

DATE: January 28, 2025
TO: Bridge Manual Users
FROM: DTSD – Bureau of Structures
SUBJECT: **January 2025 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, Standards and Inserts that were revised.

Of particular interest in this edition:

- **Chapter 11** - Clarified overall stability evaluations within the Service Limit State. Provided Maximum Resistance Factors (and Minimum Safety Factors) based on geotechnical parameters and other conditions per LRFD [11.6.2.3] 8th Edition (2017).
- **New Standard 30.40 – Pedestrian Railing:** New pedestrian railings details following Standard 30.17 (Combination Railing Types ‘C1-C6’) with curb mounted or deck mounted anchorage. Anchorage details also applicable for curb mounted or deck mounted railings for Standard 30.11 (Chain Link Fence Details) and Standard 30.15 (Tubular Steel Railing Screening).
- **Overhead Sign Structure - Standard Design Drawings** – Several changes to the Standard Design Drawings and published 10/24. Refer to the Standard Details Update Summary for a complete list of changes.

Additional Notes:

- Civil 3D Structure Blocks were updated 12/03/2024. Refer to C3DKB for additional information.
- Added January 2025 Insert Sheet Update Summary to January Memo.

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 2025 Bridge Manual Text Update Summary

<u>Chapter</u>	<u>Page Number(s)</u>	<u>Change</u>
6	38	Corrected bid item "Excavation for Structures Bridges (Structure)" from "Lump Sum" to "Each". This change was made in the 2023 Std. Spec.
	41	Corrected bid item "Cofferdam (Structure)" from "Lump Sum" to "Each". This change was made in the 2023 Std. Spec.
9	14	Added guidance on permanent pavement markings
11	12-13	Clarified use of Minimum Safety Factors Service I load combination for overall stability evaluations. Provided Maximum Resistance Factors (Minimum Safety Factors) based on geotech parameters, conditions, and support or contains a structural element.
	36	Noted Section 11.3.1.17.1 (Downdrag Load) is under development to address recent changes in AASHTO LRFD (2024) regarding downdrag and use of the Neutral Plane Method.
14	127	Changed "Wall Gabion" SPV note from "under development" to "Contact BOS Design before using and to obtain the most recent version."
	127	Removed "Wall Modular Bin or Crib" SPV due lack of usage
	127	Removed "Wall CIP Facing Mechanically Stabilized Earth" SPV due lack of usage.
30	10	Added commentary on box culvert with traversable grates. Usage is limited and subject to BOS approval.
	10	Changed Standard Detail Reference from "Box Culvert Details" to "Guardrail Post Anchorage System".
	10	Updated FDM References
36	26	Added guidance for culvert header locations and culvert wing lengths.
40	39	Removed sentence "If shear connectors are on the existing top flanges, additional shear connectors are not to be added as welding to the top flange may be detrimental." This topic is addressed in Chapter 24.6.21 and 24.7.1.
	50-51	Clarified that the Specified Tensile Strength, F _{uta} , is the minimum of the tensile strength, 1.9 x yield strength, or 125 ksi.
41	11,13	Changed "Bridge or Structure" to "Bureau of Structures"

January 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 ■ No revisions.

Chapter 12

- Std 12.01 ■ Clarified dowel bar location in detail "TYPE A1 With Fixed Seat"
- Std 12.02 ■ No revisions.
- Std 12.03 ■ No revisions.
- Std 12.04 ■ No revisions.
- Std 12.07 ■ No revisions.
- Std 12.08 ■ Clarified pile clearance from bars (6" min.)
- 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 ■ 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 ■ No revisions.
- Std 14.03 ■ No revisions.
- Std 14.04 ■ No revisions.
- Std 14.05 ■ No revisions.
- Std 14.06 ■ Moved Designer Note Symbol for 6-inch min. dimension.
- 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 ■ No revisions.
- Std 17.02 ■ No revisions.
- Std 17.03 ■ Clarified flashing notes and details.

Chapter 18

- Std 18.01 ■ Corrected bottom mat bars to extend Ld (Others) into haunch (not 1d).
■ Added note for bar spacing considerations over piers
- Std 18.02 ■ Added note for bar spacing considerations over piers
- 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 ■ In the "Location of Draped Strands" detail corrected where the "Bottom of Girder" arrow was pointing, removed period.
- Std 19.12 ■ No revisions.
- Std 19.13 ■ In the "Location of Draped Strands" detail corrected where the "Bottom of Girder" arrow was pointing, removed period.
- Std 19.14 ■ No revisions.
- Std 19.15 ■ In the "Location of Draped Strands" detail corrected where the "Bottom of Girder" arrow was pointing, removed period.
- 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 ■ Changed diaphragm offset from 1" to 1.5" (measured from beam face)

