED UP TO 6% TO MAINTAIN AN INTERNAL SLOPE OF 2%."

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 ■ No revisions. Std 30.12 ■ No revisions. Std 30.14 ■ No revisions. Std 30.15 ■ No revisions. Std 30.16 ■ No revisions. Std 30.17 ■ No revisions. Std 30.18 ■ Added note for No.1 thru No. 4 "See Std. 30.40 for pedestrian railing details." Std 30.19 ■ No revisions. Std 30.20 ■ Updated ppt. height dimension snap & 1'-2" dim. snap on "Section Thru Parapet On Bridge" detail (to match 'Section A') 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 Added V-groove with note and 5" dimension to "Section thru parapet on bridge". ■ Added 3/4" Bevels at top of ppt. Std 30.34 ■ No revisions. Std 30.35 ■ No revisions. Std 30.36 ■ No revisions. Std 30.37 ■ Added 3/4" Bevels at top of ppt Std 30.40 Clarified slotted holes for CIP anchors are placed parallel to the C/L railing. ■ Corrected "deck mounted" keyed note regarding X-slope to the "Designer Notes" NEW Std 30.41 ■ Vertical Face Parapet 'A' With Raised Sidewalk Chapter 36 Std 36.01 ■ No revisions. Std 36.02 • Updated "Notes" and "Designer Notes" for precast usage Added SPV: "Precast Concrete Wingwalls (Structure)" Added SPV: "Precast concrete Box Culvert, (Span Size) FT X (Rise Size) FT" ■ Replaced "Section C6" cut off wall detail with "Cutoff Walls" details for outlet and inlet conditions. Std 36.03 ■ No revisions. Std 36.04 ■ No revisions. Std 36.05 ■ Updated "Notes" and "Designer Notes" for precast usage

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Std 36.06 Replaced As9 steel requirement with minimum wall thickness Tw.
                  ■ Updated "Notes" and "Designer Notes" for precast usage
       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 ■ No revisions.
       Std 39.02 ■ No revisions.
       Std 39.03 ■ No revisions.
       Std 39.04 ■ No revisions.
       Std 39.11 ■ No revisions.
       Std 39.12 ■ No revisions.
       Std 39.13 ■ No revisions.
       Std 39.14 ■ No revisions.
       Std 39.21 ■ Added note: 5.563" X 0.375" MAY BE SUBSTITUTED FOR 5.000" X 0.375"
       Std 39.22 ■ No revisions.
       Std 39.23 ■ No revisions.
       Std 39.24 ■ No revisions.
       Std 39.25 ■ No revisions.
       Std 39.26 ■ No revisions.
       Std 39.27 ■ No revisions.
       Std 39.31 ■ No revisions.
       Std 39.32 ■ No revisions.
       Std 39.33 ■ No revisions.
       Std 39.34 ■ No revisions.
       Std 39.35 ■ No revisions.
       Std 39.36 ■ No revisions.
       Std 39.37 ■ No revisions.
       Std 39.38 ■ 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.
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Std 40.06 ■ No revisions.
Std 40.07 ■ No revisions.

- 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.
- Std 40.26 No revisions.
- 014 40.20 110 10 1310113
- Std 40.27 No revisions. Std 40.28 No revisions.
- 014 40.20 140 164 1510115
- Std 40.31 No revisions.
- 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 No revisions.

July 2025 Insert Sheet Update Summary

Chapter 19 - Prestressed Concrete

g36W.dwg	Corrected where stirrup dimension snapped. Added "=" to girder radius
	callouts.
g45W.dwg	Corrected where stirrup dimension snapped. Added "=" to girder radius
	callouts.
g54W.dwg	Added "=" to girder radius callouts.
g72W.dwg	Added "=" to girder radius callouts.
gstdia36W.dwg	Changed "TWO 3 1/2" SQUARE WASHERS" to "A 3 1/2" WASHER ON
	SLOTTED SIDE" within "DETAIL B"

July 2025 Block Details Update Summary

Updated: 2025-05-14

Templates

Start-Up Template

LAYOUT & GEO (decimal-ft)

DETAILS (architectural-in)

No revisions.

No revisions.

Sheet Layouts - BOS

SHEET 1 ■ No revisions.

SHEET 2 ■ No revisions.

SHEET 4 (GEOTECH) ■ No revisions.

Sheet Layouts - Consultant

SHEET 1 No revisions.

SHEET 2 No revisions.

SHEET 4 (GEOTECH) No revisions.

Custom Tools

Purge Non-Structures Styles
Import Structures Layers
Fix Annotation Scales
Convert DGN Drawing
Check Drawing Type
Paste Table

No revisions.
No revisions.
No revisions.
No revisions.
No revisions.

Anno

Quick Annotations

Dimension

Decimal Dimension

General Text

Subtitle Text

Title Text

Multileader

No revisions.

No revisions.

No revisions.

No revisions.

No revisions.

Tables

Table Template ■ No revisions.

Paste Table ■ No revisions.

Standard Notes

Keynote MultileaderNote CalloutNo revisions.Standard Bubble NotesNo revisions.No revisions.

Symbols

Symbols ■ No revisions. **Numbered Symbols** No revisions. **Revision Symbols** No revisions. Swirl No revisions. Breakline ■ No revisions. Masked Arrow ■ No revisions. Section Mark No revisions. Station Mark No revisions. Weld Symbol No revisions. Caution Symbol ■ No revisions. https://c3dkb.dot.wi.gov/

Gen Plans

Sheet Layout

Design Data ■ Added "Pre-Boring" notes

Design Contacts ■ No revisions.

Sheet List ■ No revisions.

Plan

North Arrow
Waterway Flow
Lane Arrows
No revisions.
Wing Note
Station Mark
Riprap
No revisions.

Elevation

Cross Slope

Waterline Symbol

Fill Detail at Wings

No revisions.

No revisions.

Riprap Toe Detail

• Updated "Stream Bed" annotation to flip with block

Elevation Scale

No revisions.

CS & Quan

Cross Section

Cross Slope ■ No revisions.

Bid Items and Quantities

Bid Items and Quantities Table ■ No revisions.

General Notes

New Bridges ■ No revisions.

Overlays ■ No revisions.

Typical Details

Profile Grade Line

Abutment Backfill Diagram

Abutment Backfill Details

Rodent Screen Details

Bench Mark

No revisions.

No revisions.

No revisions.

Substr.

All Bridge Structures

Standard Bubble Notes

Rocker Bearing

Beam Seat

Beveled Keyway

Pile Details

Pile Elevations

Batter Arrow

No revisions.

No revisions.

No revisions.

No revisions.

No revisions.

No revisions.

Abutments

A1 Abutment Section

Slope Paving

Rodent Screen Detail

No revisions.

No revisions.

Rodent Screen Detail

6 in Drain

No revisions.

Eyebolt

No revisions.

No revisions.

Piers

Pier Column

Rustication Detail

Bevel

Precast Option

■ No revisions.

No revisions.

No revisions.

No revisions.

Rebar

Bar Detailing

Rebar Section

Deck Bar Callout

Stirrup

No revisions.

U-Bar

Rotated Stirrup & U-Bar

L-Bar

Development Lap

No revisions.

No revisions.

No revisions.

No revisions.

Hooked Bar
Parapet Bars
Rebar Sketch
■ No revisions.
No revisions.
■ No revisions.

Bill of Bars

Bill of Bars

Bundling Detail

All Bar Bends

No revisions.

No revisions.

No revisions.

L Bar ■ Made location of bar leg rotatable and flippable

■ No revisions.

No revisions.

Stirrups ■ No revisions. U Bar No revisions. Spiral ■ No revisions. Z Bar No revisions. Hook ■ No revisions. Double Hook ■ No revisions. Hairpin No revisions. Hooked Hairpin No revisions. 135 Bend ■ No revisions. Hat ■ No revisions. Abut Diaphragm No revisions. 32SS Bars No revisions. 36SS Bars ■ No revisions.

Super

Girder

Prestressed Shapes
Prestressed Girder Plan
Haunch Details
Shear Connection Details
Transportation Note

No revisions.
No revisions.
No revisions.
No revisions.

Concrete Slab

42SS Bars

56SS Bars

Section Thru Slab

Added SE abutment option
Section Thru Slab with Paving Notch

Added SE abutment option

Deck **Deck Section** ■ No revisions. ■ No revisions. Joint Details Median Details ■ No revisions. Polymer Overlay Transition ■ No revisions. Floor Drain No revisions. Strip Seal Elevation ■ No revisions. Annotation V Groove Note ■ No revisions. **Deck Bar Callout** ■ No revisions. **TOD Elevation Table** ■ No revisions. **Deflection Diagram** ■ No revisions. **Tangent Offset Table** ■ No revisions. **Barriers** Parapets and Barriers ■ No revisions. **Barriers Parapet Transition** ■ No revisions. Beamguard Anchor Assembly Detail No revisions. **NEW** ■ New Section Thru Parapet on Super. Fence and Railings Fence and Railing ■ No revisions. Lights Light ■ No revisions. **Steel** Piles **CIP Piles** ■ No revisions. **HP Piles** ■ No revisions. Sheet Pile No revisions. Elevations ■ No revisions. Steel Shapes Angle ■ No revisions. Channel No revisions. HSS No revisions. MC Channel ■ No revisions. Pipe ■ No revisions. WF Beam ■ No revisions. **Bolts Bolt Plan** ■ No revisions. **Bolt Elevation** No revisions. Anchor Rod No revisions. Washer ■ No revisions. Other Girder Stud No revisions. Rocker Bearing No revisions.

No revisions.

■ No revisions.

Strip Seal Joint

Weld Symbol

Culvert

General Plan

Design Data and General Notes

Backfill Note Backfill Details Misc. Notes

Box Details

Header Bars Header Detail Joint Detail Apron Details

> Cut Off Wall Detail Inlet Nose Details Joint Detail

Name Plate Detail

NEW Precast Culvert

No revisions.

■ No revisions.

■ No revisions.

No revisions.

■ No revisions.

Precast Box Culvert ■ New

Wall

Notes and Typical Section

Design Data General Notes & Data Tables

MSE Wall Typical Section

Elevation Detail Joint Detail Name Plate

Details

Coping Section Anchor Slab Section ■ No revisions.

No revisions.

■ No revisions.

Misc.

Structural Approach Slab

Typical Section

NEW Section Thru Corner

Subsurface Exploration

Grid

Boring Table

Viewport

Outline

■ No revisions.

■ New

■ No revisions.

■ No revisions.

■ No revisions.