- Added bent angle detail to "Diaphragm Support" with 3/4" RAD. (min) bend.
- 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 ■ 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 ■ 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 ■ Updated anchorage detail to deck/curb. See Std. 30.40 for anchorage detail.
■ Added chain link fence reference to see Std. 30.11
- Std 30.11 ■ Added Designer Note: See Std. 30.40 when mounted on curb or deck.
■ Added Designer Note: 8'-0" max. post spacing with 8'-0" max. fence height
■ Added Line Post (on deck/curb) to Table "Fence Member Size and Weight"
- Std 30.12 ■ Updated Designer Note: 8'-0" max. post spacing with 8'-0" max. fence height
- Std 30.14 ■ No revisions.
- Std 30.15 ■ Added Designer Note: See Std. 30.40 when mounted on curb or deck.
Added Designer Note: 10'-0" max. post spacing with 8'-0" max. fence height when mounted on parapet.
■ Added Designer Note: 8'-0" max. post spacing with 8'-0" max. fence height when mounted on curb or deck.
- Std 30.16 ■ No revisions.
- Std 30.17 ■ Updated Designer Note: See Std. 30.40 for pedestrian railing.
Updated Designer Note: 9'-0" max. post spacing (for pedestrian railing)
- 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.
- NEW** Std. 30.40 ■ Pedestrian Railing

Chapter 36

- Std 36.01 ■ No revisions.
- Std 36.02 ■ No revisions.
- Std 36.03 ■ Updated Sheet Membrane bid item
■ Added barrel reinforcement to "Vertical Construction Joint" for clarity
- 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 ■ Added Designer Note: 8'-0" max. post spacing with 9'-0" max. fence height when mounted on curb or deck.
- Added Designer Note: See Std. 30.40 when mounted on curb or deck.
- Added Designer Note: See Std. 37.02 for fence member sizes.
- Updated fence anchorage details and notes.
- Std 37.02 ■ Updated Post members from 2.375" to 2.875" in Table.

Chapter 38

- Std 38.01 ■ No revisions.

Chapter 39

- Std 39.01 ■ No revisions.
- Std 39.02 ■ No revisions.
- Std 39.03 ■ Added "Full Span Stiffened Bearing Connection" detail
- Added "Full Span Clamp Connection" detail
- Std 39.04 ■ Changed "MFI" footing diameter from 2'-0" to 2'-6"
- Changed "MFI" footing diameter from 2'-6" to 3'-0"
- Updated AX01 bar size and quantity
- Corrected A402 bar lengths
- Corrected AX01 bars in Foundation Dimension Data table to match Bill Of Bars
- Updated Reinforcement Estimated Quantities
- Provided Concrete Quantities to the nearest 0.1 CY
- Added "A" and "S" to Foundation Dimension Data table
- Defined Anchor Diameter as "AD"
- Replaced "W" with 2x"AD" for anchor plate width
- Std 39.11 ■ No revisions.
- Std 39.12 ■ No revisions.
- Std 39.13 ■ No revisions.
- Std 39.14 ■ Corrected A801 and A402 bar lengths
- Updated Reinforcement Estimated Quantities
- Provided Concrete Quantities to the nearest 0.1 CY
- Corrected anchor assembly to 1.75-INCH
- Added "AD", Base Plate "THK", and "BC" values to table
- Std 39.21 ■ No revisions.
- 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 ■ Corrected A801 and A402 bar lengths
- Updated Reinforcement Estimated Quantities
- Provided Concrete Quantities to the nearest 0.1 CY
- Added 4" dimension to drilled shaft stirrups
- 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 ■ Added 4" dimension to drilled shaft stirrups
- Corrected Standard Design Type III for "V" (A605 spacing value) to 30
- Std 39.38 ■ Corrected A_01 and A402 bar lengths
- Updated Reinforcement Estimated Quantities
- Provided Concrete Quantities to the nearest 0.1 CY

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 ■ 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.
- Std 40.27 ■ No revisions.
- Std 40.28 ■ No revisions.
- 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.

January 2025 Insert Sheet Update Summary

Chapter 19 - Prestressed Concrete

gstdia70.dwg	Changed diaphragm offset from 1" to 1.5" (measured from beam face). Added bent angle detail to "Diaphragm Support" with 3/4" RAD. (min) bend.
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Chapter 30 - Railings

railm.dwg	Corrected W6x25 depth dimension from 9 5/8" to 6 3/8" in "Section Thru Railing On Deck". This error occurred during the July 2022 Civil 3D Insert Sheet conversion.
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